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14-Hour CILB Credits

Continuing Education

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has never been easier!**

**License Renewal Deadline
August 31st**

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Approval #0613125

Quick Start Guide

How to renew your CILB Contractor License

Gold Coast makes it easy to complete the 14-Hour Continuing Education required to renew your Florida CILB Contractor License.

Everything needed to complete your CILB Contractor License continuing education requirement is included in this book.

Step 1

Use this book to answer the exam questions found at the back.

Step 2

Submit your answers using our instant online grading at GoldCoastSchools.com, or by mailing your answer sheet along with payment to: **Gold Coast Schools, 2101 Park Center Dr. Suite 190, Orlando, FL 32835**. You may also bring your answer sheet to any Gold Coast Schools location.

Step 3

7 Business days after you have submitted and passed your exam visit myfloridalicense.com to pay the renewal fee and renew your license.

IT'S THAT EASY! Upon completion, we report your completion records to the DBPR for you and provide you with a certificate of completion for your records at no additional charge.

ADDITIONAL INFORMATION

CILB Renewal Requirements:

All Certified Contractors must complete 14 hours of CE and pay their renewal fees by August 31st.

Questions?

If you have any questions about this course and how to renew your license, our helpful Career Counselors are here to assist.

Call 1-800-732-9140



Gold Coast School of Construction

Florida

14-Hour CILB

Continuing Education

Bundle 2024

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Gold Coast respects student privacy. Course records are confidential, and the company does not sell or rent any student information including address, phone number, or email address to any unaffiliated company or organization

PREFACE

Gold Coast thanks all of our current and former students who have helped us become the most prestigious construction school in Florida. Some of you may have obtained your licensing education from us back in 1970, while others may have received it recently. You are the reason we are in business. If there is anything that we can do to assist you, please ask.

We have strived to make the continuing education book enjoyable, informative, and relatable to day-to-day life. This year we are pleased to provide you with this correspondence course. The course syllabus is found on the next few pages.

As a Gold Coast student, we want to make sure that you are aware of the laws, rules, and codes that affect your license. While the following are not new law changes, they are nevertheless very important laws and rules you should be aware of to protect your license and avoid fines.

- As you know, sole proprietors or partnerships cannot be exempt from the workers' compensation insurance requirement. For corporations, the exemption is still allowed for up to three corporate officers who each own 10% or more of the company's stock. Realize that a total of three exemptions is also the limit for any "affiliated" grouping of companies (companies where the same individuals have ownership).
- "Advance Module" Building Code update courses remain a part of the CE requirement of most boards. Contractors need one hour; architects need two hours. Our program includes two of these "Advanced Module" hours.
- Computer tracking is in place and 100% compliance is in force. The renewal of your license WILL NOT be issued until you have completed all of the required CE hours. The statewide system tracks license history, CE, and sanctions for both certified and registered contractors. It is important for you to establish an online account with the DBPR. You can do this by visiting myfloridalicense.com. Once your account is established, it is equally important to select the "Profile Merge" feature. This will ensure that informational changes to one license will be carried forward to all of your other licenses, if applicable.

We at Gold Coast School of Construction are working hard to keep up with these changes and look forward to being your professional education provider both now and in the future.

Thank you to the team that put this book together including all of our authors, editors, and designers.

Sincerely,



Chris Clausing
Director of Construction
Gold Coast School of Construction,
dba of Gold Coast Professional Schools, LLC.

COURSE SYLLABUS/LEARNING OBJECTIVES

Florida 14-Hour CILB Continuing Education Bundle

Course Approval # 0613125 and Provider # 000983

Workplace Safety (1Hr)		
<u>Segment</u>	<u>Title and Objective Description</u>	<u>Time</u>
1	Introduction to OSHA	5 mins
2	OSHA Safety Standards - What's New Employer Responsibility	5 mins
3	Safety Programs	10 mins
4	Top 10 Cited Standards	10 mins
5	OSHA Presentation Significant Changes in the Residential	5 mins
6	Fall Protection Policy	5 mins
7	The requirements for <i>Crystalline Silica</i>	5 mins
8	OSHA Penalties and Summary	5 mins
Total Time		50 mins

Workers' Compensation (1Hr.)		
<u>Segment</u>	<u>Title and Objective Description</u>	<u>Time</u>
1	Overview History	5 mins
2	Legislative Change to F.S.440	5 mins
3	Compliance Requirements	5 mins
4	Coverage options	5 mins
5	Exemption Advantage or Disadvantages	5 mins
6	Assistance from Division of Workers Comp (DWC)	10 mins
7	Division of Workers Compensation – Statistics	5 mins
8	Employers FAQs	5 mins
9	Penalties	5 mins
Total Time		50 mins

Successful Business Practices (1Hr.)		
<u>Segment</u>	<u>Title and Objective Description</u>	<u>Time</u>
1	Administration	5 mins
2	Comply with State Laws	5 mins
3	Training and Employment Practices to Comply with Laws	10 mins
4	Best Management Practices	10 mins
5	Clear Objectives	5 mins
6	Effective Communication	5 mins
7	Application of Standards	10 mins
Total Time		50 mins

Laws and Rules (1Hr.) + General Education (1Hr.)		
<u>Segment</u>	<u>Title and Objective Description</u>	<u>Time</u>
1	Florida Statues	5 mins
2	F.S. 455 General Provisions	5 mins
3	F.S. 455 General Provisions	10 mins
4	F.S. 468 Building Code Administrators & Inspectors	10 mins
5	F.S. 471 Engineering	10 mins
6	F.S. 481 Architects	10 mins
7	F.S. 489 Contractors	10 mins
8	Florida Administrative Code	5 mins
9	Rule 61G1 Architects	5 mins
10	Rule 61G15 Engineers	10 mins
11	Rule 61G4 Contractors	10 mins
12	Rule 61G19 Building Code Administrators & Inspectors	10 mins
Total Time		100 mins

Wind Mitigation Methodology: Understanding Product Approval (1Hr)		
<u>Segment</u>	<u>Title and Objective Description</u>	<u>Time</u>
1	What is a product approval? Local approval The State of Florida PA system Notice of Acceptance (NOA)	10 mins
2	Local Product Approval Miami Dade Approvals Knowledge of products and documentation	15 Mins
3	Florida Product Approval Florida Statute 553.842 How to find relevant approvals to fill the Uniform Mitigation Verification Inspection Form (OIR-B1-1802) What areas can the product be used in? Do you have to accept an FLPA?	15 mins
4	Notice of Acceptance Where do they come from? Miami Dade Testing Texas Department of Insurance (TDI) Other NRTLs How to verify a Product Approval and review the NOA before filing the Uniform Mitigation Verification Inspection Form (OIR-B1-1802) The installation requirements section(s)	10 mins
Total Time		50 mins

2023 Advanced Training: Florida Energy Conservation (2Hr)

<u>Segment</u>	<u>Title and Objective Description</u>	<u>Time</u>
1	Which version applies? A little History - Energy through the years Energy Through Years	5 mins 5 mins
2	Navigating the Energy Conservation Volume Commercial Residential	5 mins 5 mins
3	Finding Code Requirements Commercial: Residential:	7 mins 7 mins
4	Where are these other requirements and what are they for? Where to find the code requirements / Beyond Code Need for Inspections- Required Inspections Commercial / Residential Mandatory Requirements / Commercial and Residential Construction Documents Commercial Inspection requirements - Commercial Construction Documents Residential Inspection requirements Residential Other requirements Commercial / Residential	5 mins 10 mins 10 mins 10 mins 5 mins 10 mins 5 mins 5 mins
5	Existing Buildings The "Renovated Building" dilemma Repairing portions and systems Is engineering required? When do new calculations and paperwork apply?	5 mins 10 mins 5 mins 6 mins
Total Time		100 mins

Pool Electrical Requirements (1Hr)

<u>Segment</u>	<u>Title and Objective Description</u>	<u>Time</u>
1	Introduction & Course Administration	5 mins
2	Course Completion Instructions & Purpose	5 mins
3	History	5 mins
4	The Empowering Legislation	5 mins
5	New Rules: F.A.C 61G4-12.001(15)	10 mins
6	New Rule: F.A.C 61G4-18.001(2)(g)	10 mins
7	Issues & Reasons for the Electrical CE Requirements	10 mins
Total Time		50 mins

Know Your Building Code! (FBC – Building) (1Hr)**General Education**

<u>Segment</u>	<u>Title and Objective Description</u>	<u>Time</u>
1	Administration	5 mins
2	Definitions	5 mins
3	Use and Occupancy Classifications	10 mins
4	General Building Heights and Areas	10 mins
5	Types of Construction	10 mins
6	Fire and Smoke Protection Features	10 mins
Total Time		50 mins

Know Your Building Code! (FBC – Residential) (1Hr)		General Education
<u>Segment</u>	<u>Title and Objective Description</u>	<u>Time</u>
1	Administration	5 mins
2	Definitions	5 mins
3	Building Planning	10 mins
4	Area Requirements	10 mins
5	Stairs	10 mins
6	Building Planning (Continued)	10 mins
Total Time		50 mins

Know Your Building Code! (FBC – Existing) (1Hr)		General Education
<u>Segment</u>	<u>Title and Objective Description</u>	<u>Time</u>
1	Administration	5 mins
2	When is a Building Considered Existing?	10 mins
3	Repairs	10 mins
4	Alterations	10 mins
5	Other items	15 mins
Total Time		50 mins

Know Your Building Code! (FBC – Plumbing) (1Hr)		General Education
<u>Segment</u>	<u>Title and Objective Description</u>	<u>Time</u>
1	Administration	5 mins
2	Identifying Parts of the System	15 mins
3	Water Conservation	15 mins
4	The Evolution of Plumbing Systems	15 mins
Total Time		50 mins

Know Your Building Code! (FBC – Mechanical) (1Hr)		General Education
<u>Segment</u>	<u>Title and Objective Description</u>	<u>Time</u>
1	Administration	5 mins
2	Identifying Parts of the System	15 mins
3	How Does a Typical Split System Work	15 mins
4	The Evolution of Mechanical Systems	15 mins
Total Time		50 mins
Total Course Time		14 hours / 700 minutes

SUPPORT

Who do I contact at Gold Coast for support?

Your questions and feedback are welcome. Please contact us as follows:

Gold Coast Career Counselor Assistance: For assistance with course purchases or exam grading options, call 1-800-732-9140 (M-F 8:30am-5pm, Saturday 8:30am-Noon).

Technical Support: For assistance with running your course, call 954-315-7698 (M-F 8:30am-5pm) or click “Get Help” at any time to create a support ticket.

Gold Coast Instructor Support: For course content related questions, call 1-800-732-9140, Ext. 8232 (M-F 9am-5pm) or email your questions to contractor@goldcoastschools.com.

FOR DETAILED INFORMATION SCAN QR CODES THROUGHOUT THE PUBLICATION

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Chapter 1

WORKPLACE SAFETY

INTRODUCTION TO OSHA

OSHA Act of 1970

The Act: “To assure safe and healthful working conditions for working men and women; by authorizing enforcement of the standards developed under the Act; by assisting and encouraging the States in their efforts to assure safe and healthful working conditions; by providing for research, information, education, and training in the field of occupational safety and health; and for other purposes. Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that this Act may be cited as the Occupational Safety and Health Act of 1970 (OSH Act).

OSHA’s Mission

With the OSH Act, Congress created the Occupational Safety and Health Administration (OSHA) to assure safe and healthful working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education, and assistance.

The OSH Act was passed to prevent workers from being killed or seriously harmed at work. This law created the OSHA that sets and enforces protective workplace safety and health standards. OSHA also provides information, training, and assistance to employers and workers.

Under the OSH Act, employers have the responsibility to provide a safe workplace.

In the field of training, over 35 years ago, OSHA established the Outreach Training Program with the introduction of OSHA 10 hours and OSHA 30 hours. Over the past several years, more than 1.6 million students have been trained. Today, the outreach program has a national network of over 16,000 independent trainers.

Federal OSHA Coverage and Statistics

OSHA is an official entity where all worker’s complaints should be heard and addressed accordingly.

It is the agency responsible for providing research, information, education, and training guidelines for any area related to occupational safety and health.

OSHA provides standards for many industries; however, for this course we focus on the standards relative to the construction industry, 29 CFR 1903, 1910, and primarily, 1926.

5,333 workers died on the job in 2019 <https://www.bls.gov/news.release/cfoi.nr0.htm> (3.5 per 100,000 full-time equivalent workers) — on average, more than 100 a week or about 15 deaths every day. About 20% (1,061) of worker fatalities in private industry in calendar year 2019 were in construction — accounting for one in five worker deaths for the year.

The 5,333 fatal occupational injuries in 2019 represents the largest annual number since 2007. Fatalities in the private construction industry increased 5 percent to 1,061— the largest total since 2007. A worker died every 99 minutes from a work-related injury in 2019

The following were the top 10 most frequently cited standards by Federal OSHA in fiscal year 2020

1. Fall Protection, construction (29 CFR 1926.501)
2. Hazard Communication Standard, general industry (29 CFR 1910.1200)
3. Respiratory Protection, general industry (29 CFR 1910.134)
4. Scaffolding, general requirements, construction (29 CFR 1926.451)
5. Ladders, construction (29 CFR 1926.1053)
6. Control of Hazardous Energy (lockout/tagout), general industry (29 CFR 1910.147)
7. Powered Industrial Trucks, general industry (29 CFR 1910.178)
8. Fall Protection–Training Requirements (29 CFR 1926.503)
9. Eye and Face Protection (29 CFR 1926.102)
10. Machinery and Machine Guarding, general requirements (29 CFR 1910.212)

Effectiveness of the OSHA Mandate

In more than four decades, OSHA and its state partners, coupled with the efforts of employers, safety and health professionals, unions, and advocates, have had a dramatic effect on workplace safety.

Worker deaths in America are down on average, from about 38 worker deaths a day in 1970 to 15 a day in 2019. Worker injuries and illnesses are down from 10.9 incidents per 100,000 full-time equivalent workers in 1972 to 2.8 per 100,000 in 2019.

OSHA SAFETY STANDARDS - WHAT'S NEW?

The OSHA standards are contained in Title 29 of the Code of Federal Regulations (CFR) or written as "29 CFR." OSHA provides standards for many industries; however, for this course we focus on the standards relative to the construction industry, 29 CFR 1903, 1910, and primarily, 1926. These are the specific OSHA standards that regulate and affect various types of work environments and activities:

- **Part 1926:** Construction is regulated by Part 1926 that affects new construction, major renovation work, and demolition work.
- **Part 1903:** Part 1903 affects inspections, citations, and proposed penalties.
- **Part 1904:** Part 1904 affects recording and reporting occupational injuries and illness.
- **Part 1910:** Part 1910 affects general industry standards.

Each part is further subdivided into subparts that are organized alphabetically. Each clause starts with 1926 and is then divided into paragraph, then several sub-sub paragraphs. The typical example is 1926.453(a)(1)(i)[A]

Confined Spaces in Construction

New sections were added. This standard took effect in 2015.

Examples of locations where confined spaces may occur include, but are not limited to, the following:

- Air Preheaters
- Boilers
- Chillers
- Enclosed Beams
- Incinerators
- Lift Stations
- Pits (such as elevator, escalator, pump, equipment)
- Precast concrete and other preformed valve or other manhole units
- Tanks (such as fuel, chemical, water or other liquid, solid, or gas)
- Vessels
- Air Receivers
- Cesspools
- Concrete pier columns
- Heating, ventilation, and air conditioning (HVAC) ducts
- Mixer Reactors
- Water mains

1 **Cranes and Derricks in Construction: 1926.1427**

2
3 This is a new section. There is a great push to have the crane operators certified. The deadline now is
4 December of 2018. Those involved with the use of cranes and derricks, please review this section and
5 the requirements. 1926.1427 Cranes and Derricks in Construction Operator Qualifications Standard was
6 amended and was made effective on 7th Feb 2019.
7

8 **Beryllium in Construction and Shipyards: 1926.1124**

9
10 **The most recent changes to the rules for Beryllium in Construction went into effect on 9/30/2020,**
11 **however, the standard has been updated several times since 2018, mostly for clarity and to better**
12 **align with adjacent rules in 29 CFR 1910 General Industry.**

13 **Residential Fall Protection**

14
15 OSHA is emphasizing and bringing great awareness for the requirement for Crystalline Silica Rule:
16 Construction. Implementation date June 23, 2017, Enforcement September 23, 2017.
17
18

19 **EMPLOYER RESPONSIBILITY**

20
21 This is a short summary of key employer responsibilities:

22 Please remember that the prime contractor assumes all obligations prescribed as employer.

- 23 • Provide a workplace free from serious recognized hazards and comply with standards, rules and
24 regulations issued under the OSH Act.
- 25 • Examine workplace conditions to make sure they conform to applicable OSHA standards.
- 26 • Make sure employees have and use safe tools and equipment and properly maintain this equipment.
- 27 • Use color codes, posters, labels, or signs to warn employees of potential hazards.
- 28 • Establish or update operating procedures and communicate them so that employees follow safety and
29 health requirements.
- 30 • Employers must provide safety training in a language and vocabulary workers can understand.
- 31 • Employers with hazardous chemicals in the workplace must develop and implement a written hazard
32 communication program and train employees on the hazards they are exposed to and proper precautions
33 (and a copy of safety data sheets must be readily available). See the OSHA page on Hazard
34 Communication.
- 35 • Provide medical examinations and training when required by OSHA standards.
- 36 • Post, at a prominent location within the workplace, the OSHA poster (or the state-plan equivalent)
37 informing employees of their rights and responsibilities.
- 38 • Keep records of work-related injuries and illnesses. (Note: Employers with ten or fewer employees and
39 employers in certain low-hazard industries are exempt from this requirement.)
- 40 • Report to the nearest OSHA office all work-related fatalities within eight hours, and all work-related
41 inpatient hospitalizations, all amputations and all losses of an eye within 24 hours. Call the OSHA toll-free
42 number 1-800-321-OSHA (6742); TTY 1-877-889-5627. [Employers under federal OSHA's jurisdiction
43 were required to begin reporting by January 1, 2015. Establishments in a state with a state-run OSHA
44 program should contact their state plan for the implementation date].
- 45 • Provide employees, former employees and their representatives access to the Log of Work-Related
46 Injuries and Illnesses (OSHA Form 300). On February 1, and for three months, covered employers must
47 post the summary of the OSHA log of injuries and illnesses (OSHA Form 300A).
- 48 • Provide access to employee medical records and exposure records to employees or their authorized
49 representatives.
- 50 • Provide to the OSHA compliance officer the names of authorized employee representatives who may be
51 asked to accompany the compliance officer during an inspection.
- 52 • Not discriminate against employees who exercise their rights under the Act. See the OSHA
53 "Whistleblower Protection" webpage.
- 54 • Post OSHA citations at or near the work area involved. Each citation must remain posted until the
55 violation has been corrected, or for three working days, whichever is longer. Post abatement verification

1 documents or tags.

- 2 • Correct cited violations by the deadline set in the OSHA citation and submit required abatement
3 verification documentation.

4
5 OSHA encourages all employers to adopt an injury and illness prevention program. These programs,
6 known by a variety of names, are universal interventions that can substantially reduce the number and
7 severity of workplace injuries and alleviate the associated financial burdens on U.S. workplaces. Also,
8 numerous employers in the United States already manage safety using injury and illness prevention
9 programs, and we believe that all employers can and should do the same. Most successful programs are
10 based on a common set of key elements. These include management leadership, worker participation,
11 hazard identification, hazard prevention and control, education and training, and program evaluation and
12 improvement.

14 SAFETY PROGRAMS

15
16 A written safety program is a very useful and essential tool to follow all OSHA requirements. It can also
17 provide a discount in your workers' compensation insurance premium. If you don't have one, we suggest
18 that you implement one. In Florida, you can take advantage of the easily available toolkit from the
19 University of South Florida found at:

20 <https://health.usf.edu/publichealth/cohpe/usfsafetyflorida/our-online-applications/safetywriter>



21
22 Also, we suggest that you buy an OSHA book for each of your supervisors as part of their hiring process
23 and make it mandatory. You will surely see the difference.

24
25 Important topics to include in a safety program are:

- 26
27 • Control and prevention hazards • Emergency response plans
28 • First and CPR trained personnel • Goals and objectives of the program
29 • Identification of potential hazards on the jobsite • Inspections, training, accident reporting and
30 investigation
31 • Job hazard assessment • Management commitment
32 • Personal protective equipment • Policies and procedures
33 • Record keeping • Safety & health training, employee orientation
34 • Unit safety responsibilities
35 • Vehicle safety and use

36
37 Advantages of a safety program include:

- 38
39 • Insurance Savings • Savings in lost time and productivity due to accidents
40 • Good management tool to assure compliance
41 • Enhancement of workers' safety awareness

42 TOP 10 CITED STANDARDS

43
44 These statistics have been compiled from the Department of Labor as of December 2020.

45
46 The following were the top 10 most frequently cited standards by Federal OSHA in fiscal year 2020:

- 47 1. Fall Protection, construction (29 CFR [1926.501](#))
48 2. Hazard Communication Standard, general industry (29 CFR 1910.1200)
49 3. Respiratory Protection, general industry (29 CFR 1910.134)
50 4. Scaffolding, general requirements, construction (29 CFR [1926.451](#))
51 5. Ladders, construction (29 CFR [1926.1053](#))
52 6. Control of Hazardous Energy (lockout/tagout), general industry (29 CFR 1910.147)

- 1 7. Powered Industrial Trucks, general industry (29 CFR 1910.178)
- 2 8. Fall Protection–Training Requirements (29 CFR 1926.503)
- 3 9. Eye and Face Protection (29 CFR 1926.102)
- 4 10. Machinery and Machine Guarding, general requirements (29 CFR 1910.212)

5
6 As you can see, Five out of the ten belong to the construction industry.

7
8 Fall is on the top of the list again! The following are Prevention Videos for Construction Hazards. We
9 suggest that you take the time to watch them. <https://www.osha.gov/vtools/construction>



10

11 **SIGNIFICANT CHANGES IN THE RESIDENTIAL FALL PROTECTION** 12 **POLICY**

13 Fall is the major cause of injuries in construction. It is important that we review the requirements for
14 residential construction where, most of the time, supervision is minimal or missing.

15

16 Under the new directive, employers must follow 1926.501(b)(13). This rule states that, "... Each employee
17 engaged in residential construction activities 6 feet (1.8 m) or more above lower levels shall be protected
18 by guardrail systems, safety net system, or personal fall arrest system ..." or, by alternative fall protection
19 measures allowed under 1926.501(b) for particular types of work as outlined below:

20

- 21 • **1926.501(b)(2)(ii):** Controlled access zones and control lines can be used for some leading-edge
22 applications.
- 23 • **1926.501(b)(4)(i) and (ii):** Covers can be used to prevent workers from falling through holes.
- 24 • **1926.501(b)(5):** Positioning devices can be used while working on the face of formwork or reinforcing
25 steel.
- 26 • **1926.501(b)(7)(i) and (ii):** Barricades, fences and covers can be used to prevent workers from falling into
27 excavations.
- 28 • **1926.501(b)(8)(i):** Equipment guards can be used to prevent workers from falling into dangerous
29 equipment.
- 30 • **1926.501(b)(10):** A combination of a warning line system and safety monitoring system can be used for
31 roofing work on low-slope (4:12 or less) roofs. Or, on roofs 50-feet (15.25 m) or less in width, the use of a
32 safety monitoring system without a warning line system is permitted.

33

34 If the employer can demonstrate that it is infeasible or creates a greater hazard to use the required fall
35 protection systems, the employer must instead develop and implement a written site-specific fall
36 protection plan in accordance with 1926.502(k). OSHA does not consider "economic infeasibility" to be
37 a basis for failing to provide conventional fall protection.

38

39 **Note:** There is a presumption that it is feasible and will not create a greater hazard to implement at
40 least one of the fall protection systems listed in 1926.501(b)(13).

41

42 OSHA expects that the fall protection methods listed in 1926.501(b)(13) can be used without
43 significant safety or feasibility problems for the vast majority of residential construction activities.

44

45 OSHA did not define residential construction in 1926.501(b)(13). STD 03-11-002 includes an
46 interpretation for the term "residential construction" for purposes of the standard.

47

Residential Construction Definition

In order to be classified as residential construction, two of the following elements must be met:

- The end-use of the structure being built must be as a home, i.e., a dwelling.
- The structure being built must be constructed using traditional wood frame construction materials and methods.
- The limited use of steel I-beams to help support wood framing does not disqualify a structure from being considered residential construction.
- The use of masonry brick or block in exterior walls are treated as falling within the scope of traditional wood frame construction materials and methods.
- Cold-formed metal studs will be considered within the bounds of traditional wood frame construction materials and methods.

Residential Training Requirements

Under 1926.503, workers exposed to fall hazards must be trained to recognize potential fall hazards and, in the procedures to be followed, to minimize those hazards.

Training must cover the following among other subjects:

- The nature of fall hazards in the work area
- How to erect, maintain, disassemble, and inspect the fall protection systems to be used
- How to use and operate the fall protection systems to be used
- Subpart M requirements
- Supplements 1926.21
- Prepare training certification.
- Documentation of the latest training certification must be maintained.

Retraining for the following:

- Changes in the fall protection systems to be used or to the workplace
- Inadequacies in employee's knowledge or use of fall protection indicates that retraining is necessary

RESIDENTIAL CONVENTIONAL FALL PROTECTION SYSTEMS

The following residential fall systems are outlined below.

- Guardrail systems
- Safety net systems
- Personal fall arrest systems

Residential Guardrail Systems

Brackets for engineered guardrail systems can either be side mounted or deck mounted. Either way, employers should look to the manufacturer instructions or the recommendations of a registered professional engineer for proper installation.

Residential Safety Net Systems

These nets have been positioned to prevent falls to the interior of the building. Employers should consult the manufacturer's instructions and/or a registered professional engineer to ensure proper installation of the net and bracing of the stud walls. Give due consideration to the potential impact load on the net and lateral load on the stud walls in the event of a fall. [1926.402(c)].

Residential Personal Fall Arrest Systems

- **Anchor point:** Anchorages used for attachment of Personal Fall Arrest equipment must be capable of supporting at least 5,000 pounds per employee attached, or must be designed and used as follows:
 - As part of a complete personal fall arrest system which maintains a safety factor of at least two.
 - Under the supervision of a qualified person.
 - Employer should look to the manufacturer's instructions or the recommendations of a registered professional engineer for proper installation. [1926.502(d)15]]
- **Residential PFAS full body harness:** A full body harness distributes the force of the fall over the thighs, pelvis, waist, chest, and shoulders.
 - Body belts have not been allowed as part of an arrest system since January 1998.
 - Residential PFAS Full Body Harness-Connector/Lanyard
 - Snap hooks must be locking type. [1926.502(d)(5)]
 - Never hook two snap hooks together unless designed for that purpose. [1926.502(d)(6)]
- **Residential personal fall restraint system:** Although the standard does not mention personal fall restraint systems, OSHA has previously stated that it accepts a properly utilized fall restraint system in lieu of a personal fall arrest system when the restraint system is rigged in such a way that prevents the worker from being exposed to the fall hazard.
 - Fall restraint can be a body belt or full body harness.
 - Must be tied off so that the worker cannot go past the unprotected side or edge, no matter where the work is on the walking/working surface.
 - Lanyards should be adjustable to take up slack when workers move about.
- Residential fall protection program - Other methods:
 - Employers also have the option of having workers work from scaffolds (in compliance with Subpart L), ladders (in compliance with Subpart X) or aerial lifts (in compliance with 1926.453) instead of complying with 1926.501(b)(13).
 - Now we all know the first principle of mishap prevention is to "eliminate" the hazard whenever possible. If you can't eliminate it, you then have to minimize its effect. We cannot eliminate working at heights in construction, but using ladders, scaffolds and aerial lifts can help employers eliminate some falls from six feet or higher.
 - Working at heights cannot be eliminated, but there are ways to minimize exposure to falls. Assemble as many parts of the building as possible on the ground.
 - **Properly assembled and braced IAW the manufacturer's instruction and the BCSI guide**
 - **Flying pre-assembled structures into place will minimize worker exposure to fall hazards**
 - **Do as many things on the ground as possible**
 - **Some contractors are even pre-positioning portions of the guardrail system on the ground**
 - **Pre-installed fall protection**

Residential Fall Hazards - Prevention

Fall Protection Plan

If an employer can demonstrate that conventional fall protection is infeasible or presents a greater hazard, the employer shall develop and implement a fall protection plan that complies with 1926.502(k). The employer bears the burden of establishing that it is appropriate to implement a fall protection plan for a particular workplace situation. [1926.502(k)]

The fall protection plan must meet all of the following requirements.

- 1 • The plan must be written.
- 2 • The plan must be site-specific.
- 3 • A written fall protection plan developed for repetitive use, e.g., for a particular style or model of home, will
- 4 be considered site-specific with respect to a particular site only if it fully addresses all issues related to fall
- 5 protection at that site. Therefore, a standardized plan will have to be reviewed and revised as necessary,
- 6 on a site-by-site basis.
- 7 • The plan must be prepared by a "qualified person." [1926.502(k)(1)]
- 8 • It must be developed specifically for the site where the residential construction work is being performed.
- 9 [1926.502(k)(1)]
- 10 • It must be maintained up to date. [1926.502(k)(1)]
- 11 • All changes must be approved by a qualified person. [1926.502(k)(2)]
- 12 • It must be maintained on the site. [1926.502(k)(3)]
- 13 • It must be implemented under the supervision of a competent person. [1926.502(k)(4)]
- 14 • The plan must include documentation of reasons why conventional fall protection systems are infeasible
- 15 or create a greater hazard. [1926.502(k)(5)]
- 16 • The plan must include a written discussion of the alternative work practices to be used that will eliminate
- 17 or reduce the possibility of a fall. [1926.502(k)(6)]
- 18 • It must identify each location where conventional fall protection systems cannot be used and designate
- 19 them as controlled access zones (CAZ). [1926.502(k)(7)]
- 20 • The plan must implement a safety monitoring system in conformance with 1926.502(h) where no other
- 21 alternative measure has been implemented. [1926.502(k)(8)]
- 22 • It must identify all workers designated to work in the CAZ. [1926.502(k)(9)]
- 23 • It must be reviewed and updated as appropriate if a fall, or near miss, occurs. [1926.502(k)(10)]
- 24

25 A sample plan can be found in Part 1926 Subpart M Appendix E on the OSHA Web site at:

26 <https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926SubpartMAppE>



27
28

29 **CRYSTALLINE SILICA CONSTRUCTION**

30
31 In 1938, the Department of Labor produced a film titled "Stop Silicosis." Secretary Frances Perkins
32 concluded that silica dust was dangerous, but it can be prevented.

33
34 Silicosis is a form of occupational lung disease caused by inhalation of crystalline silica dust. It is marked
35 by inflammation and scarring in the form of nodular lesions in the upper lobes of the lungs. It is a type of
36 pneumoconiosis.

37
38 The total deaths in the US due to Silicosis during the period between 2005 through 2014 was of 1,167
39 deaths, mortality rate is down from a high of 161 in 2005 to 84 deaths in 2014.

40
41 Those that were exposed didn't know then, and many still don't know now. For additional information,
42 view this video: <https://www.youtube.com/watch?v=HABylzQSuU>



43
44
45
46
47

About 1.85 million workers are currently exposed to respirable crystalline silica in construction
workplaces. Over 640,000 of these workers are estimated to be exposed to silica levels that exceed
OSHA's proposed permissible exposure limit (PEL).

1
2 These exposures occur during common construction operations, such as:

- 3 • Drywall finishing using silica containing
- 4 • Operating vehicle-mounted drilling rigs material
- 5 • Rock Crushing
- 6 • Tuck pointing
- 7 • Using hand operated grinders
- 8 • Using Heavy equipment during earthmoving
- 9 • Using masonry saws
- 10 • Using jackhammers
- 11 • Using rotary hammers or drills

12
13 A proposed rule for new silica construction provisions is expected to save nearly 700 lives and prevent
14 1,600 new cases of silicosis per year once the full effects of the rule are realized.

16 Major Provisions of the New Silica Construction Standard

17
18 The new standard for silica construction that went into effect on September 23, 2017, includes provisions
19 for employers to do the following:

- 20 • Measure the amount of silica that workers are exposed to if it may be at or above an action level of 25
21 $\mu\text{g}/\text{m}^3$ (micrograms of silica per cubic meter of air), averaged over an eight-hour day
- 22 • Protect workers from respirable crystalline silica exposures above the PEL of 50 $\mu\text{g}/\text{m}^3$, averaged over an
23 eight-hour day
- 24 • Limit workers' access to areas where they could be exposed above the PEL
- 25 • Use dust controls to protect workers from silica exposures above the PEL
- 26 • Provide respirators to workers when dust controls cannot limit exposures to the PEL
- 27 • Offer medical exams, including chest X-rays and lung function tests every three years for workers
28 exposed above the PEL for 30 or more days per year
- 29 • Train workers on work operations that result in silica exposure and ways to limit exposure
- 30 • Keep records of workers' silica exposure and medical exams [1926.1153]

32 How to Control the Exposure?

33
34 Employers must use engineering controls and work practices as the primary way to keep exposures at or
35 below the PEL. Engineering controls include wetting down work operations or using local exhaust
36 ventilation (such as vacuums) to keep silica-containing dust out of the air and out of workers' lungs.
37 Another control method that may work well is enclosing an operation or "process isolation." Respirators
38 are only allowed when engineering and work practice controls cannot maintain exposures at or below the
39 PEL.

40
41 For construction, the standard includes Table 1, a list of common construction tasks along with exposure
42 control methods and work practices that work well for those tasks and can be used to comply with the
43 requirements of the standard.

44
45 Please review the Table at the end of this section for the different ways in which to control exposure.

46
47 Regardless of which exposure control method is used, all construction employers covered by the
48 standard are required to do the following:

49
50 Establish and implement a written exposure control plan that identifies tasks that involve exposure and
51 methods used to protect workers, including procedures to restrict access to work areas where high
52 exposures may occur

53
54 Designate a competent person to implement the written exposure control plan

55 Restrict housekeeping practices that expose workers to silica where feasible alternatives are available
56 Offer medical exams, including chest X-rays and lung function tests every three years for workers who
57 are required by the standard to wear a respirator for 30 or more days per year

1 Train workers on work operations that result in silica exposure and ways to limit exposure
 2 Keep records of workers' silica exposure and medical exams

4 OSHA's Crystalline Silica Rule (Construction)

6 **Revised in 2020** – Provides a summary of the requirements of the respirable crystalline silica standard
 7 for construction.

9 OSHA Directives: Inspection Procedures for the Respirable 10 Crystalline Silica Standards

12 **New effective date: 06/25/2020** – The purpose of this Instruction is to provide guidelines and establish
 13 uniform inspection and enforcement procedures for the respirable crystalline silica standards. The two
 14 silica standards, 29 CFR 1910.1053 (General Industry and Maritime) and 29 DFR 1926.1153
 15 (Construction), published in the Federal Register/ Vol. 81 No. 58/ Friday March 25, 2016, became
 16 effective on June 23, 2016.

18 **Significant Changes.** This Instruction outlines the changes in enforcement due to the publication of the
 19 silica standards in the Federal Register, 81 FR at 16285 (Mar. 25, 2016). The silica standards establish a
 20 PEL of 50 µg/m³ and an action level (AL) of 25 µg/m³ for the three major forms of crystalline silica (i.e.,
 21 quartz, cristobalite, and tridymite¹) for the general, maritime, and construction industries.

23 The new PEL represents a change from the preceding PELs, which were based on formulas and were
 24 inconsistent between industries and forms of silica. This change is particularly significant with regard to
 25 the preceding PEL for the construction and shipyard industries, which was based on a particle count
 26 method, expressed in terms of millions of particles per cubic foot (mppcf), and required the use of a
 27 conversion factor to yield results reported in mg/m³.

29 OSHA INSPECTIONS AND PENALTIES SUMMARY

31 Site Specific Targeting Lists

- 33 • National emphasis programs
- 34 • Trenching
- 35 • Workplace violence
- 36 • Silica (concrete sawing)
- 37 • Amputations
- 38 • Combustible dust (sawdust)
- Hexavalent chromium (welding fumes)
- Process safety management (PSM)
- Primary metals (lead)
- Isocyanates (industrial solvents)

39 Inspection Priorities

- 41 • Imminent danger
- 42 • Employee complaint
- 43 • Programmed high hazard inspections
- Catastrophes and fatal accidents
- Referrals
- Follow up inspections

45 Penalties

46 These are as of January 15, 2021.

Type of Violation	Maximum Penalty Amount
Serious	\$13,653
Other	\$13,653
Willful/Repeat	\$136,532
Posting Requirements	\$13,653
Failure to Abate/Day	\$13,653

1 **RECORDKEEPING**

2
3 **OSHA section 1904:** Recording and reporting occupational injuries and illnesses

- 4 • **Form 300:** Log of Work-Related Injuries and Illnesses
- 5 • **Form 300A:** Summary of Work-Related Injuries and Illnesses

6
7 Must have for over ten employees, however it is advisable even if under ten employees.

8 Record injuries and illnesses within seven days, A death must be reported within eight hours

9 Maintain these forms at the jobsite or a central location

10
11 **Direct costs** (the obvious)

- 12 • Medical costs

13 **Indirect costs** (the hidden costs)

- 14
- 15 • Schedule delays
- 16 • Damage to job/ equipment
- 17 • Training replacement workers
- 18 • Cleanup time
- 19 • Osha fines
- 20 • Lost future contracts
- Administrative time and costs
- Unhappy customers
- Legal fees
- Increased insurance costs
- Company image/ reputation
- Indemnity payments

1
2

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Chapter 2

WORKERS' COMPENSATION

WORKERS' COMPENSATION TOPICS

The following topics are covered in this one-hour workers' compensation course:

- Overview - History
- Legislative Changes to F.S. 440
- Compliance Requirements
- Coverage Options
- Exemptions:
- Advantages/Disadvantages
- Assistance from Division of Workers' Compensation (DWC)
- Employers FAQs
- Prohibited Activities

OVERVIEW HISTORY

USA

10th Century B.C. - Kings and Temples and Book of Genesis, first possible indication of a form of workman's compensation

1855 - Georgia, passed the Employer Liability Act in the state legislature.

1855-1907 - 26 other states passed similar acts that simply gave permission to sue the employer if the employee proved a negligent act or omission.

1897 - England repealed the Employer's Liability Act and replaced it with a Working Man's Compensation Act.

1898 - New York, the New York Social Club drafted a bill for the Partial Compensation for Workers. No action was taken by the state legislature. The largest opponent was the labor unions.

1901 - Maryland passed legislation for a Cooperative Accident Insurance Fund.

1905 - The Maryland Act was ruled as unconstitutional by the state Supreme Court.

1908 - The Federal Employer's Liability Act was passed by the U.S. Congress at the urging of President Theodore Roosevelt. This was the first workman's compensation law in the U.S.

1911 - New York, Triangle Shirtwaist Company fire happened. Over 146 workers jumped to their deaths to escape the fire in the ten-story building because the exits were blocked. This resulted in many lawsuits. The entire nation was shocked by the tragedy. New York City immediately adopted the first safety codes.

1911 - Wisconsin became the first state to adopt a true workman's compensation law. It was called the Great Trade Off. Employers provided coverage; employees gave up the right to sue.

1912 - Four more states passed laws.

1913 - Eight more states adopted legislation.

1 **1915** - Alaska and Hawaii passed workman's compensation laws even though they were only territories.

2
3 **1935** - Florida passed the Workman's Compensation Law.

4 5 **Florida**

6
7 **1935** - Florida's Workman's Compensation Law became effective.

8
9 **1978 -1979** - Major changes in the state workers' compensation system were underway in the state
10 legislature, the first major change since 1935. The fixed benefit system was replaced, and the Wage Loss
11 Concept was introduced. Workman's compensation was changed to workers' compensation.

12
13 **1990** - The Division of Fraud and the first Drug Free Workplace were established.

14
15 **Later** - The Bureau of Safety was introduced. Managed health care, employee assistance office, and
16 emphasis on reemployment was introduced.

17
18 **1993** - Wage loss was eliminated. Supplemental benefits, managed care, chiropractic care limits, and the
19 ombudsman office were created.

20
21 **1999** - The special disability trust fund and division of safety were abolished.

22
23 **2003** - The Department of Insurance and Banking merged to become the Department of Financial
24 Services.

25
26 The closing years of the 20th Century brought many changes especially as litigation and medical care
27 continued to be a problem not only in Florida, but throughout the nation as well.

28
29 Since that time, the law has undergone some drastic changes to adapt to all of the other changes that
30 have taken place in our society reflected by the numerous laws enacted by both the US and state
31 legislatures.

32 33 **Legislative Intent**

34
35 To assure the quick and efficient delivery of disability and medical benefits to an injured worker, an
36 efficient and self-executing system must be created that is not an economic or administrative burden.

37
38 To facilitate the worker's return to gainful reemployment at a reasonable cost to the employer.

39
40 The Florida workers' compensation system is based on a mutual renunciation of common-law rights and
41 defenses by employers and employees alike.

42
43 Workers' compensation is a no-fault system meant to protect workers and employers. The idea of
44 workers' compensation was to prevent employees from instituting private lawsuits against employers
45 based on common law. In exchange for providing those benefits, employers generally cannot be sued in
46 the court for causing injuries.

47
48 The Future ...

49 We are just a few years into the 21st Century and have already seen sweeping changes with the
50 abolishment of the Department of Labor and Employment Security, the Division of Safety, and the Special
51 Disability Trust Fund. We saw many departments merging, created, and so on.

52 We saw the attorney-fee award structure, compliance, exemption, etc. introduced and modified to meet
53 the current needs.

54 Yes, there will be changes as we progress, but workers' compensation is still here for the citizens of
55 Florida.

Information Sources

The Florida Statutes: Title XXXI Chapter 440 Workers' Compensation Law
Website: http://leg.state.fl.us/statutes/index.cfm?App_mode=Display_Statute&URL=0400-0499/0440/0440ContentsIndex.html&StatuteYear=2021&Title=%2D%3E2021%2D%3EChapter%20440



Workers' Compensation Insurance
Hotline: 1-800-342-1741
Website: <https://myfloridacfo.com/division/wc/>



Florida Workers' Compensation Joint Underwriting Association (FWCJUA)
Phone: 941-378-7400
Website: <https://www.fwcjua.com/>



Division of Workers' Compensation Employee Assistance
Bureau of Employee Assistance
Phone: 1-800-342-1741
Website: <https://www.myfloridacfo.com/division/wc/employee/eao.htm>



Fraud reporting sources
Division of Insurance Fraud
Phone: 1-800-378-0445 (inside Florida)
Phone: 1-850-413-3261 (outside Florida)
Website: <https://myfloridacfo.com/fraudfreeflorida/default.htm>



To File a Non-Compliance report:
https://apps.fldfs.com/NonCompliance_Referral/mainpage.aspx



Useful Database : <https://dwcdataportal.fldfs.com/POCData.aspx>



LEGISLATIVE CHANGES TO F.S. 440

Changes in 2014

In 2014, changes were made to House Bill (HB) 271, F.S. 440.107, .15, .16, .49.

Businesses had five days to respond to the state's request for records. That was changed to ten days.

Information related to an employer's stop-work order should be made available on the Division's website, be updated daily, and remain on the website for at least five years.

The amount of time investigators could review a company's records for not having enough workers' compensation insurance was changed from three to two years.

The multiplier for penalties levied was increased from 1.5 to 2.

Wherever the percentage of "66 2/3rd %" was changed to "66.67%"

The requirements and deposits were revised in that the Department must calculate the assessment rate for the Special Disability Trust Fund by July 1 of each year.

Changes now allow companies to make a down payment of just \$1,000 on their fine, have payment arrangements for the rest, and arrange for insurance coverage. This was to allow businesses to continue to function while aligning themselves with the law. First time offenders may receive a credit for the initial payment of the estimated annual workers' compensation policy premium, to be applied to the penalty. The \$1,000 penalty will be assessed against the employer even if the calculated penalty after the credit has been applied is less than \$1,000. This is true even if the coverage is through PEO. Failure by the employer to pay the penalty in full or enter into a payment agreement with the Department within 28 days after service of the stop-work order will result in immediate reinstatement of the stop-work order.

Changes in 2016

April 2016 - The Florida Supreme Court overturned a law that had previously limited attorney's fees in workers' compensation court cases. It took the case regarding workers' compensation attorney's fees when a Miami man won an \$822.70 compensation after being injured while working for a door making company. The man's lawyer, who spent 107 hours on the case, sought a fee of nearly \$37,000, but was only awarded \$164. The dramatic difference occurred because at the time Florida only allowed attorneys representing injured workers to be paid 20% of the first \$5,000 in benefits received, and 15% of the next \$5,000.

April 2016 - The Florida Office of Insurance Regulation (OIR) approved a statewide workers' compensation insurance rate increase of 14.5% for businesses. The increase was to take effect on December 1, 2016, to affect 2017.

Currently, temporary disability benefits limit the length of time disability payments can be received for a single injury to two years (104 weeks). In a recent case, the Florida Supreme Court ruled that this two-year cap is unconstitutional and increased it to a five-year cap (270 weeks).

Changes in 2017

New section F.S. 440.1851 Personal identifying information of an injured or deceased employee; public records exemption
Effective: July 1, 2017

Synopsis: Personal identifying information of an injured or deceased employee, contained in records by the Department of Financial Services, is confidential and exempt. Disclosure is authorized under specific circumstances

1 Because of the extensive language in this change, you should access a document titled "2017 Workers'
2 Comp Legislative Changes to F.S. 440" on the DFS / Workers' Comp website.
3 Maximum workers' compensation rate, effective January 1, 2018. \$917.18 for the four calendar quarters
4 ending June 30, 2017. Subsection 440.12(2), Florida Statutes (2017), expressly provides that, for injuries
5 occurring on or after August 1, 1979, the weekly compensation rate shall be equal to 100% of the
6 statewide average weekly wage, adjusted to the nearest dollar, and that the average weekly wage
7 determined by the Department of Economic Opportunity for the four calendar quarters ending each June
8 30 shall be used in determining the maximum weekly compensation rate with respect to injuries occurring
9 in the calendar year immediately following.

10 11 **Changes in 2022**

12 Florida Insurance Commissioner David Altmaier has issued a Final Order granting approval to the
13 National Council on Compensation Insurance (NCCI) for a statewide overall decrease of 4.0% for Florida
14 workers' compensation insurance rates. This applies to both new and renewal workers' compensation
15 insurance policies effective in Florida as of January 1, 2022.

16 17 **Changes in 2023**

18 Florida Insurance Commissioner David Altmaier has issued a Final Order granting approval to the
19 National Council on Compensation Insurance (NCCI) for a statewide overall decrease of 8.4% for Florida
20 workers' compensation insurance rates. This applies to both new and renewal workers' compensation
21 insurance policies effective in Florida as of January 1, 2023

22 23 **Changes in 2024**

24 Florida Insurance Commissioner David Altmaier has issued a Final Order granting approval to the
25 National Council on Compensation Insurance (NCCI) for a statewide overall decrease of 15.1% for
26 Florida workers' compensation insurance rates. This applies to both new and renewal workers'
27 compensation insurance policies effective in Florida as of January 1, 2024

28 29 **COMPLIANCE REQUIREMENTS**

30 31 **Employer Compliance**

32
33 An employer in the construction industry who employs one or more part- or full-time employees must
34 obtain workers' compensation coverage.

35
36 A construction industry contractor, who sub-contracts all or part of their work, must obtain proof of
37 workers' compensation coverage or a certificate of election to be exempt from all sub-contractors prior to
38 work being done. [F.S. 440.10(c)]

39
40 The prime contractor is the statutory employer of anyone who steps onto the job site.

41
42 Know who your statutory employees are:

- 43 • All your sub-contractors
- 44 • All sub-contractor's employees
- 45 • All sub-sub-contractor employees
- 46 • Any person who works on the job site
- 47 • If the sub-contractor is not covered or exempt, for purposes of workers' compensation coverage, the sub-
48 contractor's employees shall become the employees of the contractor.

49
50 Any construction industry employer who operates out-of-state and has one or more part- or full-time
51 employees performing work in Florida is required to obtain a Florida policy through a Florida-licensed
52 insurance company. If the construction industry employer has an out-of-state policy, the insurance
53 company must be licensed in Florida, and Florida must be listed in Section 3A of the policy. [F.S.
54 440.094].

Posting Requirements

As an employer, you are required to post specific notices and/or posters relating to the workers' compensation law. They include the following:

The Broken Arm Poster and the Anti-Fraud Notice should be posted in conspicuous places and identify the name of the insurance company that provides coverage, and where to call to report an accident or injury.

Visit the Agency for Workforce Innovation (Labor Department) webpage for a listing of federal and state poster and notice requirements.
Agency for Workforce Innovation

Recording Requirements

- As an employer, you are required to record all workplace injuries and retain the records for at least 2 1/2 years. (Remember the change for going back has been amended from three years to two years.)
-

Reporting Requirements

Report all fatalities to the Division within 24 hours of discovery

- Phone: 1-800-219-8953
- Fax: 1-850-413-1979
- Email: DFSFatalityreport@myfloridacfo.com

Note: This notification does not replace the first report of injury or illness reporting requirement under F.S. 440.185(2).

Report all injuries to the insurance company within seven days of discovery.

- Form DFS-F2-DWC-1 First Report of Injury or Illness
- Provide a copy of the injury report to the injured worker

Report required wage information to the insurance company within 14 days of learning of an injury that will require the employee to miss work for more than seven days or that results in a permanent impairment.

- Form DFS-F2-DWC-1a Wage Statement

If requesting the employee's authorization for release of Social Security benefit information, give the Form DFS-F2-DWC-14 to the employee, submit the Request for Social Security Disability Benefit Information to the Social Security Administration office nearest to the employee's address, and send a copy of the completed form to the Division within 14 days of the request.

- Form DFS-F2-DWC-14 Request for Social Security Disability Benefit Information

Penalties for Filing of a Claim Late

If the First Report of Injury (DFS-F2-DWC-1) is filed late with the Division, due to the late reporting of the accident by the employer to the insurance company, the employer may be penalized for the late filing, according to the following schedule of untimely filing:

- \$100 for 1 – 7 days late
- \$200 for 8 – 14 days late
- \$300 for 15 – 21 days late
- \$400 for 22 – 28 days late
- \$500 for over 28 days late

If an installment of compensation payment is not paid when it becomes due, an interest rate of 12 - 20% will be charged.

When Employee Returns to Work

When an employee, who has been on medical leave due to a workers' compensation occurrence, is released to return to work, as the employer, you should do the following:

- Obtain the list of restrictions from the doctor (if any)
- Meet with the employee and discuss the available restricted work that they can do
- Discuss the following with the employee:
 - Starting date and time
 - Their wage based on new job duties

- Report the following information to the insurance adjuster:
 - Restricted work
 - Any difference in pay due to new duties
 - Wage information to determine if temporary partial benefits are due

The entire guide regarding the workers' compensation system is available on this website:
<https://myfloridacfo.com/division/wc/pdf/WC-System-Guide.pdf>



Employer Job Classification and Payroll

Since workers' compensation premiums are based on the information provided by the employer, it is important that they report accurate information to the insurance company, such as what type of work is being performed (e.g., interior trim carpentry, roofing, restaurant, and clerical) and estimated payroll for each job classification code.

If any changes occur in the job duties, services performed, or the employer's payroll amount during the policy term, the employer must notify its insurance company.

COVERAGE OPTIONS

Get insurance

Contact a Florida licensed insurance agent to obtain a workers' compensation policy.

Florida Association of Insurance Agents

- Website: <https://www.faia.com/>



Professional Insurance Agents of Florida

- Website: <https://www.piafl.org/>



Latin American Association of Insurance Agents

- Website: <https://laaia.com/>



1 If you, as an employer, are unable to obtain coverage through the private insurance market, contact the
 2 Florida Workers' Compensation Joint Underwriting Association (FWCJUA).

- 3 • Phone: 941-378-7400
- 4 • Website: <https://www.fwcjua.com/>



10 Employee Leasing Option

11 You, as an employer, may also consider leasing employees from a professional employer organization or
 12 (PEO). In this circumstance, the PEO becomes the employer and provides workers' compensation
 13 coverage to each employee who is paid by the leasing PEO. This is a civil contract.

14 If you enter into an employee leasing agreement with a licensed employee leasing company, the
 15 agreement should include workers' compensation coverage only for employees listed with the employee
 16 leasing company. You would be responsible for workers' compensation coverage for all non-leased
 17 employees.

18 The payroll for all leased employees must be paid through the leasing company. Any changes in job
 19 duties or status of an employee must be reported to the leasing company promptly.

24 Advantages

- 25 • Your rates will not be affected because you are new in business or have claims.
- 26 • No headaches of quarterly reporting and worrying about premiums.

28 Disadvantages

29 Cannot hire direct laborers or workers for a short period of time.

30 Have to be very particular in sending the details of every worker and the job classifications.

31 Difficult to change the classification of the workers working in different classifications.

32 Complex situation and liability if one of your sub-contractor's workers is not covered under the sub-
 33 contractor's insurance.

35 Individual Self-Insurers

36 An employer may become individually self-insured and secure the payment of workers' compensation by
 37 providing proof of financial strength necessary to ensure timely payments of current and future claims.

38 Authorization and regulation of individual self-insurers is through the Division. [F.S. 440.38]

42 Commercial Self-Insurance Funds

43 A group of persons may form a commercial self-insurance fund for purposes of pooling and spreading
 44 liabilities for any commercial and/or casualty insurance.

45 Authorization and regulation of commercial self-insurance funds is through the Office of Insurance
 46 Regulation. [F.S. 624.462]

50 WORKERS' COMPENSATION EXEMPTION

51 An individual who meets the eligibility requirements to obtain an exemption pursuant to F.S. 440.05 may
 52 elect to be exempt. [F.S. 440.05]

1 Sole proprietors and individuals cannot be exempted.

2
3 The exempted individual may not receive workers' compensation benefits when they sustain a work-
4 related injury.

5
6 The applicant must be listed as an officer of the corporation in the records of the Florida Department of
7 State, Division of Corporations. The corporation must be registered with the Division of Corporations in
8 Florida.

9
10 Certificates of election to be exempt shall apply only to the corporate officer named on the notice of
11 election to be exempt and apply only within the scope of the business or trade listed on the notice of
12 election to be exempt.

13
14 The applicant must own at least 10% of the corporation.

15
16 A \$50 application fee is required.

17
18 No more than three officers of a corporation (including an LLC) or of any group of affiliated corporations
19 may elect to be exempt from this chapter. [F.S. 440.02(15)(b)(2)]

20
21 A construction industry certificate of exemption issued by the Division is valid for two years after the
22 effective date stated thereon.

23
24 Exemptions are effective on the date they are issued by the Division.

25 26 **Obtaining the Exemption**

27
28 Obtaining the workers' compensation exemption is an online process.

29
30 Access the Division of Workers' Compensation's Website:
31 myfloridacfo.com/division/wc/Employer/Exemptions/default.htm
32 Contact customer service at 1-800-742-2214 for any further information.

33
34 An exemption is subject to revocation if the person named on the certificate does not meet eligibility
35 requirements for an exemption. One can voluntarily revoke an exemption by filling out Form DWC 250-R
36 Form DWC 250-R Notice of Revocation to be Exempt

37 38 **Exemption Advantages/Disadvantages**

39
40 It is important to know the advantages and disadvantages of a workers' compensation exemption,
41 especially when you see the following statistics. There has been a rise, which is a good indication of
42 construction growth. The rise in non-construction exemptions is due to the statutory change that defines
43 non-construction limited liability company members as "corporate officers," that allows them to get the
44 exemption.

45
46 We all know the biggest advantage of the exemption is the monetary benefit. It is important to know the
47 disadvantages of the exemption.

48
49 So, only the disadvantages are listed here:

- 50 • If you are injured, you are on your own.
 - 51 • If you hired a sub-contractor with the exemption and they hired a day laborer on a cash-payment basis
52 who gets hurt, you are responsible.
 - 53 • If anyone driving a company vehicle has an accident, the vehicle is covered under workers'
54 compensation, not the company's automobile insurance.
 - 55 • Think of a scenario where your sub-contractor submits the proof of insurance for insurance that is through
56 the PEO, but the worker who is injured was not reported to the PEO.
- 57

ASSISTANCE FROM DIVISION OF WORKERS' COMPENSATION (DWC)

Compliance and Coverage Assistance

Division of Workers' Compensation Portal provides you with the ability to look up Proof of Coverage information, submit referrals for non-compliance, and to interact with Construction Policy Tracking database. All of the following data can be tracked from the following website.

Website: <https://dwcdataportal.fldfs.com/POCData.aspx>



WC Construction Policy Tracking Database

The construction policy-tracking database provides information to contractors regarding the coverage status of the contactors they use. This easy-to-use system will send contractors automatic electronic notification of any changes to their sub-contractor's coverage status. The only action required of the contractor is to register and list the sub-contractors for whom they would like to receive coverage notification.

The Proof of Coverage Database (Compliance)

This allows anyone to quickly verify the proof of coverage.

Compliance Stop-Work Order Database

The Compliance Stop-Work Order Database lists employers who have been issued a stop-work order due to non-compliance with the workers' compensation law.

WORKERS' COMPENSATION EMPLOYER'S FAQs

Here are the most common frequently asked questions (FAQs) from employers regarding the workers' compensation system.

Q: Who can I contact with questions or concerns regarding risk classification codes and premium amounts?

A: Call your insurance carrier or service representative. If you have a dispute regarding the risk classification codes, contact the National Council on Compensation Insurance (NCCI) at (800) 622-4123

Q: Does the injured worker pay any part of my workers' compensation insurance premium?

A: The law is very specific on this point. It is the employer's responsibility to pay the entire premium for workers' compensation insurance coverage.

Q: What kinds of employee injuries are covered?

A: The law covers all accidental injuries and occupational diseases arising out of and in the course and scope of employment. This includes diseases or infections resulting from such injuries. The law also covers death resulting from such injuries within specified periods of time. Even if you do not think an injury is covered, you must still file the First Report of Injury or Illness (DWC-1) with your insurance carrier within seven days of your first knowledge of the accident/injury for determination of responsibility.

1
2 **Q:** What injuries are not covered?

3 **A:** The law does not provide compensation for the following conditions:

- 4 • A mental or nervous injury due to stress, fright, or excitement.
- 5 • A work-related condition that causes an employee to be afraid or dislike for another individual because of
- 6 the individual's race, color, religion, sex, national origin, age, or handicap.
- 7 • "Pain and suffering" have never been compensable in Florida, nor is it compensable in any other state.
- 8 • The employer may not sue an injured worker for causing a catastrophe nor can the injured worker sue the
- 9 employer for their injury. This trade-off makes it possible for injured workers to receive immediate medical
- 10 care, at no cost to the injured worker, without any consideration for who was at fault, the employer or the
- 11 employee. In civil law, negligence must be established through litigation before any compensation is
- 12 awarded. [F.S. 440.02(1)]

13
14 **Q:** Can an employer be liable for double compensation?

15 **A:** An employer can be liable for double compensation if a minor child is injured while employed in

16 violation of any of the conditions of the child labor laws of Florida. The employer alone, not the

17 insurance carrier, is liable for up to double the normal compensation as provided by the workers'

18 compensation law. To receive further information regarding the Child Labor Law, call the Child Labor

19 Office at (800) 226-2536.

20
21 **Q:** As a small business owner, can I be sued by an injured worker if I provide all the necessary care, light

22 duty work, and offer to retrain the employee?

23 **A:** Under the provisions of F.S. 440, an injured worker has two years from the date of the accident to file

24 a petition for benefits with the Division of Administrative Hearings. If an employer provides benefits and

25 return to work options, that should be sufficient to meet the ultimate goal of returning an injured worker

26 to gainful employment.

27
28 However, an employer/carrier's definition of "necessary care" and that of an injured worker may differ.

29 When that happens, the injured worker has no remedy except to file a petition for benefits and have a

30 judge of compensation claims determine whether the benefits that are being provided are sufficient, or if

31 additional benefits not being provided are required by Florida law. If the employer is providing benefits, all

32 expenditures must be reported to the employer's workers' compensation insurance carrier for statistical

33 purposes.

34
35 **Q:** What in the system would prevent an injured worker, who wanted to leave their employer anyway, from

36 claiming to be hurt, waiting out the treatment, still claiming to be hurt and then trying to settle?

37 **A:** By law, pain or other subjective complaints alone, in the absence of objective relevant medical

38 findings, are not compensable. However, sometimes these types of claims do occur, and they are

39 sometimes settled by insurance carriers for a nominal amount of money to rid the employer/carrier of a

40 nuisance case.

41
42 **Q:** Is compensation payable if an employee refuses to use a safety appliance like a hard hat, safety

43 goggles or observe a safety rule?

44 **A:** Compensation will still be paid, but indemnity benefits (partial wage replacement) may be reduced by

45 25% if the employee knew about the safety rule prior to the accident and failed to observe the rule, or

46 if the employee knowingly chooses not to use a safety appliance which the employer has directed him

47 to use. [F.S. 440.09(5)]

48
49 **Q:** Will becoming a drug-free workplace save me money on my workers' compensation insurance

50 premium?

51 **A:** If you implement a drug-free workplace program in accordance with the criteria set forth in F.S.

52 440.102, you may be eligible for a 5% premium credit on your workers' compensation insurance

53 premium. In addition to the premium credit, having a workers' compensation drug-free workplace

54 program may make your workplace safer, resulting in fewer accidents, which may reduce your

55 workers' compensation costs.

56
57 **Q:** Under the workers' compensation drug-free workplace program, can I conduct random drug testing of

58 my employees?

59 **A:** In addition to the situations in which testing is mandatory, the law does not prohibit a private employer

1 from conducting random testing or any other lawful testing of employees. A public employer may
2 institute random testing of employees in "safety sensitive" or "special risk" occupations.
3

4 **PROHIBITED ACTIVITIES**

5 **F.S. 440.105(2) Prohibited Activities; Reports; Penalties; Limitations**

6
7
8 Whoever violates any provision of this subsection commits a misdemeanor of the first degree, punishable
9 as provided in F.S. 775.082 or F.S. 775.083.

10
11 It is unlawful for any EMPLOYER to knowingly:

- 12 • Coerce or attempt to coerce, as a precondition to employment or otherwise, an employee to obtain a
13 certificate of election of exemption pursuant to s. 440.05, F.S.
- 14 • Discharge or refuse to hire an employee or job applicant because the employee or applicant has filed a
15 claim for benefits.
- 16 • Discharge, discipline, or take any other adverse personnel action against any employee for disclosing
17 information to the division or any law enforcement agency relating to any violation or suspected violation
18 of any of the provisions of Chapter 440.
- 19 • Fail to update applications for coverage as required by s. 440.381(1), F.S. within 7 days after the
20 reporting date for any change in the required information, or to post notice of coverage pursuant to s.
21 440.40, F.S.
- 22 • Participate in the creation of the employment relationship in which the employee has used any false,
23 fraudulent, or misleading oral or written statement as evidence of identity.
24

25 It is unlawful for any PERSON to knowingly:

- 26 • Work without Workers' Compensation coverage, if required.
- 27 • Submit an altered or fraudulent certificate as proof of coverage for Workers' Compensation insurance or a
28 false exemption certificate
- 29 • Misclassify employees to lower premiums or treat employees as sub-contractors when they are not in
30 order to hide or conceal payroll.
- 31 • Violate a stop-work order issued by the department.
32

33 **F.S. 440.105 Prohibited Activities; Reports; Penalties; Limitations - Insurance Fraud**

34
35 Whoever violates any provision of this subsection commits insurance fraud, punishable as provide in
36 paragraph (f).
37

38 It is unlawful for any EMPLOYER to knowingly:

- 39 • Present or cause to be presented any false, fraudulent, or misleading oral or written statement to any
40 person as evidence of compliance with s. 440.38.
- 41 • Make a deduction from the pay of any employee entitled to the benefits of this chapter for the purpose of
42 requiring the employee to pay any portion of premium paid by the employer to a carrier or to contribute to
43 a benefit fund or department maintained by such employer for the purpose of providing compensation or
44 medical services and supplies as required by this chapter.
- 45 • Fail to secure workers' compensation insurance coverage.
46

47 It is unlawful for any PERSON to knowingly:

- 48 • Make, or cause to be made, any false, fraudulent, or misleading oral or written statement for the purpose
49 of obtaining or denying any benefit or payment under this chapter.
- 50 • To present or cause to be presented any written or oral statement as part of, or in support of, a claim for
51 payment or other benefit pursuant to any provision of this chapter, knowing that such statement contains
52 any false, incomplete, or misleading information concerning any fact or thing material to such claim.
- 53 • To assist, conspire with, or urge any person to engage in activity prohibited by this section.
54

55 If the monetary value of any violation of this subsection:

- 56 • Is less than \$20,000, the offender commits a felony of the third degree.
- 57 • Is \$20,000 or more, but less than \$100,000, the offender commits a felony of the second degree.

- 1 • Is \$100,000 or more, the offender commits a felony of the first degree.

2

3 A reward of up to \$25,000 may be offered to citizens for information leading to an arrest and conviction in
4 complex fraud schemes.

5

6 **FINAL THOUGHT**

7

8 The goal of this course is to help you become more familiar with the workers' compensation law and
9 some of its recent changes. We hope this was accomplished!

10

11 Keep in mind that, as with all topics of a specialty nature, you should consult licensed professionals
12 before making any decisions or purchasing any products. We hope you are in better position to know
13 what your options are.

14

1

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Chapter 3

SUCCESSFUL BUSINESS PRACTICES

INTRODUCTION

Providing excellent services or making superior quality services are essential ingredients in a successful business. However, these alone do not guarantee success; they must be coupled with good business practices. Your company and you, as its leader, take pride in the workmanship delivered to your clients on a daily basis.

Just knowing your trade skills is not sufficient to guarantee success in any business enterprise. There are other things that need to be addressed by an entrepreneur, if you are part owner, supervisor, or if you are part of the management.

Statistics reflect that the USA is the country where the largest quantity of new enterprises is formed every year, and it is also the same place that records the most quantity of bankruptcy filings in the same period of time. Usually, it is not because the individual running the company does not know their trade, but because they do not know how to manage it.

ESSENTIAL GOOD BUSINESS PRACTICES

The following ten essential good business practices should be the foundations of your craft or construction business:

- Self-assessment
- Your potential as an entrepreneur
- Planning
- Know the regulations affecting your industry
- Surround yourself with a good team
- Assess your products/services
- Know your market and competitors
- Costing and pricing
- Risk management
- Keep good records

No two businesses are alike, but this is just a pattern that you may follow, and even though it does not guarantee the road to success, it may point you in different directions that may help you solve some of your business problems.

SELF-ASSESSMENT

So, you have determined you want to be your own boss. Commendable, but before you take that important step, there are several things you need to address.

Do I have What it Takes?

As previously noted, knowing your trade does not necessarily lead to the road to success.

Am I ready to take on the additional hours and worries that being an entrepreneur carries?

As a supervisor working for someone else, you know that you will have a paycheck at the end of the week, but you do not have to worry about running the business, sales, collections, payments to employees, and suppliers.

1 But, as an entrepreneur, you will find that a great deal of your time will be spent in organizing and
2 directing the activities of the business and your employees. Unless you run your business organization as
3 well as you perform your field operations, you will find that everything is useless.

4
5 **Personal audit:** Undertake a personal audit or self-assessment to identify your strengths and
6 weaknesses.

7
8 **Recognize your strengths and weaknesses:** Work to recognize your strengths and address your
9 weaknesses. There is a great deal of help and assistance out there if you look.

10
11 **Personal objectives:** Recognize your reasons for becoming self-employed and be very clear about your
12 personal objectives and goals.

13
14 The duties of an effective manager include:

- 15 • Planning
 - 16 • Organizing
 - 17 • Directing
 - 18 • Controlling
 - 19 • Standardizing
 - 20 • Assigning
 - 21 • Communicating
- 22

23 YOUR POTENTIAL AS AN ENTREPRENEUR

24 What is Entrepreneurship?

25
26
27 Entrepreneurship is the act of creating a business or businesses while building and scaling it to generate
28 a profit. However, as a basic entrepreneurship definition, it's a bit limiting. The more modern
29 entrepreneurship definition is also about transforming the world by solving big problems. Like initiating
30 social change, creating an innovative product, or presenting a new life-changing solution.

31
32 What the entrepreneurship definition doesn't tell you is that it is what people do to take their career and
33 dreams into their own hands and lead it in the direction of their own choice. It's about building a life on
34 your own terms. No bosses. No restricting schedules. And no one holding you back.

35
36 Entrepreneurs can take the first step in making the world a better place, for everyone in it.

37 What is the Meaning of Entrepreneurship?

38
39
40 The meaning of entrepreneurship involves an entrepreneur who takes action to make a change in the
41 world. Whether startup entrepreneurs solve a problem that many struggles with each day, bring people
42 together in a way no one has before, or build something revolutionary that advances society, they all have
43 one thing in common - action.

44
45 It's not some idea that's stuck in your head. Entrepreneurs take the idea and execute it. Entrepreneurship
46 is about the execution of ideas.

47 Why Be an Entrepreneur?

48
49 Describe the rewards of going into business for yourself.

50
51 Describe the risks of going into business for yourself.

52
53
54 When you are considering owning your own business, an important first step is to analyze the advantages
55 and disadvantages of entrepreneurship.

Rewards and Risks of Entrepreneurship

Rewards and Risks of Entrepreneurship	
Rewards	Risks
Being creative	Being fully responsible
Being recognized in the community	Having an uncertain income
Being your own boss	Risking your investment
Doing something you enjoy	Working long hours
Having job security	
Making more money	
Setting your own schedule	

Characteristics and Skills of Successful of Entrepreneurs

Characteristics and Skills of Entrepreneurs	
Successful Characteristics	Essential Skills
Action-oriented	Adaptability
Creative	Basic business
Enthusiastic	Communication
Goal-oriented	Decision making
Independent	Knowledge of math
Inquisitive	Organizing and planning
Persistent	Problem solving
Responsible	Social
Restless	Teamwork
Risk-taking	Technology and computers
Self-confident	
Self-demanding	

The Reason People Become Entrepreneurs

The Entrepreneurship Appeal

With over 400 million entrepreneurs, entrepreneurship has an international appeal. Every entrepreneur has their own reason that drove them to dive into being their own boss. Whether entrepreneurs need more freedom or to make the world a better place, they all take control of their life by living life on their own terms.

Now that we have discussed the advantages, disadvantages, the personal traits of an entrepreneur, and you feel that, if you are one, you have made the right decision, it is commendable.

PLANNING

Planning is anticipating and taking advantage of business opportunities and problems. Planning requires a great deal of time that often seems to take away from pressing day-to-day problems.

Suppose your boss asks you to organize a blood donor campaign. Is the objective to get as much donated as possible? Or is it to raise the company profile? Deciding the real objectives will help you plan the project.

Once you have defined the scope and objectives of the project, get the stakeholders to review and agree to them.

1
2 The key to a successful business is planning your activities and projects from day one. Planning is about
3 making choices that should only be made based on good information. It requires the owner/manager to
4 decide which people, resources, and budget are required to complete a project.

5
6 The steps in preparing a business plan are as follows:

- 7 • Define the scope and objectives
- 8 • Define the deliverable
- 9 • Determine a vision for the company
- 10 • Determine a vision for the leadership

11 12 **Define the Scope and Objectives**

13
14 First, understand the company objectives. Deciding the real objectives will help you plan your activities.
15 Scope defines the boundary of the company objectives. Deciding what is in or out of the scope will
16 determine the amount of work that needs to be performed.

17
18 Understand who the stakeholders are, what they expect to be delivered, and enlist their support.

19 20 **Define the Deliverable**

21
22 You must define the deliverable, in other words, what will be delivered by the company over time.

23
24 Decide what tangible things will be delivered and document them in enough detail to enable someone
25 else to produce them correctly and effectively.

26
27 Key stakeholders must review the definition of deliverable and must agree they accurately reflect what
28 must be delivered.

29 30 **Determine a Vision for the Company**

31
32 No mystery here. The number one priority is the need to have a vision for the company and its future. It's
33 critical that you, as the owner, have some clarity about what sort of construction company you want your
34 company to be and where you see your position in the market.

35 Where do you see yourself and your company in the next year, five years, and ten years from now?

- 36 • What are your expansion goals?
- 37 • What will your personal and company positions be in the local market in the future?
- 38 • What are your needs, now, and in the future in regard to capital and labor sources?

39
40 All of these and similar questions should be addressed in your business plan. If you are to be the captain
41 of your ship, it is wise to plan your course before you leave the homeport.

42 43 **Determine a Vision for Leadership**

44
45 A close runner-up as a priority to the vision for the company is the vision for leadership that contractors
46 must have. As a contractor grows in size, they realize that they cannot be all things to all people or be
47 everywhere they need to be at the same time. Therefore, having the best field leaders leading the daily
48 charge in the field is crucial for a successful contractor.

49 50 **Create a Sense of Urgency ... Not Emergency**

51
52 Emergency-based contractors wear out and lose employees. Having a sense of urgency in your company
53 actually inspires and energizes workers.

54
55 Creating a sense of urgency begins with you, the owner, communicating what your expectations are,
56 sharing the highs and lows of the company with your workers, and informing workers as to what your
57 customers want and expect from their performance.

1 Work on your leadership skills and make sure you understand the difference between leadership and
2 management. Good employees want to be led, not supervised.
3

4 **KNOW THE REGULATIONS AFFECTING YOUR INDUSTRY**

5
6 F.S. 489 provides for the licensure and regulation of all types of contractors in Florida. It is divided into
7 three parts:

- 8 • Construction Contracting
- 9 • Electrical and Alarm System Contracting
- 10 • Septic Tank Contracting.

11
12 Another statute, F.S. 713, is the Florida Lien Law.

13
14 We will start the discussion of this topic of regulations affecting our industry by mentioning the necessary
15 disclosures affecting contracts. Both of these statutes contain provisions that mandate certain disclosures
16 or statements that must be included in construction contracts.

17
18 Some of the regulations governing our industry impact our contracts.

19 **Contracts that Comply with State Law**

20
21
22 You should have a copy of F.S. 489 on hand at your place of business. You can view a copy by visiting:
23 *leg.state.fl.us/statutes/*

24
25 The Florida Statutes contain provisions that mandate certain disclosures or statements that **MUST** be
26 included in construction contracts. Some of these provisions have dollar amount thresholds. Some
27 provisions must be included in each and every contract. Are there any that you are not familiar with?

28
29 The goal here is to orient your contracts so that they are consistent with state law. It includes operating
30 within the scope of your license and providing reasonable processes for dispute resolution. This includes
31 proper disclosures, such as the recovery fund disclosure in F.S. 489 and the lien law disclosure in F.S.
32 713. It also includes compliance with requirements outside the license law, such as the construction
33 defects law in F.S. 558.

34
35 Let us look more closely at each of these objectives

36 **Basic Elements of a Contract**

37
38
39 Writing contracts with the public that comply with state law should include the following elements:

- 40 • Scope of work
- 41 • Time frame
- 42 • Price
- 43 • Process for changes to the work
- 44 • Process for close out and final completion
- 45 • Successful business practices

46
47 These are the basic elements in a construction contract. Contracts are one of the most important
48 documents in a business. A poorly written contract between contractor and owner could be detrimental to
49 the business if these terms and others mandated by the statutes are not included in this document. The
50 absence of some of these disclosures may render your contract null in a court of law. The same attention
51 should be given to subcontracts between your company and a prime contractor.

52 **Duty of Contractor to Notify Residential Property Owner of Recovery Fund [F.S. 489.1425]**

53
54
55
56 Each agreement or contract for repair, restoration, improvement, or construction to residential real
57 property must contain a written statement explaining the consumer's right under the recovery fund, except

1 where the value of all labor and materials does not exceed \$2,500. The written statement must be
2 substantially in the following form:

4 **FLORIDA HOMEOWNER'S CONSTRUCTION RECOVERY FUND:**

5
6 PAYMENT UP TO A LIMITED AMOUNT MAY BE AVAILABLE FROM THE FLORIDA HOMEOWNERS'
7 CONSTRUCTION RECOVERY FUND IF YOU LOSE MONEY ON A PROJECT PERFORMED UNDER
8 CONTRACT, WHERE THE LOSS RESULTS FROM SPECIFIED VIOLATIONS OF FLORIDA LAW BY A
9 LICENSED CONTRACTOR. FOR INFORMATION ABOUT THE RECOVERY FUND AND FILING CLAIM,
10 CONTACT THE FLORIDA CONSTRUCTION INDUSTRY LICENSING BOARD AT THE FOLLOWING
11 TELEPHONE NUMBER AND ADDRESS:

13 **Mandatory Provisions for Direct Contracts [F.S. 713.015]**

14
15 Any direct contract greater than \$2,500 between an owner and a contractor, related to improvements to
16 real property consisting of single or multiple family dwellings up to and including four units, must contain
17 the following notice provision printed in no less than 12-point, capitalized, boldfaced type on the front
18 page of the contract or on a separate page, signed by the owner and dated:

19
20 ACCORDING TO FLORIDA'S CONSTRUCTION LIEN LAW (F.S. 713.001-713.37), THOSE WHO WORK
21 ON YOUR PROPERTY OR PROVIDE MATERIALS AND SERVICES AND ARE NOT PAID IN FULL
22 HAVE A RIGHT TO ENFORCE THEIR CLAIM FOR PAYMENT AGAINST YOUR PROPERTY, THIS
23 CLAIM IS KNOWN AS A CONSTRUCTION LIEN. IF YOUR CONTRACTOR OR A SUBCONTRACTOR
24 FAILS TO PAY SUBCONTRACTORS, SUB-SUBCONTRACTORS, OR MATERIAL SUPPLIERS, THOSE
25 PEOPLE WHO ARE OWED MONEY MAY LOOK TO YOUR PROPERTY FOR PAYMENT, EVEN IF
26 YOU HAVE ALREADY PAID YOUR CONTRACTOR IN FULL. IF YOU FAIL TO PAY YOUR
27 CONTRACTOR, YOUR CONTRACTOR MAY ALSO HAVE A LIEN ON YOUR PROPERTY

28
29 THIS MEANS IF A LIEN IS FILED YOUR PROPERTY COULD BE SOLD AGAINST YOUR WILL TO PAY
30 FOR LABOR, MATERIALS, OR OTHER SERVICES THAT YOUR CONTRACTOR OR A
31 SUBCONTRACTOR MAY HAVE FAILED TO PAY. TO PROTECT YOURSELF, YOU SHOULD
32 STIPULATE IN THIS CONTRACT THAT BEFORE ANY PAYMENT IS MADE, YOUR CONTRACTOR IS
33 REQUIRED TO PROVIDE YOU WITH A WRITTEN RELEASE OF LIEN FROM ANY PERSON OR
34 COMPANY THAT HAS PROVIDED TO YOU A "NOTICE TO OWNER." FLORIDA'S CONSTRUCTION
35 LIEN LAW IS COMPLEX, AND IT IS RECOMMENDED THAT YOU CONSULT AN ATTORNEY.

36
37 Since the goal of F.S. 489 is to protect the public, actions that clarify relationships, actions that comply
38 with licensing requirements, and actions that advance safety and wellbeing would all be regulatory
39 measures.

40
41 As a contractor, you must be aware of the following statutes in order to stay in compliance with the law.

43 **Disciplinary Proceedings [F.S. 489.129]**

44
45 Committing mismanagement or misconduct in the practice of contracting that causes financial harm to a
46 customer. Financial mismanagement or misconduct occurs when:

47
48 Valid liens have been recorded against the property of a contractor's customer for supplies or services
49 ordered by the contract for the customer's job; the contractor has received funds from the customer to
50 pay for the supplies or services; and the contractor has not had the liens removed from the property, by
51 payment or by bond, within 75 days after the date of such liens;

52
53 The contractor has abandoned a customer's job and the percentage of completion is less than the
54 percentage of the total contract price paid to the contractor as of the time of abandonment, unless the
55 contractor is entitled to retain such funds under the terms of the contract or refunds the excess funds
56 within 30 days after the date the job is abandoned; or

57
58 The contractor's job has been completed, and it is shown that the customer has had to pay more for the

1 contracted job than the original contract price, as adjusted for subsequent change orders, unless such
2 increase in cost was the result of circumstances beyond the control of the contractor, was the result of
3 circumstances caused by the customer, or was otherwise permitted by the terms of the contract between
4 the contractor and the customer.
5

6 **Monies Received by Contractors [F.S. 489.126]**

7
8 A contractor who receives, as initial payment, money totaling more than 10% of the contract price for
9 repair, restoration, improvement, or construction to residential real property must:

- 10 • Apply for permits within 30 days
- 11 • Start the work within 90 days of receiving the permits, and
- 12 • Continue through timely completion

13 **Notice of Commencement [F.S. 713]**

14 The wording for the Notice of Commencement has been amended:

15
16
17 **“Warning to owner:** any payments made by the owner after the expiration of the Notice of
18 Commencement are considered improper payments under Chapter 713...”

19
20 The preparation, filing, and posting of the Notice of Commencement are the owner’s responsibility or the
21 lending institution if there is a construction loan in the project, *it never is the contractor’s responsibility.*

22
23 The document must be posted at the jobsite, and that is also the *owner’s responsibility.*

24
25 On the permit card, the “Warning to Owner” print size has been reduced to 14-point, capitalized,
26 boldfaced type.

27
28 The sentence, “A Notice of Commencement must be recorded and posted on the job site before the first
29 inspection.” has been added to the Warning to Owner language.

30
31 If the project has a value of \$2,500 or more, the NOC must be posted at the jobsite prior to calling for the
32 first building inspection.
33

34 **SURROUND YOURSELF WITH A GOOD TEAM**

35
36 You cannot do it all; no matter how much you try. Find the right people with the right skills and
37 personalities to be part of your team.

38
39 You are not the Energizer Bunny! Make sure you have a plan for recharging your batteries and keeping
40 up the motivation, you will need to make your dream business happen.

41
42 When you become self-employed, you become responsible for designing, producing, selling, customer
43 care, financing, collecting bad debts, bookkeeping, etc. But it is not essential that you undertake all of
44 these tasks unaided. It may be more cost-effective to allow professional and experienced people in
45 particular sectors to assume some ‘chores’ with which you are not comfortable and thus allow you the
46 time to undertake those with which you are, paying for their work from the increased turnover you are now
47 capable of earning.

48
49 Good practices to develop a good team of workers for your company include:

- 50 • Provide on-going education and training for workers
- 51 • Cross-train workers to build bench strength
- 52 • Communicate the direction and goals daily
- 53 • Create a work culture that enjoys and laughs
- 54 • Institute a meaningful incentive plan

Provide On-Going Education and Training for Workers

“On-going” suggests a continuous effort to train whenever they can.

For the seasonal contractor, this might mean bringing their workers in a few days to a few weeks earlier than opening day and taking them through a series of training topics.

Every contractor should be ready for those rainy days when grabbing an extra few hours on some education would benefit the crews.

You are taking this course not only to comply with the continuing education requirements of your license, but also to learn about new changes in the statutes, building codes, etc. affecting your license. Your workers deserve the same consideration. On-going training and education on safety, new methods of doing things, seminars conducted by speakers who will discuss these topics, will be most beneficial not only to your employees but also to your company.

Cross-Train to Build Bench Strength

The greater diversity that your workers can handle, the easier time of scheduling you will experience. Having more than one worker who can competently handle a paver, sealcoat machine, roller, or backhoe, for example, the better chance your productivity will stay strong and profitable. This certainly is one of signs of a successful construction contractor. Having workers who are able to step up and do additional tasks is one of the necessities of a well-run organization.

We cannot be at the mercy of one of our essential employees getting sick or quitting, and now we have become an emergency contractor again either having to shut down operations or hiring someone in a hurry at exorbitant costs to the organization.

Communicate the Direction and Goals Daily

There is simply no excuse for not holding daily meetings with your crews.

Call them crew huddles or tailgate meetings but do them - daily! And set goals for the project, the day, or the week -- whatever makes the most sense for your company and workers -- but setting targets always comes back to inspire and refocus your workers.

This is another practice that will reap benefits for your organization, it has been proven numerous times that employees seek a sense of belonging and participating in the company decisions more than an increase in pay.

Create a Work Culture that Enjoys and Laughs

The most successful contractors, of any size, are all construction companies that enjoy people, celebrate successes, and laugh a lot. The people at these organizations, from the owner to the lowest-paid laborer, are just plain fun to hang out with. You can see the good-natured ribbing the workers dish out to their foreman and, especially, to the owner.

You can keep people a long time with you if they enjoy you, the company culture, and are allowed to laugh a little. A good supervisor is not afraid of laughing with and sharing good moments with their employees. You as one of those type of supervisors, should be familiar with every one of your employees, call them by their first names, ask them about their family and kids.

Remember, employees are looking for a feeling of belonging!

Institute a Meaningful Incentive Plan

OK, we finally see money showing up. Sure, money is important and the contractor who can creatively reward performance with good pay and some form of bonus money will keep better workers around

1 longer.

2
3 There are a multitude of incentive-based compensation approaches, and they can be overly simple to
4 more complicated. Whatever path you follow, just be sure that your workers understand what it takes to
5 make that extra dollar. Yes, pay them what they are worth. Evaluate each one of them and give them the
6 rewards they deserve.

7
8 Personal evaluation of an employee is possibly one of the best tools a supervisor possesses to
9 communicate with them. Do not reward borderline employees, evaluate them, and be honest with them
10 then you will see that the majority of them change their attitudes and work habits. Some others will leave,
11 but then you are possibly lucky they left, and you did not have to fire them.

12
13 The most favored performance bonus is for gains made above what was set as a goal.

14 **ASSESS YOUR PRODUCTS/SERVICES**

15
16 Are you confident that your product is of a high quality in design and production?

17
18 Are you confident that there is a market for it?

19
20 Are you confident that your potential customers will pay the price you calculate necessary to meet your
21 costs?
22

23
24 These are some of the questions a contractor should ask about the company products and services.
25 Superior quality, timely production, and customer satisfaction are the qualities a successful contractor
26 must possess. A reputable contractor will be recognized in the industry and will be allowed, at times, to
27 obtain projects where their bid is not the lowest among the other bidders.
28

29 **Measuring Construction Quality**

30
31 Measuring quality is essential to improvement. With measurements, you can see trends, problem areas,
32 and gains made through improvement efforts.
33

34 **KNOW YOUR MARKET AND COMPETITORS**

35
36 One of the first questions people ask about a new idea or venture is, "Who is the competition?" Who else
37 is doing this? The worst rookie mistake in the world is to answer, "No one."

38
39 There is always a competitor. Even if you cannot find anyone else who is doing what you are doing,
40 someone probably is thinking about it. And even if nobody is thinking about it, you'll always have indirect
41 competitors, including the status quo and your customers' thrift.
42

43 As an entrepreneur you should be aware of the market where you are operating.

- 44 • Where are your services in that market?
- 45 • How is your company reputation?
- 46 • Who are your competitors?
- 47 • How busy are they?
- 48 • Do they have enough work that will allow you to increase your prices and get quality projects?
49

50 You will always have competition, and if you want to remain in business, you better get to know them!

51
52 It is essential that you know your market, as without this knowledge you cannot plan your route to market
53 or the means of promotion you will use to inform your customers of your existence.
54

55 It is also essential that you have a comprehensive knowledge of your competitors, as this knowledge will
56 allow you to distinguish what the market will stand plus identify the gaps in the market.
57

1 Market, being the geographical area as well as the type of services you are offering to the public, is an
2 essential part of being a successful contractor. By having a good knowledge of both market and
3 competitors you can develop a more effective marketing effort and successful costing and pricing
4 strategies.

5
6 One way in which to obtain knowledge is to join trade associations where you will be in touch not only
7 with competitors, but also with material suppliers, engineers, etc. who are familiar with the construction
8 environment and their input may be of great value.

9
10 Think about competition in three ways:

11 Barriers to entry

- 12 • Competition often means that there is a barrier to entry: someone or something that stands
13 between you and your customers. Facing a barrier to entry does not necessarily mean that
14 another person or company is doing exactly what you are or that it has a specific barrier such as
15 a patent that impedes your entry.
- 16 • If a customer's needs are being met, there is a barrier.
- 17 • Always ask, "What barriers to entry will I have to surmount?"
- 18 • How is the customer's need being met right now?

19 Differentiation

- 20 • Failing to differentiate and set up barriers to competitors and imitators inevitably leads to profit
21 erosion. In this race to the bottom, the most efficient producers and the least profitable
22 competitors drive down margins to push out their competition.

23 Resources

- 24 • Competitors are not just a problem; they are a great source of information and ideas.
- 25 • The larger theme is the ordeal of what could be called *commodity hell*. The place where
26 executives find themselves when they cannot convince customers that their widgets or services
27 are better than those of their ever-burgeoning competitors. All they can say is, "Yep, we have
28 them too."

29 Failing to differentiate will eventually land you in commodity hell.

30 **COSTING AND PRICING**

31 Costing and pricing are the most difficult tasks you need to address.

32 It is imperative that you know your break-even point: the number of units sold that will cover the costs of
33 your raw materials, overhead, and production time. Only when you know this figure (plus that of your
34 competitors), will you be comfortable in the knowledge of how high or low your price may go.

35 Calculating your break-even point is one of the most useful tools in the costing and bidding of your
36 operations. Your bookkeeper should be able to help you on that task. You should also know what your
37 different mark-up percentages for overhead are, profit.

38 **How to Cost your Products**

39 Be sure to price your work for the actual costs you will incur at the time you produce it.

40 If labor and material costs are expected to go up dramatically before the end of the year, allow for those
41 increases while preparing the cost of your products.

42 If you like the idea of an extended backlog of work, find a way to protect your planned profits from
43 escalating costs of material and labor.

44 During the good economic times, there is an abundance of work, so many sins go unnoticed and if you
45 are making money you might not bother to correct those sins.

1
2 You should have bidding policies for both types of economies: thriving and depressed.

3
4 If you must reduce your prices, do not reduce your actual costs. That should never be done. Play with
5 your profit markups and non-cash fixed overhead.

6
7 Be careful to watch your overhead expenses. Many construction businesses failed during the recession
8 because they could not cover the cost of the overhead they were committed to.

9
10 Know the cost of doing more business before you do more business, so you can use the right markup to
11 price your jobs profitably.

12
13 Before you increase your overhead costs, test the marketplace you plan to work in to make sure you can
14 sell at the increased pricing you will need and can sell enough work at that price.

15
16 Consider if you are in the right market to do business, but also if you have the right marketing and sales
17 skills in place.

18
19 Regardless of the type of economy in the industry, you should keep your overhead expenses low,
20 specially your fixed expenses.

21
22 Remember, those fixed expenses will be with you even in times when you have no backlog.

23
24 If you are planning on expansion or trying new services, before you increase your capital expenditures,
25 test the market to see if it warrants the additional expenditures.

26
27 Price your new products or services and test them in the marketplace to see the effect of the new
28 operation in your company wellbeing.

29 30 **RISK MANAGEMENT**

31
32 Risks are events that can adversely affect the successful outcome of a project or the company. Some of
33 those risks include:

- 34 • Staff lacking the technical skills to perform the work
- 35 • Hardware not delivered on time
- 36 • Infractions of some of the statutes causing down time

37
38 Risks will vary for each company, but the main risks to an organization or project must be identified as
39 soon as possible. Plans must be made to avoid the risk, or, if the risk cannot be avoided, to mitigate the
40 risk to lessen its impact if it occurs. **This is known as risk management.**

41
42 People associate risk management with insurance. To some extent, that is correct, but there are some
43 risks that cannot be insured by obtaining an insurance policy. Some of the risks facing a construction
44 company are mentioned below. We should identify them and try to correct them before they happen.

45
46 Assign risk factors to those unforeseen events and assign priorities based on those factors, with high risk
47 factors being the most severe ones. Remember risks that are allowed to remain unchecked could spell
48 disaster for any company.

49
50 You do not manage all risks because there could be too many and not all risks have the same impact.

- 51 • Identify all risks
- 52 • Estimate the likelihood of each risk occurring (1 = not likely, 2 = maybe likely, 3 = very likely)
- 53 • Estimate its impact on the project (1 = low, 2 = medium, 3 = high)
- 54 • Multiply the two numbers together to obtain the risk factor

55
56 High risk factors indicate the most severe risks. Manage the ten risks with the highest risk factors.

57 Constantly review risks and lookout for new ones since they have a habit of occurring at any moment. Not
58 managing risks effectively is a common reason why projects and companies fail.

KEEP GOOD RECORDS

There is no mystery to bookkeeping. It is nothing more than a filing system of the day-to-day transactions of your business. If you do not record and understand the transactions, your business will control you rather than you are controlling it.

In addition to bookkeeping, we are compelled by the different statutes governing our industry to maintain records of certain activities for a determined period of time.

As mentioned previously, “you cannot do everything needed in your company.” If it is a task that you are not comfortable with, get help, there is plenty of it out there, just look for it.

A good outside bookkeeping service will take care of keeping the books to follow the regulations dictated by the governmental agencies and keep you informed of the financial status of your company.

Business Records Requirements; Address of Record; Service [F.S. 489.124]

This statute reads in part as follows:

- (1) All contractors who are registered or certified shall maintain complete financial and business records for the immediately preceding 3 years. The business and financial records to be maintained shall include minutes of corporate meetings, business contacts, telephone records, insurance policies, letters of complaint, notices received from government entities, bank statements, cancelled checks, records of loan documents, tax returns and all other business and financial records...

Revenue Recognition

In the construction industry, there are two accepted methods to record income:

The percentage of completion method

The completed contract method

The Percentage of Completion Method

In the percentage of completion method, income is generally recognized when work is performed and recorded when statements are mailed.

Contractors sometimes receive payments for work not yet performed or only partially completed. The portion of income above the degree of completion is said to be unearned in the accounting sense. It is not earned and should not be recorded as income until the work is done.

When you receive cash for work that is only partially complete, you have to separate out the unearned portion of income and assign it to a special account. That sum will be recognized as income later, after it is earned. Then you remove it from the special account.

That special account, since it will reflect money received from the client that has not been earned, shall be treated as a liability.

This is known as percentage of completion accounting because you recognize as income only that portion of money received, or charges billed for work that is completed.

With this method, your financial statements give a fairly accurate picture of your financial position, including expected profits or losses.

The advantage of the percentage of completion method is that income and the related costs, expenses, and profits are recognized and reported as the job progresses.

The disadvantage of the percentage of completion method is that all income, costs, expenses, and profits are only estimates until the job is completed.

1 **Completed Contract Method**

2
3 Recognizing income by the completed contract method has the advantage of exactness.

4
5 There is no need to estimate the degree of completion because all income is recognized only when the
6 job is 100% finished.

7
8 This method is always used for small jobs, such as one-time work, material sales, isolated minor
9 contracts, and any other job with a short duration.

10
11 Payment for such work is usually in one installment.

12
13 You can use the completed contract method when you will complete the project within two years from the
14 contract date, and only if your annual gross receipts are under ten million dollars.

15
16 Discuss these methods with your accountant to determine which method is best suited for your company.
17

18 **Preparing a Cash Budget**

19
20 A cash budget must reflect business realities, since you use it to chart the future course of your operation.
21 There are two principal ways to prepare a cash budget or forecast:

- 22 • The cash movement method
- 23 • The source and application of funds method

24 **The Cash Movement Method**

25
26
27 The cash movement method involves budgeting only the flow of actual cash in and out of your business.
28 This method is especially valuable for builders who have wide variations in their business volume from
29 month-to-month. Such variation usually follows a predictable pattern.

30
31 Budgeting by the cash movement method lets you handle directly the cash flow changes that occur
32 because of monthly volume variations.
33

34 **The Source and Application of Funds Method**

35
36 The source and application of funds method is more precise than the cash movement method. It assumes
37 that you will attain a certain level of net income. Then it adjusts for non-cash changes to arrive at the net
38 increase or decrease in working capital.

39
40 Our recommendation is to discuss these methods with your accountant to determine which one is the
41 most beneficial for your company to utilize.
42

43 **Cash Handling Problems and Solutions**

44
45 In this section, we describe some of the problems that employers face with some employees whose
46 responsibility is to handle cash and collections. At the same time, we discuss some of the procedures
47 (solutions) that could be implemented to avoid them.
48

49 **Lapping**

50
51 **Problem:** Lapping is when cash is taken from the business by moving outstanding balances from one
52 customer account to another. The thief can write off the amount of cash taken as a bad debt, or they can
53 adjust the amount as a reconciling item to an out-of-balance system.

54 **Solution:** The way to prevent lapping is to insist on monthly accounts receivable aging lists of all
55 outstanding accounts. Compare this total to a reconciled accounts receivable total.

1 **Unofficial Borrowing**

2
3 **Problem:** An employee can take cash for periodic “emergencies” and intend to pay back what they
4 borrow someday. However, the employee is often tempted to take more and more until it becomes
5 impossible to repay. This becomes unofficial borrowing.

6 **Solution:** Establish office rules on petty cash and stringent control on all funds. Carefully monitor your
7 employees who have access to checking and savings accounts, and cash awaiting deposit.
8

9 **Failing to Record Cash Sales**

10
11 **Problem:** Sales made for cash are only reported if the sale is recorded. An employee who receives the
12 cash and records the sale has the opportunity to pocket the whole amount by failing to record the cash
13 sale.

14 **Solution:**

- 15 • Set up an effective method of accepting cash
- 16 • Use invoices for billings and orders, and fill out sales receipts for cash sales
- 17 • File a copy of the invoice or receipt with the cash when it is received
- 18 • Keep and be able to justify all voided receipts and invoices
19

20 **Falsifying or Taking Discount Amounts**

21
22 **Problem:** Falsifying or taking discount amounts is when an employee makes a purchase, gets a receipt
23 for the net amount, and then pockets the discount amount. Another way is when a bill has been paid in
24 full, but the vendor sends a refund for the discount and the employee pockets that amount.

25 **Solution:**

- 26 • Know the discount terms of your suppliers.
- 27 • Implement a monthly discount summary so that you can verify the terms used by your employees against
28 those quoted by your suppliers.
29

30 **Taking Payments and Writing off Accounts as Bad Debts**

31
32 **Problem:** Taking payments and writing off accounts as bad debts is when an employee receives a
33 payment for a small invoice, pockets the money, and then writes that amount in accounts receivable as a
34 bad debt.

35 **Solution:**

- 36 • Approve all write-offs yourself
- 37 • Never delegate this job to others
- 38 • Prepare the bad debt analysis yourself for greater security
39

40 **Financial Statements**

41 Financial statements summarize your operation’s activity for a certain period, usually a month, quarter, or
42 year, and show its status at the end of that period.
43

44 There are three distinct financial statements:

- 45 • Balance sheet
- 46 • Income statement
- 47 • Statement of cash flow
48

49 **Balance Sheet**

50
51 The balance sheet is a summary of the existing conditions of the business. It lists the assets (things you
52 own), liabilities (things you owe), and net worth of the business as of a given date.

1 **Income Statement**

2
3 The income statement summarizes business operations within a time period. The ending date of that
4 period is always the same as the closing date on the balance sheet.

5
6 The income statement is broken down into these standard divisions:

- 7 • Sales - Revenues
- 8 • Expenses - Costs
- 9 • Net income from operations

10 **Statement of Cash Flows**

11
12
13 The statement of cash flows is a summary of the sources and uses of cash – where it came from and
14 where it went - for the same period covered by the income statement.

15
16 Funds are generally from the following sources:

- 17 • Cash basis net income
- 18 • Sale of assets
- 19 • Increase in liabilities
- 20 • Decrease of other assets

21
22 The application or uses of funds include the purchase of long-term assets (equipment), the decrease of
23 liabilities, and the payment of taxes.

24
25 Any time you change the sources or applications of your funds, you affect your current assets and
26 liabilities.

27 **Tips**

28
29
30 You are a link in the chain of the business; form good relationships with other links.

31
32 Be professional. You are the main asset of your business.

33
34 Indecisiveness wastes time. Gain knowledge and make informed decisions.

35
36 Getting finance is not easy. Acquire it wisely. Spend it wisely.

37
38 You may have an excellent product but, if you are not getting adequately paid for it, you are not in
39 business.

40
41 Research the market. Know your competitors.

42
43 Do what you say and say what you do.

44
45 Implement successful business practices.

Primary Business Functions

Any business has three primary functions as displayed below.

Primary Business Functions		
Administration	Production	Sales
Policies	Resources	Demand
Methods	Capacity	Close
Records	Self-Correction	Service
Compliance	Delivery	
Controls		

Final Thought

“Organizational structure is the oldest and most thoroughly studied area in management ... we have learned that organization does not start with structure but with building blocks; ... that each enterprise needs to design around the key activities appropriate to its mission...”

Peter F. Drucker

“Management Tasks Responsibilities, Practices”

Harper and Row, 1974

Chapter - 4

THE PRINCIPLES OF FLORIDA STATUTES & RULES

SECTION I: ORGANIZATION OF STATUTES

Before we get more detailed into these various laws and rules lets understand how they are setup.

Florida Statute: The Constitution of Florida is the starting point, which establishes the Florida Legislature. Laws created by legislature are published in the Laws of Florida and codified in the Florida Statutes.

State agencies publish regulations that are and must be consistent with the Florida Statutes. These are published in the Florida Administrative Register (FAR). These are codified in the Florida Administrative Code (F.A.C) These are also called as administrative laws.

The Governor appoints various boards that create regulatory rules that are consistent with the state laws and statutes. These board rules are codified in F.A.C.

Regulation	Florida Statutes (F.S.)	Florida Administrative Code (F.A.C.)
General Provisions (Regulates DBPR)	F.S. 455	
Building Code Administrators and Inspectors	F.S. 468	F.A.C. 61G19
Engineering	F.S. 471	F.A.C. 61G15
Architects	F.S. 481	F.A.C. 61G1
Contractors	F.S. 489	F.A.C. 61G4

Department of Business and Professional Regulations (DBPR)

The Department of Business and Professional Regulation is the agency charged with licensing and regulating businesses and professionals in the State of Florida, such as cosmetologists, veterinarians, real estate agents and pari-mutuel wagering facilities. Our mission is to license efficiently and regulate fairly, and we strive to meet this goal in our day-to-day operations. The Department is under the executive branch of the Governor and is governed by Chapter 120, F.S. The Department is structured according to the requirements of Section 20.165, F.S.

DBPR Web Site: www.myfloridalicense.com



Various Boards are created to oversee the implementation of Statutes , Clarify and specify Statutory requirements. Governor Appoints Various Board members. The Boards related to Construction Industry are

- CILB:** Construction Industry Licensing Board
- ECLB:** Electrical Contractors' Licensing Board
- BCAIB:** Building Code Administrators and Inspectors Board
- BAID:** Board of Architecture and Interior Design
- FBPE:** Florida Board of Professional Engineers

Board Rules

When boards adopt Rules, they are published, and if not challenged become part of the “Florida Administrative Code”.

Departmental Provisions

The Florida Administrative Code (F.A.C.) contains specific sanctions, penalties, and specified penalties for infractions.

In regulating the Construction Profession, several board rules apply to each discipline.

SECTION II: REVIEW OF LEGISLATIVE UPDATES**Legislative Updates and their effect on F.S related to Construction Industry**

Please note that we are highlighting the major changes affecting those in the construction related occupations. There are many other changes in the bills and licensees should refer directly to the house bill & statutes for more information.

Florida laws regulating various occupations are always in a state of being changed, modified, added to or eliminated. All this is done in the interest of yielding improvement.

The 2019 - 2021 legislative sessions introduced several House & Senate Bills which mandated changes to construction related occupations.

2019 Legislative Updates

This section outlines the 2019 list house and senate bills that made changes to Florida Statutes effecting the construction industry.

House Bill 369

Section 14. Paragraphs (d) and (g) of subsection (1) of section 440.102, Florida Statutes, are amended to read:

440.102 Drug-free workplace program requirements. - The following provisions apply to a drug-free workplace program implemented pursuant to law or to rules adopted by the Agency for Health Care Administration:

(1) **DEFINITIONS.** - Except where the context otherwise requires, as used in this act:

(d) “Drug rehabilitation program” means a service provider as defined in s. 397.311 ~~which, established pursuant to s. 397.311(43), that~~ provides confidential, timely, and expert identification, assessment, and resolution of employee drug abuse

(g) “Employee assistance program” means an established program capable of providing expert assessment of employee personal concerns; confidential and timely identification services with regard to employee drug abuse; referrals of employees for appropriate diagnosis, treatment, and assistance; and follow up services for employees who participate in the program or require monitoring after returning to work. If, in addition to the above activities, an employee assistance program provides diagnostic and treatment services, these services shall in all cases be provided by service providers as defined in s. 397.311 ~~pursuant to s. 397.311(43).~~

This act took effect July 1, 2019.

House Bill 301

Section 3. Subsection (2) of section 440.381, Florida Statutes, is amended to read:

440.381 Application for coverage; reporting payroll; payroll audit procedures; penalties. -

(2) Submission of an application that contains false, misleading, or incomplete information provided with the purpose of avoiding or reducing the amount of premiums for workers' compensation coverage is a felony of the ~~third~~ second-degree, punishable as provided in s. 775.082, s. 775.083, or s. 775.084. The application must contain a sworn statement by the agent attesting that the agent explained to the employer or officer the classification codes that are used for premium calculations. The sworn statements by the employer and the agent are not required to be notarized.

House Bill 7125

Section 17. Present subsections (3) through (12) of section 455.213, Florida Statutes, are redesignated as subsections (4) through (13), respectively, subsection (2) of that section is amended, and a new subsection (3) is added to that section, to read:

455.213 General licensing provisions

(2) Before the issuance of any license, the department may charge an initial license fee as determined by rule of the applicable board or, if no such board exists, by rule of the department. Upon receipt of the appropriate license fee, except as provided in subsection (4) ~~(3)~~, the department shall issue a license to any person certified by the appropriate board, or its designee, or the department when there is no board, as having met the applicable requirements imposed by law or rule. However, an applicant who is not otherwise qualified for licensure is not entitled to licensure solely based on a passing score on a required examination. Upon a determination by the department that it erroneously issued a license, or upon the revocation of a license by the applicable board, or by the department when there is no board, the licensee must surrender his or her license to the department.

(3)(a) Notwithstanding any other law, the applicable board shall use the process in this subsection for review of an applicant's criminal record to determine his or her eligibility for licensure as:

1. A barber under chapter 476;
2. A cosmetologist or cosmetology specialist under chapter 477; 3.
3. Any of the following construction professions under chapter 489:
 - a. Air-conditioning contractor;
 - b. Electrical contractor;
 - c. Mechanical contractor;
 - d. Plumbing contractor;
 - e. Pollutant storage systems contractor;
 - f. Roofing contractor;
 - g. Sheet metal contractor;
 - h. Solar contractor;
 - i. Swimming pool and spa contractor;
 - j. Underground utility and excavation contractor; or
 - k. Other specialty contractors;

4. Any other profession for which the department issues a license, provided the profession is offered to inmates in any correctional institution or correctional facility as vocational training or through an industry certification program.

(b)1. A conviction, or any other adjudication, for a crime more than 5 years before the date the application is received by the applicable board may not be grounds for denial of a license specified in paragraph (a). For purposes of this paragraph, the term "conviction" means a determination of guilt that is the result of a plea or trial, regardless of whether adjudication is withheld. This paragraph does not limit the applicable board from considering an applicant's criminal history that includes a crime listed in s. 775.21(4)(a)1. or s. 776.08 at any time, but only if such criminal history has been found to relate to the practice of the applicable profession.

2. The applicable board may consider the criminal history of an applicant for licensure under subparagraph (a)3. if such criminal history has been found to relate to good moral character.

(c)1. A person may apply for a license before his or her lawful release from confinement or supervision. The department may not charge an applicant an additional fee for being confined or under supervision.

1 The applicable board may not deny an application for a license solely on the basis of the applicant's
2 current confinement or supervision.

3 2. After a license application is approved, the applicable board may stay the issuance of a license until
4 the applicant is lawfully released from confinement or supervision and the applicant notifies the applicable
5 board of such release. The applicable board must verify the applicant's release with the Department of
6 Corrections before it issues a license.

7 3. If an applicant is unable to appear in person due to his or her confinement or supervision, the
8 applicable board must permit the applicant to appear by teleconference or video conference, as
9 appropriate, at any meeting of the applicable board or other hearing by the agency concerning his or her
10 application.

11 4. If an applicant is confined or under supervision, the Department of Corrections and the applicable
12 board shall cooperate and coordinate to facilitate the appearance of the applicant at a board meeting or
13 agency hearing in person, by teleconference, or by video conference, as appropriate.

14
15 (d) Each applicable board shall compile a list of crimes that, if committed and regardless of adjudication,
16 do not relate to the practice of the profession or the ability to practice the profession and do not constitute
17 grounds for denial of a license. This list must be made available on the department's website and updated
18 annually. Beginning October 1, 2019, each applicable board shall compile a list of crimes that although
19 reported by an applicant for licensure, were not used as a basis for denial. The list must identify for each
20 such license application the crime reported and the date of conviction and whether there was a finding of
21 guilt, a plea, or an adjudication entered or the date of sentencing.

22
23 (e) Each applicable board shall compile a list of crimes that have been used as a basis for denial of a
24 license in the past 2 years and shall make the list available on the department's website. Starting October
25 1, 2019, and updated quarterly thereafter, the applicable board shall compile a list indicating each crime
26 used as a basis for denial. For each crime listed, the applicable board must identify the date of conviction,
27 finding of guilt, plea, or adjudication entered, or date of sentencing. Such denials must be made available
28 to the public upon request.

31 **House Bill 827**

32
33 **Section 2. Paragraph (a) of subsection (6) of section 455.271, Florida Statutes, is amended to read:**

34 **455.271 Inactive and delinquent status.**

35
36
37 ~~(6)(a) A delinquent status licensee must affirmatively apply with a complete application, as defined by rule~~
38 ~~of the board, or the department if there is no board, for active or inactive status during the licensure cycle~~
39 ~~in which a licensee becomes delinquent. Failure by a delinquent status licensee to become active or~~
40 ~~inactive before the expiration of the current licensure cycle shall render the license void without any~~
41 ~~further action by the board or the department. The board, or the department if there is no board, shall, by~~
42 ~~rule, establish a reinstatement process for void licenses.~~

43
44 This subsection does not apply to individuals subject to regulation under chapter 473.

45 **House Bill 447**

46
47
48 **489.103 Exemptions.** - This part does not apply to:

49
50 (7)(a) Owners of property when acting as their own contractor and providing direct, onsite supervision
51 themselves of all work not performed by licensed contractors:

52
53 4. When completing the requirements of a building permit, where the contractor listed on the permit
54 substantially completed the project as determined by the local permitting agency, for a one-family or two-
55 family residence, townhome, or an accessory structure of a one-family or two-family residence or
56 townhome or an individual residential condominium unit or cooperative unit. Prior to qualifying for the
57 exemption, the owner must receive approval from the local permitting agency, and the local permitting

1 agency must determine that the contractor listed on the permit substantially completed the project. An
2 owner who qualifies for the exemption under this subparagraph is not required to occupy the dwelling or
3 unit for at least 1 year after the completion of the project.

4 5 **DISCLOSURE STATEMENT**

6
7 4. I understand that I may build or improve a one-family or two-family residence or a farm outbuilding. I
8 may also build or improve a commercial building if the costs do not exceed \$75,000. The building or
9 residence must be for my own use or occupancy. It may not be built or substantially improved for sale
10 or lease, unless I am completing the requirements of a building permit where the contractor listed on
11 the permit substantially completed the project. If a building or residence that I have built or
12 substantially improved myself is sold or leased within 1 year after the construction is complete, the
13 law will presume that I built or substantially improved it for sale or lease, which violates the
14 exemption.

15 **House Bill 7125**

16
17 **Section 19. Subsections (2), (3), and (4) of section 489.126, Florida Statutes, are amended, and**
18 **subsections (5) and (6) are added to that section, to read:**

19 20 **489.126 Moneys received by contractors.**

21
22 (2)(a) A contractor who receives, as initial payment, money totaling more than 10 percent of the contract
23 price for repair, restoration, improvement, or construction to residential real property must:

24 1.(a) Apply for permits necessary to do work within 30 days after the date payment is made, except
25 where the work does not require a permit under the applicable codes and ordinances, and

26 2.(b) Start the work within 90 days after the date all necessary permits for work, if any, are issued, unless
27 the contractor has just cause for failing to apply for the necessary permits, starting the work, or refunding
28 the payment, or unless the person who made the payment agreed, in writing, to a longer period to apply
29 for the necessary permits or start the work or to longer periods for both.

30 (b)1. If a contractor fails to comply with the requirements of paragraph (a), the contractee must make
31 written demand to the contractor in the form of a letter that includes a demand to apply for the necessary
32 permits, to start the work, or to refund the payment sent via certified mail, return receipt requested, mailed
33 to the address listed in the contracting agreement. If there is no address for the contractor listed in the
34 contracting agreement, or no written agreement exists, the contractee must mail the written demand letter
35 to the address listed for licensing purposes with the department or the local construction industry
36 licensing board, if applicable.

37 2. It may be inferred that a contractor does not have just cause if the contractor fails to apply for the
38 necessary permits, start the work, or refund payments within 30 days of receiving written demand to apply
39 for the necessary permits, start the work, or refund the payment from the person who made the payment.

40 (3)(a) A contractor who receives money for repair, restoration, addition, improvement, or construction of
41 residential real property in excess of the value of the work performed may shall not, with intent to defraud
42 the owner, fail or refuse to perform any work for any 90-day period or for any period that is mutually
43 agreed upon and specified in the contract.

44 (b) It is prima facie evidence. Proof that a contractor received money for the repair, restoration, addition,
45 improvement, or construction of residential real property and that the amount received exceeds the value
46 of the work performed by the contractor when and that:

47 1. The contractor failed to perform any of the work for which he or she contracted during any 90-day 60-
48 day-period or any period that is mutually agreed upon and specified in the contract;

49 2. The failure to perform any such work during the 90-day 60-day-period or such period that is mutually
50 agreed upon and specified in the contract was not related to the owner's termination of the contract or a
51 material breach of the contract by the owner; and

52 3. The contractor failed to perform for the 90-day period or such period that is mutually agreed upon and
53 specified in the contract without just cause or terminated the contract without proper notification to the
54 owner.

1 a. Proper notification of termination for purposes of this subparagraph must be made by the contractor in
2 the form of a letter that includes the reason for termination of the contract or the reason for failure to
3 perform sent via certified mail, return receipt requested, mailed to the address of the owner listed in the
4 contracting agreement. If no written agreement exists, the letter must be mailed to the address where the
5 work was to be performed or the address listed on the permit, if applicable.

6 b. If a contractor fails to comply with paragraph (a), written demand must be made to the contractor in the
7 form of a letter that includes a demand to perform work, or refund the money received in excess of the
8 value of the work performed, sent via certified mail, return receipt requested, mailed to the address listed
9 in the contracting agreement. If there is no address for the contractor listed in the contracting agreement,
10 or no agreement exists, the letter must be mailed to the address listed with the department for licensing
11 purposes or the local construction industry licensing board, if applicable.

12 c. It may be inferred that a contractor does not have just cause if the contractor fails to perform work, or
13 refund the money received in excess of the value of the work performed, within 30 days after receiving a
14 written demand to perform the work, or refund the money received in excess of the value of the work
15 performed, from the person who made the payment, for an additional 30-day period after the date of
16 mailing of notification as specified in paragraph (c), to perform any work for which he or she contracted,
17 gives rise to an inference that the money in excess of the value of the work performed was taken with the
18 intent to defraud.

19 ~~(d)(c) Notification as contemplated in paragraph (b) consists of a certified letter, return receipt requested,~~
20 ~~mailed to the address of the contractor as listed in the written contracting agreement. The letter must~~
21 ~~indicate that the contractor has failed to perform any work for a 60-day period, that the failure to perform~~
22 ~~the work was not the result of the owner's termination of the contract or a material breach of the contract~~
23 ~~by the owner, and that the contractor must recommence construction within 30 days after the date of~~
24 ~~mailing of the letter. If there is no address for the contractor listed in the written contracting agreement, or~~
25 ~~no written agreement exists, the letter must be mailed to the address of the contractor listed in the~~
26 ~~building permit application.~~

27 (4) Any violation of subsection (2) or subsection (3) must be prosecuted in accordance with the thresholds
28 established in this section and the following: ~~person who violates any provision of this section is guilty of~~
29 ~~theft and shall be prosecuted and punished under s. 812.014.~~

30 (a) ~~The required intent to prove a criminal violation may be shown to exist at the time that the contractor~~
31 ~~appropriated the money to his or her own use and is not required to be proven to exist at the time of the~~
32 ~~taking of the money from the owner or at the time the owner makes a payment to the contractor.~~

33 (b) ~~It may be inferred that a contractor intended to deprive the owner of the right to the money owed, or~~
34 ~~deprive the owner of the benefit from it, and inferred that the contractor appropriated the money for his or~~
35 ~~her own use, or to a person not entitled to the use of the money, if the contractor fails to refund any~~
36 ~~portion of the money owed within 30 days after receiving a written demand for such money from the~~
37 ~~owner.~~

38 (c) ~~In a prosecution for a violation of this section, the fact that the person so charged intended to return~~
39 ~~the money owed is not a defense.~~

40 (5) ~~A person who violates subsection (2) commits:~~

41 (a) ~~A misdemeanor of the first degree, punishable as provided in s. 775.082 or s. 775.083, if the total~~
42 ~~money received is less than \$1,000.~~

43 (b) ~~A felony of the third degree, punishable as provided in s. 775.082, s. 775.083, or s. 775.084, if the~~
44 ~~total money received is \$1,000 or more, but less than \$20,000.~~

45 (c) ~~A felony of the second degree, punishable as provided in s. 775.082, s. 775.083, or s. 775.084, if the~~
46 ~~total money received is \$20,000 or more, but less than \$200,000.~~

47 (d) ~~A felony of the first degree, punishable as provided in s. 775.082, s. 775.083, or s. 775.084, if the~~
48 ~~total money received is \$200,000 or more.~~

49 (6) ~~A person who violates subsection (3) commits:~~

50 (a) ~~A misdemeanor of the first degree, punishable as provided in s. 775.082 or s. 775.083, if the total~~
51 ~~money received exceeding the value of the work performed is less than \$1,000.~~

1 (b) A felony of the third degree, punishable as provided in s. 775.082, s. 775.083, or s. 775.084, if the
2 total money received exceeding the value of the work performed is \$1,000 or more, but less than
3 \$20,000.

4 (c) A felony of the second degree, punishable as provided in s. 775.082, s. 775.083, or s. 775.084, if the
5 total money received exceeding the value of the work performed is \$20,000 or more, but less than
6 \$200,000.

7 (d) A felony of the first degree, punishable as provided in s. 775.082, s. 775.083, or s. 775.084, if the
8 total money received exceeding the value of the work performed is \$200,000 or more.

9 10 **House Bill 447**

11
12 **Section 4. Subsection (6) of section 489.503**, Florida Statutes, is amended to read:

13
14 **489.503 Exemptions.** - This part does not apply to:

15
16 (6)(b) - An owner of property completing the requirements of a building permit, where the contractor listed
17 on the permit substantially completed the project as determined by the local permitting agency, for a one-
18 family or two-family residence, townhome, accessory structure of a one-family or two-family residence or
19 townhome or individual residential condominium unit or cooperative unit. Prior to the owner qualifying for
20 the exemption, the owner must receive approval from the local permitting agency, and the local permitting
21 agency must determine that the contractor substantially completed the project. An owner who qualifies for
22 the exemption under this paragraph is not required to occupy the dwelling or unit for at least 1 year after
23 the completion of the project.

24 **Disclosure Statement**

25
26 State law requires electrical contracting to be done by licensed electrical contractors. You have applied
27 for a permit under an exemption to that law. The exemption allows you, as the owner of your property, to
28 act as your own electrical contractor even though you do not have a license. You may install electrical
29 wiring for a farm outbuilding or a single-family or duplex residence. You may install electrical wiring in a
30 commercial building the aggregate construction cost of which are under \$75,000. The home or building
31 must be for your own use and occupancy. It may not be built for sale or lease, unless you are completing
32 the requirements of a building permit where the contractor listed on the permit substantially completed the
33 project. ...

34 35 **House Bill 7125**

36
37 **Section 20. Subsections (7) through (10) are added to section 489.553**, Florida Statutes, to read:

38
39 **489.553 Administration of part; registration qualifications; examination.**

40
41 (7) Notwithstanding any other law, a conviction, or any other adjudication, for a crime more than 5 years
42 before the date the application is received by the department or other applicable authority may not be
43 grounds for denial of registration. For purposes of this subsection, the term "conviction" means a
44 determination of guilt that is the result of a plea or trial, regardless of whether adjudication is withheld.
45 This subsection does not limit a board from considering an applicant's criminal history that includes any
46 crime listed in s. 775.21(4)(a)1. or s. 776.08 at any time, but only if such criminal history has been found
47 to relate to the practice of the applicable profession, or any crime if it has been found to relate to good
48 moral character.

49 (8)(a) A person may apply to be registered before his or her lawful release from confinement or
50 supervision. The department or other applicable authority may not charge an applicant an additional fee
51 for being confined or under supervision. The department or other applicable authority may not deny an
52 application for registration solely on the basis of the applicant's current confinement or supervision.

53 (b) After a registration application is approved, the department or other applicable authority may stay the
54 issuance of registration until the applicant is lawfully released from confinement or supervision and the
55 applicant notifies the board of such release. The department or other applicable authority must verify the
56 applicant's release with the Department of Corrections before it registers such applicant.

1 (c) If an applicant is unable to appear in person due to his or her confinement or supervision, the
2 department or other applicable authority must permit the applicant to appear by teleconference or video
3 conference, as appropriate, at any meeting or hearing by the department or other applicable authority
4 concerning his or her application.

5 (d) If an applicant is confined or under supervision, the Department of Corrections and the department or
6 other applicable authority shall cooperate and coordinate to facilitate the appearance of the applicant at a
7 meeting or hearing in person, by teleconference, or by video conference, as appropriate.

8 (9) The department or other applicable authority shall compile a list of crimes that, if committed and
9 regardless of adjudication, do not relate to the practice of the profession or the ability to practice the
10 profession and do not constitute grounds for denial of registration. This list must be made available on the
11 department's website and updated annually. Beginning October 1, 2019, and updated quarterly
12 thereafter, the department or other applicable authority shall add to this list such crimes that although
13 reported by an applicant for registration, were not used as a basis for denial in the past 2 years. The list
14 must identify for each such registration application the crime reported and the date of conviction, plea,
15 adjudication, or sentencing.

16 (10) The department or other applicable authority shall compile a list of crimes that have been used as a
17 basis for denial of registration in the past 2 years and make the list available on the department's website.
18 Beginning October 1, 2019, and updated quarterly thereafter, the department shall add to this list each
19 crime used as a basis for denial. For each crime listed, the department must identify the date of
20 conviction, plea, adjudication, or sentencing. Such denials must be made available to the public upon
21 request.

24 **House Bill 1247**

25
26 **Section 4. Paragraph (d) of subsection (1) of section 713.23, Florida Statutes, is amended to read:**

28 **713.23 Payment bond.**

29
30 (1)(d) In addition, a lienor who has not received payment for furnishing his or her labor, services, or
31 materials ~~must be required,~~ as a condition precedent to recovery under the bond, ~~to~~ serve a written notice
32 of nonpayment to the contractor and the surety. The notice must be under oath and served during the
33 progress of the work or thereafter, but may not be served ~~not~~ later than 90 days after the final furnishing
34 of labor, services, or materials by the lienor, or, with respect to rental equipment, later than 90 days after
35 the date the rental equipment was on the job site and available for use. A notice of nonpayment that
36 includes sums for retainage must specify the portion of the amount claimed for retainage. The required-~~A~~
37 written notice satisfies this condition precedent with respect to the payment described in the notice of
38 nonpayment, including unpaid finance charges due under the lienor's contract, and with respect to any
39 other payments which become due to the lienor after the date of the notice of nonpayment.

40
41 The time period for serving a ~~written~~ notice of nonpayment shall be measured from the last day of
42 furnishing labor, services, or materials by the lienor and ~~may shall~~ not be measured by other standards,
43 such as the issuance of a certificate of occupancy or the issuance of a certificate of substantial
44 completion. The failure of a lienor to receive retainage sums not in excess of 10 percent of the value of
45 labor, services, or materials furnished by the lienor is not considered a nonpayment requiring the service
46 of the notice provided under this paragraph. If the payment bond is not recorded before commencement
47 of construction, the time period for the lienor to serve a notice of nonpayment may at the option of the
48 lienor be calculated from the date specified in this section or the date the lienor is served a copy of the
49 bond. However, the limitation period for commencement of an action on the payment bond as established
50 in paragraph (e) may not be expanded. The negligent inclusion or omission of any information in the
51 notice of nonpayment that has not prejudiced the contractor or surety does not constitute a default that
52 operates to defeat an otherwise valid bond claim. A lienor who serves a fraudulent notice of nonpayment
53 forfeits his or her rights under the bond. A notice of nonpayment is fraudulent if the lienor has willfully
54 exaggerated the amount unpaid, willfully included a claim for work not performed or materials not
55 furnished for the subject improvement or prepared the notice with such willful and gross negligence as to
56 amount to a willful exaggeration. However, a minor mistake or error in a notice of nonpayment, or a good
57 faith dispute as to the amount unpaid, does not constitute a willful exaggeration that operates to defeat an

1 otherwise valid claim against the bond. The service of a fraudulent notice of nonpayment is a complete
 2 defense to the lienor's claim against the bond. The notice under this paragraph must include the following
 3 information, current as of the date of the notice, and must ~~may~~ be in substantially the following form:

4 5 **NOTICE OF NONPAYMENT**

6
7 To (name of contractor and address)

8 (name of surety and address)

9 The undersigned lienor notifies you that:

10 1. The lienor ~~he or she~~ has furnished (describe labor, services, or materials) for the improvement of the
 11 real property identified as (property description). The corresponding amount ~~now due and unpaid~~ to date
 12 is \$ _____, of which \$ _____ is unpaid retainage.

13 2. The lienor has been paid to date the amount of \$ _____ for previously furnishing (describe labor, services,
 14 or materials) for this improvement.

15 3. The lienor expects to furnish (describe labor, services, or materials) for this improvement in the future
 16 (if known), and the corresponding amount expected to become due is \$ _____ (if known).

17
18 I declare that I have read the foregoing Notice of Nonpayment and that the facts stated in it are true to the
 19 best of my knowledge and belief.

20 21 **House Bill 7125**

22
23 **Section 28. Section 713.69**, Florida Statutes, is amended to read:

24
25 **713.69 Unlawful to remove property upon which lien has accrued.**—It is unlawful for any person to
 26 remove any property upon which a lien has accrued under ~~the provisions of s. 713.68~~ from any hotel,
 27 apartment house, rooming house, lodging house, boardinghouse or tenement house without first making
 28 full payment to the person operating or conducting the same of all sums due and payable for such
 29 occupancy or without first having the written consent of such person so conducting or operating such
 30 place to so remove such property. Any person who violates ~~violating the provisions of this section shall~~, if
 31 the value of the property removed in violation hereof ~~is less than \$1,000~~ ~~be of the value of \$50 or less,~~
 32 ~~commits be guilty of~~ a misdemeanor of the second degree, punishable as provided in s. 775.082 or s.
 33 775.083; and if the value of the property so removed ~~is \$1,000 or more, should be of greater value than~~
 34 ~~\$50~~ ~~then such person commits shall be guilty of~~ a felony of the third degree, punishable as provided in s.
 35 775.082, s. 775.083, or s. 775.084.

36 37 **House Bill 827 - Effective October 1, 2019**

38
39 This bill effects the engineering profession as it amends F.S. 455 and F.S. 471 for reinstatement of void
 40 licenses. Additional effects include:

- 41
- 42 • It removes the requirement that all delinquent status licensees, licensed by the DBPR or a board
 - 43 in accordance with F.S. 455 must apply for reinstatement with a complete application, and
 - 44 instead, the bill requires boards, or the DBPR if there is no board, to adopt by rule a process for
 - 45 reinstating applicants with void licenses.
 - 46 • It removes the requirement that engineers obtain a separate license (certificate of authorization)
 - 47 for their engineering firm.
 - 48 • It requires a licensed engineer to qualify an engineering firm without paying a separate licensing
 - 49 fee.
 - 50 • For a project that is wholly or partially funded by the department and administered by a local
 - 51 governmental entity, the design services and construction engineering and inspection services
 - 52 may not be performed by the same entity.
 - 53 • It provides an additional pathway for licensure as a professional engineer after receiving an
 - 54 engineering technology degree.
 - 55 • It requires applicants for licensure to submit proof of being 18 years of age or older.
 - 56 • It requires the Board of Professional Engineers to extend certain deadlines for granting or
 - 57 denying a license after an applicant fails to appear before the board.

- 1 • It provides a temporary “registration” instead of a temporary “certificate” or “license” for out-of-
- 2 state engineering businesses.
- 3 • It requires successor engineers to assume full responsibility when relying on the work, findings, or
- 4 recommendations of an engineer who previously sealed such documents and releases the
- 5 original engineer from liability for prior work assumed by the successor engineer.
- 6 • It includes repair and restoration works in which a structural system or structural loading of a
- 7 building is modified. The enforcing agency shall require a special inspector to perform inspections
- 8 on a threshold building.
- 9 • The local building official may not prohibit the private provider from performing any inspection
- 10 outside the local building official’s normal operating hours, including after hours, weekends, or
- 11 holidays.
- 12

13 The following sections of the Florida Statutes were amended or added:

- 14
- 15 • 337.14(7)
- 16 • 455.271(6)(a) Inactive and delinquent status
- 17 • 471.005(3) Deleted - Certificate of authorization
- 18 • 471.005(8) License
- 19 • 471.011(4) Fees
- 20 • 471.013(1)(a)1 - 3 (3 was deleted) Examination prerequisites
- 21 • 471.015(2)(a)1, 2, 3, and 6 - Licensure
- 22 • 471.019 Reactivation
- 23 • 471.023(1) - (4) Added subsection a, b, and c(5) was deleted. Qualification of business and
- 24 notification timeline
- 25 • 471.025(4) Added. Successor engineer to recreate all drawings
- 26 • 553.79(5)(a) Threshold inspection for repair and restoration
- 27 • 553.791 Private provider notifications to building department
- 28

29 House Bill 827 - Effective October 1, 2019 - Summary

30

31 **Engineering technology degrees:** Currently, only graduates with engineering sciences degrees from

32 board-approved programs are eligible for licensure in Florida. NOW graduates with bachelor’s degrees in

33 engineering technology from board-approved programs will qualify to apply

34

35 **Decoupling experience and exam eligibility:** Those who have passed the fundamentals of engineering

36 exam will be able to take the principles and practice of engineering exam before completing the years of

37 experience needed to apply for licensure.

- 38 a. Applicants with bachelor’s degrees in engineering sciences will still need four years of active
- 39 engineering experience to apply, but those with bachelor’s in engineering technology will be
- 40 required to have six years of active engineering experience.
- 41 b. Additionally, all applicants in Florida will have to be at least 18 Yrs.
- 42

43 **Engineering firms:** Engineering firms will not be required to apply for a certificate of authorization (CA)

44 and pay a fee. Firms must register their business with the board and be qualified by a professional

45 engineer licensed in Florida.

- 46 c. Rather than renewing a CA every two years, the qualifying engineer of a firm must notify the
- 47 board within 30 days of any changes to information in the firm’s initial registration application.
- 48 d. A qualifying engineer who leaves an engineering firm must notify the board within 24 hours. If the
- 49 qualifying engineer was the only qualifying agent for the business, the firm may no longer provide
- 50 engineering services in Florida and must be qualified by another qualifying engineer within 60
- 51 days if it wishes to resume offering engineering services.
- 52

53 **Successor engineers:** The new law requires successor engineers to assume full professional and legal

54 responsibility of engineering documents when assuming an existing project from another engineer. The

55 revision also releases the original engineer from professional responsibility and civil liability for prior work

56 assumed by a successor engineer.

57

1 **Education waiver:** A change to 471.013 removes a waiver that allowed someone with ten years of active
2 engineering experience who notified the DBPR before July 1, 1984, of their intent to seek a PE license,
3 and was engaged in engineering work on July 1, 1981, to apply for licensure without meeting the
4 education requirements. That original waiver is not valid after October 1, 2019.

5 **Other changes that affect engineering:** Design services and construction engineering and inspection
6 services CAN'T be performed by the same entity on projects receiving funding from the Florida
7 Department of Transportation that are administered by a local government entity.

- 8 e. Holders of a license issued by Florida that has gone null and void will be able to go through a
9 process to have their license and number reinstated.
10 f. The new law expands requirements in F.S. 553.79. In addition to new construction, special
11 inspectors of threshold buildings will be required to inspect repair and restoration projects in
12 which the structural system or structural loading of a building has been modified.
13

14 **2020 Legislative Update**

15
16 This section outlines the 2020 list house and senate bills that made changes to Florida Statutes effecting
17 the construction industry
18

19 **Senate Bill No. 1606.**

20
21
22 An act relating to insurance administration; amending ss. 440.12 and 440.20, F.S.; authorizing the
23 payment of certain workers' compensation benefits to be transmitted to the employee's account with a
24 licensed money transmitter. Signed into law in June 2020 and becoming effective on July 1, 2020.
25

26 **F.S 440.12 Time for commencement and limits on weekly rate of compensation.**

27
28 (1) Compensation is not allowed for the first 7 days of the disability, except for benefits provided under s.
29 440.13. However, if the injury results in more than 21 days of disability, compensation is allowed from the
30 commencement of the disability.
31

32 All weekly compensation payments, except for the first payment, must be **paid** by check or, if authorized
33 by the employee, paid on a prepaid card pursuant to paragraph (b), deposited directly into the employee's
34 account at a financial institution as defined in s. 655.005, or transmitted to the employee's account with a
35 money transmitter licensed under part II of chapter 560.
36
37

38 **F.S 440.20 Time for payment of compensation and medical bills; penalties for late payment.**

39
40 (1)(a) Unless the carrier denies compensability or entitlement to benefits, the carrier shall pay
41 compensation directly to the employee as required by ss. 440.14, 440.15, and 440.16, in accordance with
42 those sections. Upon receipt of the employee's authorization as provided for in s. 440.12(1)(a), the
43 carrier's obligation to pay compensation directly to the employee is satisfied when the carrier directly
44 deposits, by electronic transfer or other means, compensation into the employee's account at a financial
45 institution as defined in s. 655.005 or onto a prepaid card in accordance with s. 440.12(1) or transmits the
46 employee's compensation to the employee's account with a money transmitter licensed under part II of
47 chapter 560. Compensation by direct deposit, the use of a prepaid card, or through transmission is
48 considered paid on the date the funds become available for withdrawal by the employee.
49

50 (6)(a) If any installment of compensation for death or dependency benefits, or compensation for disability
51 benefits payable without an award is not paid within 7 days after it becomes due, as provided in
52 subsection (2), subsection (3), or subsection (4), there shall be added to such unpaid installment a
53 penalty of an amount equal to 20 percent of the unpaid installment, which shall be paid at the same time
54 as, but in addition to, such installment of compensation. This penalty shall not apply for late payments
55 resulting from conditions over which the employer or carrier had no control. When any installment of
56 compensation payable without an award has not been paid within 7 days after it became due and the
57 claimant concludes the prosecution of the claim before a judge of compensation claims without having
58 specifically claimed additional compensation in the nature of a penalty under this section, the claimant will

1 be deemed to have acknowledged that, owing to conditions over which the employer or carrier had no
 2 control, such installment could not be paid within the period prescribed for payment and to have waived
 3 the right to claim such penalty. However, during the course of a hearing, the judge of compensation
 4 claims shall on her, or his own motion raise the question of whether such penalty should be awarded or
 5 excused. The department may assess without a hearing the penalty against either the employer or the
 6 carrier, depending upon who was at fault in causing the delay. The insurance policy cannot provide that
 7 this sum will be paid by the carrier if the department or the judge of compensation claims determines that
 8 the penalty should be paid by the employer rather than the carrier. Any additional installment of
 9 compensation paid by the carrier pursuant to this section shall be paid directly to the employee by check
 10 or, if authorized by the employee, by direct deposit into the employee's account at a financial institution **or**
 11 by transmission to the employee's account with a money transmitter licensed under part II of chapter 560.
 12

13 **House Bill No. 1193**

14
 15 An act relating to the deregulation of professions and occupations; providing a short title; amending s.
 16 455.213, F.S.; requiring the department or a board to enter into reciprocal licensing agreements with
 17 other states under certain circumstances; providing requirements; creating s. 455.2278, F.S.; defining
 18 terms; prohibiting the department or a board from suspending or revoking a person's license solely on the
 19 basis of a delinquency or default in the payment of his or her student loan; prohibiting the department or a
 20 board from suspending or revoking a person's license solely on the basis of a default in satisfying the
 21 requirements of his or her work-conditional scholarship;
 22

23 Amending s. 489.103, F.S.; revising certain contract prices for exemption; amending s. 489.111, F.S.;
 24 revising provisions relating to eligibility for licensure; amending s. 489.113, F.S.; providing that applicants
 25 who meet certain requirements are not required to pass a specified examination; amending s. 489.115,
 26 F.S.; requiring the Construction Industry Licensing Board to certify any applicant who holds a specified
 27 license to practice contracting issued by another state or territory of the United States under certain
 28 circumstances; requiring certain applicants to complete certain training;
 29

30 Amending s. 489.511, F.S.; requiring the board to certify as qualified for certification by endorsement any
 31 applicant who holds a specified license to practice electrical or alarm system contracting issued by
 32 another state or territory of the United States under certain circumstances; requiring certain applicants to
 33 complete certain training; amending s. 489.517, F.S.; providing a reduction in certain continuing
 34 education hours required for certain contractors; amending s. 489.518, F.S.; requiring a person to have
 35 completed a specified amount of training within a certain time period to perform the duties of an alarm
 36 system agent;
 37

38 Amending s. 553.5141, F.S.; conforming provisions to changes made by the act; amending s. 553.74,
 39 F.S.; revising the membership and qualifications of the Florida Building Commission.
 40 Approved by the Governor June 30, 2020; effective date of July 1, 2020.
 41

42 This act may be cited as the "Occupational Freedom and Opportunity Act."
 43

44 **F.S 455.213 General licensing provisions.- New section added**

45
 46 (14) The department or a board must enter into a reciprocal licensing agreement with other states if the
 47 practice act within the purview of this chapter permits such agreement. If a reciprocal licensing agreement
 48 exists or if the department or board has determined another state's licensing requirements or
 49 examinations to be substantially equivalent or more stringent to those under the practice act, the
 50 department or board must post on its website which jurisdictions have such reciprocal licensing
 51 agreements or substantially similar licenses.
 52

53 **F.S 455.2278 Restriction on disciplinary action for student loan default**

54
 55 Section 455.2278, Florida Statutes, is created to read as follows:
 56

57 (1) DEFINITIONS. — As used in this section, the term:

- 58 • (a) "Default" means the failure to repay a student loan according to the terms agreed to in the
 59 promissory note.

- 1 • (b)“Delinquency” means the failure to make a student loan payment when it is due.
- 2 • (c)“Student loan” means a federal-guaranteed or state-guaranteed loan for the purposes of
- 3 postsecondary education.
- 4 • (d)“Work-conditional scholarship” means an award of financial aid for a student to further his or
- 5 her education which imposes an obligation on the student to complete certain work-related
- 6 requirements to receive or to continue receiving the scholarship.

7

8 (2) STUDENT LOAN DEFAULT; DELINQUENCY. — The department or a board may not suspend or

9 revoke a license that it has issued to any person who is in default on or delinquent in the payment of his

10 or her student loans solely on the basis of such default or delinquency.

11

12 (3) WORK-CONDITIONAL SCHOLARSHIP DEFAULT. — The department or a board may not suspend or

13 revoke a license that it has issued to any person who is in default on the satisfaction of the requirements

14 of his or her work-conditional scholarship solely on the basis of such default.

15

16 **F.S 489.103 Exemptions.**

17

18 Subsection (9) of section 489.103, Florida Statutes, is amended to read:

19

20 (9) Any work or operation of a casual, minor, or inconsequential nature in which the aggregate contract

21 price for labor, materials, and all other items is less than “replaced \$1,000 with \$2,500”, but this

22 exemption does not apply:

- 23
- 24 • (a) If the construction, repair, remodeling, or improvement is a part of a larger or major operation,
- 25 whether undertaken by the same or a different contractor, or in which a division of the operation is
- 26 made in contracts of amounts less than “replaced \$1,000 with \$2,500” for the purpose of evading
- 27 this part or otherwise.
- 28
- 29 • (b) To a person who advertises that he or she is a contractor or otherwise represents that he or
- 30 she is qualified to engage in contracting.

31

32 **F.S 489.111 Licensure by examination.**

33

34 Subsection (2) of section 489.111, Florida Statutes, is amended to read:

35

36 (2) A person shall be eligible for licensure by examination if the person:

- 37
- 38 • (a) Is 18 years of age.
- 39 • (b) Is of good moral character; and
- 40 • (c) Meets eligibility requirements according to one of the following criteria:
 - 41 ○ 1. Has received a baccalaureate degree from an accredited 4-year college in the appropriate
 - 42 field of engineering, architecture, or building construction and has 1 year of proven
 - 43 experience in the category in which the person seeks to qualify. For the purpose of this part,
 - 44 a minimum of 2,000 person-hours shall be used in determining full-time equivalency. An
 - 45 applicant who is exempt from passing an examination under s. 489.113(1) is eligible for a
 - 46 license under this section.
 - 47 ○ 2. Has a total of at least 4 years of active experience as a worker who has learned the trade
 - 48 by serving an apprenticeship as a skilled worker who is able to command the rate of a
 - 49 mechanic in the particular trade or as a foreman who is in charge of a group of workers and
 - 50 usually is responsible to a superintendent or a contractor or his or her equivalent, provided,
 - 51 however, that at least 1 year of active experience shall be as a foreman.
 - 52 ○ 3. Has a combination of not less than 1 year of experience as a foreman and not less than 3
 - 53 years of credits for any accredited college-level courses; has a combination of not less than 1
 - 54 year of experience as a skilled worker, 1 year of experience as a foreman, and not less than
 - 55 2 years of credits for any accredited college-level courses; or has a combination of not less
 - 56 than 2 years of experience as a skilled worker, 1 year of experience as a foreman, and not
 - 57 less than 1 year of credits for any accredited college-level courses. All junior college or
 - 58 community college-level courses shall be considered accredited college-level courses.

- 1 ○ 4(a) An active certified residential contractor is eligible to “substituted take with receive a
2 certified building contractor license after passing or having previously passed” the building
3 contractors’ examination if he or she possesses a minimum of 3 years of proven experience
4 in the classification in which he or she is certified.
- 5 ○ 4(b) An active certified residential contractor is eligible to “substituted take with receive a
6 certified general contractor license after passing or having previously passed” the general
7 contractors’ examination if he or she possesses a minimum of 4 years of proven experience
8 in the classification in which he or she is certified.
- 9 ○ 4(c) An active certified building contractor is eligible to “substituted take with receive a
10 certified general contractor license after passing or having previously passed “ the general
11 contractors’ examination if he or she possesses a minimum of 4 years of proven experience
12 in the classification in which he or she is certified.
- 13 ○ 5(a) An active certified air-conditioning Class C contractor is eligible to “substituted take with
14 receive a certified air-conditioning Class B contractor license after passing or having
15 previously passed” the air-conditioning Class B contractors’ examination if he or she
16 possesses a minimum of 3 years of proven experience in the classification in which he or she
17 is certified.
- 18 ○ 5(b) An active certified air-conditioning Class C contractor is eligible to “substituted take with
19 receive a certified air-conditioning Class A contractor license after passing or having
20 previously passed” the air-conditioning Class A contractors’ examination if he or she
21 possesses a minimum of 4 years of proven experience in the classification in which he or she
22 is certified.
- 23 ○ 5(c) An active certified air-conditioning Class B contractor is eligible to “substituted take with
24 receive a certified air-conditioning Class A contractor license after passing or having
25 previously passed” the air-conditioning Class A contractors’ examination if he or she
26 possesses a minimum of 1 year of proven experience in the classification in which he or she
27 is certified.
- 28 ○ 6(a) An active certified swimming pool servicing contractor is eligible to “substituted take with
29 receive a certified residential swimming pool contractor license after passing or having
30 previously passed” the residential swimming pool contractors’ examination if he or she
31 possesses a minimum of 3 years of proven experience in the classification in which he or she
32 is certified.
- 33 ○ 6(b) An active certified swimming pool servicing contractor is eligible to “substituted take with
34 receive a certified commercial swimming pool contractor license after passing or having
35 previously passed” the swimming pool commercial contractors’ examination if he or she
36 possesses a minimum of 4 years of proven experience in the classification in which he or she
37 is certified.
- 38 ○ 6(c) An active certified residential swimming pool contractor is eligible to “substituted take
39 with receive a certified commercial swimming pool contractor license after passing or having
40 previously passed” the commercial swimming pool contractors’ examination if he or she
41 possesses a minimum of 1 year of proven experience in the classification in which he or she
42 is certified.
- 43 ○ 6(d) An applicant is eligible to “substituted take with receive a certified swimming pool/spa
44 servicing contractor license after passing or having previously passed” the swimming
45 pool/spa servicing contractors’ examination if he or she has satisfactorily completed 60 hours
46 of instruction in courses related to the scope of work covered by that license and approved by
47 the Construction Industry Licensing Board by rule and has at least 1 year of proven
48 experience related to the scope of work of such a contractor.

50 **F.S 489.113 Qualifications for practice; restrictions.**

51
52 Subsection (1) of section 489.113, Florida Statutes, is amended to read:

53
54 (1) Any person who desires to engage in contracting on a statewide basis shall, as a prerequisite thereto,
55 establish his or her competency and qualifications to be certified pursuant to this part. To establish
56 competency, a person shall pass the appropriate examination approved by the board and certified by the
57 department. If an applicant has received a baccalaureate degree in building construction from an
58 accredited 4-year college, or a related degree as approved by the board by rule and has a grade point
59 average of 3.0 or higher, such applicant is only required to take and pass the business and finance

1 portion of the examination. Any person who desires to engage in contracting on other than a statewide
2 basis shall, as a prerequisite thereto, be registered pursuant to this part, unless exempted by this part.

3
4 **F.S 489.115 Certification and registration; endorsement; reciprocity; renewals; continuing**
5 **education.**

6
7 Subsection (3) of section 489.115, Florida Statutes, is amended to read:

8
9 (3) The board shall certify as qualified for certification by endorsement any applicant who:

10 (a) Meets the requirements for certification as set forth in this section; has passed a national, regional,
11 state, or United States territorial licensing examination that is substantially equivalent to the examination
12 required by this part; and has satisfied the requirements set forth in s. 489.111.

13 (b) Holds a valid license to practice contracting issued by another state or territory of the United States, if
14 the criteria for issuance of such license were substantially equivalent to Florida's current certification
15 criteria; or

16 (c) Holds a valid, current license to practice contracting issued by another state or territory of the United
17 States, if the state or territory has entered into a reciprocal agreement with the board for the recognition of
18 contractor licenses issued in that state, based on criteria for the issuance of such licenses that are
19 substantially equivalent to the criteria for certification in this state; **or**

20 (d) Has held a valid, current license to practice contracting issued by another state or territory of the
21 United States for at least 10 years before the date of application and is applying for the same or similar
22 license in this state, subject to subsections (5)-(9). The board may consider an applicant's technical
23 competence to ensure the applicant is able to meet the requirements of this state's codes and standards
24 for wind mitigation and water intrusion. The board may also consider whether such applicant has had a
25 license to practice contracting revoked, suspended, or otherwise acted against by the licensing authority
26 of another state, territory, or country. Such application must be made either when the license in another
27 state or territory is active or within 2 years after such license was last active. Division I contractors and
28 roofing contractors must complete a 2-hour course on the Florida Building Code which includes
29 information on wind mitigation techniques. The required courses may be completed online.

30
31 **F.S 489.511 Certification; application; examinations; endorsement.**

32
33 Subsection (5) of section 489.511, Florida Statutes, is amended to read:

34
35 (5) The board shall certify as qualified for certification by endorsement any individual applying for
36 certification who:

37 (a) Meets the requirements for certification as set forth in this section; has passed a national, regional,
38 state, or United States territorial licensing examination that is substantially equivalent to the examination
39 required by this part; and has satisfied the requirements set forth in s. 489.521.

40 (b) Holds a valid license to practice electrical or alarm system contracting issued by another state or
41 territory of the United States, if the criteria for issuance of such license was substantially equivalent to the
42 certification criteria that existed in this state at the time the certificate was issued.

43 (c) Has held a valid, current license to practice electrical or alarm system contracting issued by another
44 state or territory of the United States for at least 10 years before the date of application and is applying for
45 the same or similar license in this state, subject to ss. 489.510 and 489.521(3)(a) and subparagraph
46 (1)(b)1. Such application must be made either when the license in another state or territory is active or
47 within 2 years after such license was last active. Electrical contractors and alarm system contractors must
48 complete a 2-hour course on the Florida Building Code. The required courses may be completed online.

49
50 **F.S 489.517 Renewal of certificate or registration; continuing education.**

51
52 Subsection (3) and paragraph (b) of subsection (4) of section 489.517, Florida Statutes, are amended to
53 read:

54 (3)(a) Each certificate holder or registrant licensed as a specialty contractor or an alarm system contractor

1 shall provide proof, in a form established by rule of the board, that the certificate holder or registrant has
2 completed at least ~~14~~ 7 classroom hours of at least 50 minutes each of continuing education courses
3 during each biennium since the issuance or renewal of the certificate or registration. The board shall by
4 rule establish criteria for the approval of continuing education courses and providers and may by rule
5 establish criteria for accepting alternative non-classroom continuing education on an hour-for-hour basis.

6 (3)(b) Each certificate holder or registrant licensed as an electrical contractor shall provide proof, in a form
7 established by rule of the board, that the certificate holder or registrant has completed at least 11
8 classroom hours of at least 50 minutes each of continuing education courses during each biennium since
9 the issuance or renewal of the certificate or registration. The board shall by rule establish criteria for the
10 approval of continuing education courses and providers and may by rule establish criteria for accepting
11 alternative non-classroom continuing education on an hour-for-hour basis.

12 (4)(b)1. For licensed specialty contractors or alarm system contractors, of the 14 7 classroom hours of
13 continuing education required, at least 7 hours 1 hour must be on technical subjects, 1 hour on workers'
14 compensation, 1 hour on workplace safety, 1 hour on business practices, and 2 hours on false alarm
15 prevention.

16 (4)(b)2. For licensed electrical contractors, of the minimum 11 classroom hours of continuing education
17 required, at least 7 hours 1 hour must be on technical subjects, 1 hour on workers' compensation, 1 hour
18 on workplace safety, and 1 hour on business practices for alarm system contractors and electrical
19 contractors engaged in alarm system contracting. Electrical contractors engaged in alarm system
20 contracting must also complete 2 hours on false alarm prevention.

21 22 **F.S 489.518 Alarm system agents.**

23
24 Section 69. Paragraph (b) of subsection (1) of section 489.518, Florida Statutes, is amended to read:

25 (1) A licensed electrical or alarm system contractor may not employ a person to perform the duties of a
26 burglar alarm system agent unless the person:

27 (1)(b) Has successfully completed a minimum of 14 hours of training within 90 days after employment, to
28 include basic alarm system electronics in addition to related training including CCTV and access control
29 training, with at least 2 hours of training in the prevention of false alarms. Such training shall be from a
30 board-approved provider, and the employee or applicant for employment shall provide proof of successful
31 completion to the licensed employer. The board shall by rule establish criteria for the approval of training
32 courses and providers and may by rule establish criteria for accepting alternative non-classroom
33 education on an hour-for-hour basis. The board shall approve providers that conduct training in other than
34 the English language. The board shall establish a fee for the approval of training providers or courses, not
35 to exceed \$60. Qualified employers may conduct training classes for their employees, with board
36 approval. Qualified employers may conduct training classes for their employees, with board approval.

37 38 **F.S 489.551 Definitions**

39
40 As used in this part:

41
42 (1) "Department" means the Department of "replaced Health with Environmental Protection."

43 44 **F.S 553.74 Florida Building Commission.**

45
46 Effective January 1, 2021, subsection (1) of section 553.74, Florida Statutes, is amended to read:

47
48 (1) The Florida Building Commission is created and located within the Department of Business and
49 Professional Regulation for administrative purposes. Members are appointed by the Governor subject to
50 confirmation by the Senate. The commission is composed of 19 27members, consisting of the following
51 **members:**

52 (a) One architect licensed pursuant to chapter 481 with at least 5 years of experience in the design and
53 construction of buildings designated for Group E or Group I occupancies by the Florida Building Code.
54 The American Institute of Architects, Florida Section, is encouraged to recommend a list of candidates for
55 consideration.

1 (c) One air-conditioning contractor, mechanical contractor, or mechanical engineer certified to do
2 business in this state and actively engaged in the profession. The Florida Air Conditioning Contractors
3 Association, the Florida Refrigeration and Air Conditioning Contractors Association, and the Mechanical
4 Contractors Association of Florida, **and the Florida Engineering Society** are encouraged to recommend
5 a list of candidates for consideration.

6 (d) One electrical contractor or electrical engineer certified to do business in this state and actively
7 engaged in the profession. The Florida Association of Electrical Contractors, the National Electrical
8 Contractors Association, Florida Chapter, and the Florida Engineering Society are encouraged to
9 recommend a list of candidates for consideration.

10 ~~(e) One member from fire protection engineering or 2401 technology who is actively engaged in the~~
11 ~~profession. The 2402 Florida Chapter of the Society of Fire Protection Engineers and 2403 the Florida~~
12 ~~Fire Marshals and Inspectors Association are 2404 encouraged to recommend a list of candidates for~~
13 ~~consideration.~~

14 ~~(f, e)~~ One certified general contractor or one certified building contractor certified to do business in this
15 state and actively engaged in the profession. The Associated Builders and Contractors of Florida, the
16 Florida Associated General Contractors Council, the Florida Home Builders Association, and the Union
17 Contractors Association are encouraged to recommend a list of candidates for consideration.

18 ~~(g, f)~~ One certified residential contractor licensed to do business in this state and actively engaged in the
19 profession. The Florida Home Builders Association is encouraged to recommend a list of candidates for
20 consideration.

21 ~~(h, i)~~ Three members who are municipal, county, or district codes enforcement officials, one of whom is
22 also a fire official. The Building Officials Association of Florida and the Florida Fire Marshals and
23 Inspectors Association are encouraged to recommend a list of candidates for consideration.

24 Previous (1)(k) and (1)(l) have been deleted

25 (j) Previous (m) One member of a Florida-based organization of persons with disabilities or a nationally
26 chartered organization of persons with disabilities with chapters in this state which complies with or is
27 certified to be compliant with the requirements of the Americans with Disabilities Act of 1990, as
28 amended.

29 Previous (o) and (p) have been deleted

30 Previous (t) has been deleted

31 (p) The Chief Resilience Officer or his or her designee.

32 (q) Previous (v) has been deleted.

33
34 **F.S 468.603 Definitions.—As used in this part**

35
36 (5) "Categories of building code inspectors" include the following:

37 (f) "~~Residential One and two family dwelling inspector~~" means a person who is qualified to inspect and
38 determine that one-family, two-family, or three-family residences not exceeding two habitable stories
39 above no more than one uninhabitable story and accessory use structures in connection therewith one
40 and two family dwellings and accessory structures are constructed in accordance with the provisions of
41 the governing building, plumbing, mechanical, accessibility, and electrical codes.

42
43 **468.613 Certification by endorsement.**

44
45 The board shall examine other certification or training programs, as applicable, upon submission to the
46 board for its consideration of an application for certification by endorsement. The board shall waive its
47 examination, qualification, education, or training requirements, to the extent that such examination,
48 qualification, education, or training requirements of the applicant are determined by the board to be
49 comparable with those established by the board. The board shall waive its examination, qualification,
50 education, or training requirements if an applicant for certification by endorsement is at least 18 years of
51 age; is of good moral character; has held a valid building administrator, inspector, plans examiner, or the
52 equivalent certification issued by another state or territory of the United States for at least 10 years before

1 the date of application; and has successfully passed an applicable examination administered by the
2 International Code Council. Such application must be made either when the license in another state or
3 territory is active or within 2 years after such license was last active

4 5 **468.8314 Licensure.** 6

7 (3) The department shall certify as qualified for a license by endorsement an applicant who is of goodmoral
8 character as determined in s. 468.8313, who maintains an insurance policy as required by s. 468.8322, and
9 who:

10 (a) Holds a valid license to practice home inspection services in another state or territory of the United
11 States, whose educational requirements are substantially equivalent to those required by this part; and has
12 passed a national, regional, state, or territorial licensing examination that is substantially equivalent to the
13 examination required by this part; or

14 (b) Has held a valid license to practice home inspection services issued by another state or territory of the
15 United States for at least 10 years before the date of application. Such application must be made either
16 when the license in another state or territory is active or within 2 years after such license was last active.
17

18 **2021 Legislative Updates**

19 20 **HB 401 – Florida Building Code** 21

22 As it pertains to the administration of the Building Code, the bill:

- 23 • Allows a substantially affected person to petition the Commission for a non-binding advisory opinion
24 on whether a local government regulation is an improper amendment to the Building Code, and
25 establishes a process for such petitions;
- 26 • Allows the Commission to issue an “errata to the code” to list demonstrated errors in provisions
27 contained within the Building Code;
- 28 • Requires the Commission to adopt rules for approving product evaluation entities in addition to the
29 ones already listed and approved in current law;
- 30 • Clarifies that the Commission may suspend product evaluation entities;
- 31 • Clarifies that local government entities may use private providers for their own construction projects;
- 32 • Provides that a local government may use excess funds generated by Building Code enforcement for
33 the construction of a building or structure that houses the local government’s building department or
34 provides training programs for building officials, inspectors, or plans examiners;
- 35 • Provides that excess funds used to construct such a building or structure must be designated for such
36 purpose by the local government and may not be carried forward for more than four years; and
- 37 • Prohibits a local government from requiring a contract between a builder and an owner as a condition
38 to apply for or obtain a building permit.
- 39 • Specifies that a local government may not use preliminary maps issued by the Federal Emergency
40 Management Agency for any law, ordinance, rule, or other measure that has the effect of imposing
41 land use changes or permits.
- 42 • The bill makes several changes to current law pertaining to licensed individuals providing private
43 building inspection services, known as “private providers.” Current law allows contractors and
44 property owners to hire licensed building code administrators, engineers, and architects to review
45 building plans, perform building inspections, and prepare certificates of completion. The bill makes
46 the following changes to the private provider statute:
 - 47 • Expressly authorizes private providers to conduct virtual building inspections.
 - 48 • Allows private providers to submit various inspection forms, records, and reports electronically to local
49 building departments and utilize electronic signatures.
 - 50 • Allows private providers to conduct “single-trade inspections,” as defined in the bill.
 - 51 • Authorizes private providers to conduct emergency inspection services.
 - 52 • Additionally, the bill expressly authorizes local governments and school districts to use private
53 providers for public works projects and improvements to any building or structure.
 - 54 • Finally, the bill amends the Community Planning Act to prohibit local governments from adopting land
55 development regulations that regulate specific building design elements (such as exterior color and

1 cladding, ornamentation, styling of windows and doors, etc.) for single- and two-family dwellings.
2 However, certain exceptions are provided that allow local governments to regulate such building
3 design elements when: The dwelling is a historic property or located in a historic district, a community
4 redevelopment area, or a planned unit development or master planned community.

5
6 **Except as otherwise expressly provided in this act, this act shall take effect July 1, 2021.**

7
8 **F.S 163.3202 Land development regulations.—**

9
10 Present subsection (5) of section 163.3202, Florida Statutes, is redesignated as subsection (6), and a
11 new subsection (5) is added to that section, to read:

12
13 (5)(a) Land development regulations relating to building design elements may not be applied to a single-
14 family or two-family dwelling unless:

15
16 1. The dwelling is listed in the National Register of Historic Places, as defined in s. 267.021(5); is located
17 in a National Register Historic District; or is designated as a historic property or located in a historic
18 district, under the terms of a local preservation ordinance;

19 2. The regulations are adopted in order to implement the National Flood Insurance Program;

20 3. The regulations are adopted pursuant to and in compliance with chapter 553;

21 4. The dwelling is located in a community redevelopment area, as defined in s. 163.340(10);

22 5. The regulations are required to ensure protection of coastal wildlife in compliance with s. 161.052, s.
23 161.053, s. 161.0531, s. 161.085, s. 161.163, or chapter 373;

24 6. The dwelling is located in a planned unit development or master planned community created pursuant
25 to a local ordinance, resolution, or other final action approved by the local governing body; or

26 7. The dwelling is located within the jurisdiction of a local government that has a design review board or
27 architectural review board.

28
29 (5)(b) For purposes of this subsection, the term:

30
31 1. "Building design elements" means the external building color; the type or style of exterior cladding
32 material; the style or material of roof structures or porches; the exterior nonstructural architectural
33 ornamentation; the location or architectural styling of windows or doors; the location or orientation of the
34 garage; the number and type of rooms; and the interior layout of rooms. The term does not include the
35 height, bulk, orientation, or location of a dwelling on a zoning lot; or the use of buffering or screening to
36 minimize potential adverse physical or visual impacts or to protect the privacy of neighbors.

37
38 2. "Planned unit development" or "master planned community" means an area of land that is planned and
39 developed as a single entity or in approved stages with uses and structures substantially related to the
40 character of the entire development, or a self-contained development in which the subdivision and zoning
41 controls are applied to the project as a whole rather than to individual lots.

42
43 (5)(c) This subsection does not affect the validity or enforceability of private covenants or other
44 contractual agreements relating to building design elements.

45
46 **F.S 553.73 Florida Building Code.—**

47
48 Subsections (4), (5), and (8) of section 553.73, Florida Statutes, are amended to read:

49
50 (4)(a) All entities authorized to enforce the Florida Building Code under pursuant to s. 553.80 shall comply
51 with applicable standards for issuance of mandatory certificates of occupancy, minimum types of
52 inspections, and procedures for plans review and inspections as established by the commission by rule.
53 Local governments may adopt amendments to the administrative provisions of the Florida Building Code,
54 subject to the limitations in of this subsection paragraph. Local amendments must shall be more stringent
55 than the minimum standards described in this section herein and must shall be transmitted to the

1 commission within 30 days after enactment. The local government shall make such amendments
2 available to the general public in a usable format. The State Fire Marshal is responsible for establishing
3 the standards and procedures required in this ~~subsection~~ ~~paragraph~~ for governmental entities with
4 respect to applying the Florida Fire Prevention Code and the Life Safety Code.

5
6 (4)(b) Local governments may, subject to the limitations ~~in~~ ~~of~~ this section ~~and not more than once every 6~~
7 ~~months~~, adopt amendments to the technical provisions of the Florida Building Code ~~that which~~ apply
8 solely within the jurisdiction of such government and ~~that which~~ provide for more stringent requirements
9 than those specified in the Florida Building Code, ~~not more than once every 6 months~~. A local
10 government may adopt technical amendments that address local needs if:

11
12 (4)(l) If a local government adopts a regulation, law, ordinance, policy, amendment, or land use or zoning
13 provision without using the process established in this subsection, and a substantially affected person
14 considers such regulation, law, ordinance, policy, amendment, or land use or zoning provision to be a
15 technical amendment to the Florida Building Code, then the substantially affected person may submit a
16 petition to the commission for a nonbinding advisory opinion. If a substantially affected person submits a
17 request in accordance with this paragraph, the commission shall issue a nonbinding advisory opinion
18 stating whether or not the commission interprets the regulation, law, ordinance, policy, amendment, or
19 land use or zoning provision as a technical amendment to the Florida Building Code. As used in this
20 paragraph, the term "local government" means a county, municipality, special district, or political
21 subdivision of the state.

22
23 1. Requests to review a local government regulation, law, ordinance, policy, amendment, or land
24 use or zoning provision may be initiated by any substantially affected person. A substantially
25 affected person includes an owner or builder subject to the regulation, law, ordinance, policy,
26 amendment, or land use or zoning provision, or an association of owners or builders having
27 members who are subject to the regulation, law, ordinance, policy, amendment, or land use or
28 zoning provision.

29
30 2. In order to initiate a review, a substantially affected person must file a petition with the
31 commission. The commission shall adopt a form for the petition and directions for filing, which
32 shall be published on the Building Code Information System. The form shall, at a minimum,
33 require the following:

34
35 a. The name of the local government that enacted the regulation, law, ordinance, policy,
36 amendment, or land use or zoning provision.

37
38 b. The name and address of the local government's general counsel or administrator.

39
40 c. The name, address, and telephone number of the petitioner; the name, address, and telephone
41 number of the petitioner's representative, if any; and an explanation of how the petitioner's
42 substantial interests are being affected by the regulation, law, ordinance, policy, amendment, or
43 land use or zoning provision.

44
45 d. A statement explaining why the regulation, law, ordinance, policy, amendment, or land use or
46 zoning provision is a technical amendment to the Florida Building Code, and which provisions of
47 the Florida Building Code, if any, are being amended by the regulation, law, ordinance, policy,
48 amendment, or land use or zoning provision.

49
50 3. The petitioner shall serve the petition on the local government's general counsel or
51 administrator by certified mail, return receipt requested, and send a copy of the petition to the
52 commission, in accordance with the commission's published directions. The local government
53 shall respond to the petition in accordance with the form by certified mail, return receipt
54 requested, and send a copy of its response to the commission, within 14 days after receipt of the
55 petition, including Saturdays, Sundays, and legal holidays.

56
57 4. Upon receipt of a petition that meets the requirements of this paragraph, the commission shall
58 publish the petition, including any response submitted by the local government, on the Building

1 Code Information System in a manner that allows interested persons to address the issues by
2 posting comments.

3
4 5. Before issuing an advisory opinion, the commission shall consider the petition, the response,
5 and any comments posted on the Building Code Information System. The commission may also
6 provide the petition, the response, and any comments posted on the Building Code Information
7 System to a technical advisory committee and may consider any recommendation provided by
8 the technical advisory committee. The commission shall issue an advisory opinion stating
9 whether the regulation, law, ordinance, policy, amendment, or land use or zoning provision is a
10 technical amendment to the Florida Building Code within 30 days after the filing of the petition,
11 including Saturdays, Sundays, and legal holidays. The commission shall publish its advisory
12 opinion on the Building Code Information System and in the Florida Administrative Register. The
13 commission's advisory opinion is nonbinding and is not a declaratory statement under s. 120.565.
14

15 (5) Notwithstanding subsection (4), counties and municipalities may adopt by ordinance an administrative
16 or technical amendment to the Florida Building Code relating to flood resistance in order to implement the
17 National Flood Insurance Program or incentives. Specifically, an administrative amendment may assign
18 the duty to enforce all or portions of flood-related code provisions to the appropriate agencies of the local
19 government and adopt procedures for variances and exceptions from flood-related code provisions other
20 than provisions for structures seaward of the coastal construction control line consistent with the
21 requirements in 44 C.F.R. s. 60.6. A technical amendment is authorized to the extent it is more stringent
22 than the code. A technical amendment is not subject to the requirements of subsection (4) and may not
23 be rendered void when the code is updated if the amendment is adopted for the purpose of participating
24 in the Community Rating System promulgated pursuant to 42 U.S.C. s. 4022, the amendment had
25 already been adopted by local ordinance prior to July 1, 2010, or the amendment requires a design flood
26 elevation above the base flood elevation. Any amendment adopted under this subsection shall be
27 transmitted to the commission within 30 days after being adopted. A municipality, county, or special
28 district may not use preliminary maps issued by the Federal Emergency Management Agency for any law,
29 ordinance, rule, or other measure that has the effect of imposing land use changes or permits.
30

31 The following paragraphs were added to Subsection (8).
32

33 (b) The commission may issue errata to the code pursuant to the rule adoption procedures in chapter
34 120 to list demonstrated errors in provisions contained within the Florida Building Code. The
35 determination of such errors and the issuance of errata to the code must be approved by a 75 percent
36 supermajority vote of the commission. For purposes of this paragraph, "errata to the code" means a
37 list of errors on current and previous editions of the Florida Building Code.
38

39 **553.79 Permits; applications; issuance; inspections.—**

40 Paragraph (d) is added to subsection (1) of section 553.79, Florida Statutes, to read:
41

42
43 (1) (d) A local government may not require a contract between a builder and an owner for the issuance of
44 a building permit or as a requirement for the submission of a building permit application.
45

46 **553.791 Alternative plans review and inspection.—**

47
48 (1) As used in this section, the term:
49

50 (d) "Building code inspection services" adds, conducted either in person or virtually.
51

52 (e) "Deliver" or "delivery" means any method of delivery used in conventional business or commercial
53 practice, including delivery by electronic transmissions.
54

55 (g) "Electronically posted" means providing notices of decisions, results, or records, including
56 inspection records, through the use of a website or other form of electronic communication used to
57 transmit or display information.
58

1 (h) "Electronic signature" means any letters, characters, or symbols manifested by electronic or
2 similar means which are executed or adopted by a party with an intent to authenticate a writing or
3 record.

4
5 (i) "Electronic transmission" or "submitted electronically" means any form or process of
6 communication not directly involving the physical transfer of paper or another tangible medium which
7 is suitable for the retention, retrieval, and reproduction of information by the recipient and is
8 retrievable in paper form by the receipt through an automated process. All notices provided for in this
9 section may be transmitted electronically and shall have the same legal effect as if physically posted
10 or mailed.

11
12 (p) "Single-trade inspection" means any inspection focused on a single construction trade, such as
13 plumbing, mechanical, or electrical. The term includes, but is not limited to, inspections of door or
14 window replacements; fences and block walls more than 6 feet high from the top of the wall to the
15 bottom of the footing; stucco or plastering; reroofing with no structural alteration; HVAC
16 replacements; ductwork or fan replacements; alteration or installation of wiring, lighting, and service
17 panels; water heater changeouts; sink replacements; and repiping.

18
19 (2) (b)

- 20 • (b) If an owner or contractor retains a private provider for purposes of plans review or building
21 inspection services, the local jurisdiction must reduce the permit fee by the amount of cost
22 savings realized by the local enforcement agency for not having to perform such services. Such
23 reduction may be calculated on a flat fee or percentage basis, or any other reasonable means by
24 which a local enforcement agency assesses the cost for its plans review or inspection services. ~~It~~
25 ~~is the intent of the Legislature that owners and contractors pay reduced fees related to building~~
26 ~~permitting requirements when hiring a private provider for plans review and building inspections.~~
27 ~~A local jurisdiction must calculate the cost savings to the local enforcement agency, based on a~~
28 ~~fee owner or contractor hiring a private provider to perform plans reviews and building inspections~~
29 ~~in lieu of the local building official, and reduce the permit fees accordingly. The local jurisdiction~~
30 ~~may not charge fees for building inspections if the fee owner or contractor hires a private provider~~
31 ~~to perform such services; however, the local jurisdiction may charge a reasonable administrative~~
32 ~~fee.~~

33
34 (10) If equipment replacements and repairs must be performed in an emergency situation, subject to the
35 emergency permitting provisions of the Florida Building Code, a private provider may perform emergency
36 inspection services without first notifying the local building official pursuant to subsection (9). A private
37 provider must conduct the inspection within 3 business days after being contacted to conduct an
38 emergency inspection and must submit the inspection report to the local building official within 1 day after
39 the inspection is completed.

40
41 (11) ~~(10)~~ Replaces; The form must bear the written or electronic signature of ~~be signed by~~ the provider or
42 the provider's duly authorized representative. Also replaces; The private provider, upon completion of the
43 required inspection before leaving the project site, shall post each completed inspection record, indicating
44 pass or fail, at the site and provide the record to the local building official within 2 business days. Such
45 inspection record may be electronically posted by the private provider, or the private provider may post
46 such inspection record physically at the project site. The private provider may electronically transmit the
47 record to the local building official.

48
49 (12) ~~(11)~~ Added: or may be electronically transmitted to the local building official:

50
51 (15) ~~(14)~~ Replaces facsimile number with e-mail address.

52
53 (21) Notwithstanding any other law, a county, a municipality, a school district, or an independent special
54 district may use a private provider to provide building code inspection services for a public works project,
55 an improvement, a building, or any other structure that is owned by the county, municipality, school
56 district, or independent special district.

553.80 Enforcement.—

Paragraph (a) of subsection (7) of section 553.80, Florida Statutes, is amended to read:

(7)(a) 2. A local government must use any excess funds that it is prohibited from carrying forward to rebate and reduce fees, or to pay for the construction of a building or structure that houses a local government's building code enforcement agency or the training programs for building officials, inspectors, or plans examiners associated with the enforcement of the Florida Building Code. Excess funds used to construct such a building or structure must be designated for such purpose by the local government and may not be carried forward for more than 4 consecutive years.

553.842 Product evaluation and approval.—

Paragraph (a) of subsection (8) and subsection (14) of section 553.842, Florida Statutes, are amended to read:

(8) (a) Evaluation entities approved ~~under pursuant to~~ this paragraph or that meet the criteria for approval adopted by the commission by rule. The commission shall specifically approve the National Evaluation Service, the International Association of Plumbing and Mechanical Officials Evaluation Service, the International Code Council Evaluation Services, Underwriters Laboratories, LLC, Intertek Testing Services NA, Inc., and the Miami-Dade County Building Code Compliance Office Product Control Division. Architects and engineers licensed in this state are also approved to conduct product evaluations as provided in subsection (5).

(14) The commission shall by rule establish criteria for revocation of product approvals as well as suspension revocation of approvals of product evaluation entities, including those approved in accordance with paragraph (8)(a), and suspension or revocation of approvals of testing laboratories, quality assurance entities, certification agencies, and validation entities. Suspension and revocation is governed by s. 120.60 and the uniform rules of procedure.

HB 667 - Building Inspections

Current law requires local governments to enforce the Building Code and issue building permits. Current law also requires state agencies, state universities, Florida College System institutions, and public-school districts to enforce the Building Code in certain situations. It is unlawful for a person or corporation to construct, alter, repair, or demolish a building without obtaining a permit from the enforcing agency. Construction work that requires a building permit requires inspections to ensure the work complies with the Building Code.

The bill authorizes any government entity with the authority to enforce the Building Code to perform virtual building inspections, with the exception of certain structural inspections. The bill defines "virtual inspection" as an inspection that uses visual or electronic aids to allow a building official or inspector to perform an inspection without having to be physically present at the job site during the inspection.

The bill also requires local building code enforcement agencies to allow requests for inspections to be submitted to the local agency electronically via e-mail, electronic form, or mobile application.

Finally, the bill requires a building code enforcement agency to refund 10 percent of the permit and inspection fees if:

The inspector or building official determines the work, which requires the permit, fails an inspection; and
The inspector or building official fails to provide a reason that is based on compliance with the Building Code, the Florida Fire Prevention Code, or local ordinance, indicating why the work failed the inspection within 5 business days.

This act shall take effect July 1, 2021

125.56 Enforcement and amendment of the Florida Building Code and the Florida Fire Prevention Code; inspection fees; inspectors; etc.—

Paragraph (f) is added to subsection (4) of section 125.56, Florida Statutes, to read:

4) (f) A county that issues building permits must allow requests for inspections to be submitted electronically to the county building department. Acceptable methods of electronic submission include, but are not limited to, e-mail or

- fill-in form available on the website of the building department or
- through a third-party submission management software or
- application that can be downloaded on a mobile device.

Requests for inspections may be submitted in a nonelectronic format, at the discretion of the building official.

553.79 Permits; applications; issuance; inspections.—

Subsections (6) through (22) of section 553.79, Florida Statutes, are renumbered as subsections (8) through (24), respectively, subsection (2) of that section is amended, paragraph (d) is added to subsection (1) and subsections (6) and (7) are added to that section, to read:

(1) (d) A local enforcement agency must allow requests for inspections to be submitted electronically to the local enforcement agency's appropriate building department. Acceptable methods of electronic submission include, but are not limited to, e-mail or fill-in form available on the website of the building department or through a third-party submission management software or application that can be downloaded on a mobile device. Requests for inspections may be submitted in a nonelectronic format, at the discretion of the building official.

Subsection (6) and (7) have been added to read:

(6) A state or local enforcement agency may perform virtual inspections at the discretion of the enforcement agency. However, a state or local enforcement agency may not perform virtual inspections for structural inspections on a threshold building. For purposes of this subsection, the term "virtual inspection" means a form of visual inspection which uses visual or electronic aids to allow a building code administrator or an inspector, or team of inspectors, to perform an inspection without having to be physically present at the job site during the inspection.

(7) (a) A local enforcement agency must refund 10 percent of the permit and inspection fees to a permit holder if:

1. The inspector or building code administrator determines that the work, which requires the permit, fails an inspection; and
2. The inspector or building code administrator fails to provide, within 5 business days after the inspection, the permit holder or his or her agent with a reason, based on compliance with the Florida Building Code, Florida Fire Prevention Code, or local ordinance, for why the work failed the inspection.

(7) (b) If any permit and inspection fees are refunded under paragraph (a), the surcharges provided in s. 553.721 or s. 468.631 must be recalculated based on the amount of the permit and inspection fees after the refund.

HB 735- Preemption of Local Occupational Licenses

The bill expressly preempts the licensing of occupations to the state and supersedes any local government licensing of occupations, with the exception of local government licensing of occupations authorized by general law or occupational licenses imposed by a local government before January 1, 2021. However, the exception for local government licensing imposed by a local government expires July

1, 2023. Local government occupational licensing requirements in place by January 1, 2021, may not be increased or modified thereafter.

The bill specifically prohibits local governments from requiring a license for a person whose job scope does not substantially correspond to that of a contractor or journeyman type licensed by the Construction Industry Licensing Board, within the Department of Business and Professional Regulation. It specifically precludes local governments from requiring a license for: painting, flooring, cabinetry, interior remodeling, driveway or tennis court installation, handyman services, decorative stone, tile, marble, granite, or terrazzo installation, plastering, stuccoing, caulking, and canvas awning and ornamental iron installation.

The bill authorizes counties and municipalities to issue journeyman licenses in the plumbing, pipe fitting, mechanical, and HVAC trades, as well as the electrical and alarm system trades, which is the current practice by counties and municipalities. As a result of this authorization in general law, local journeyman licensing is excepted from the preemption of local licensing to the state under the bill.

This act shall take effect July 1, 2021

163.211 Licensing of occupations preempted to state.—

Section 163.211, Florida Statutes, is created to read:

(1) DEFINITIONS.—As used in this section:

(a) "Licensing" means any training, education, test, certification, registration, or license that is required for a person to perform an occupation in addition to any associated fee.

(b) "Local government" means a county, municipality, special district, or political subdivision of the state.

(c) "Occupation" means a paid job, profession, work, line of work, trade, employment, position, post, career, field, vocation, or craft.

(2) PREEMPTION OF OCCUPATIONAL LICENSING TO THE STATE.— The licensing of occupations is expressly preempted to the state and this section supersedes any local government licensing requirement of occupations with the exception of the following:

(a) Any local government that imposed licenses on occupations before January 1, 2021. However, any such local government licensing of occupations expires on July 1, 2023.

(b) Any local government licensing of occupations authorized by general law.

(3) EXISTING LICENSING LIMIT.—A local government that licenses occupations and retains such licensing as set forth in paragraph (2)(a) may not impose additional licensing requirements on that occupation or modify such licensing.

(4) LOCAL LICENSING NOT AUTHORIZED.—Local licensing of an occupation that is not authorized under this section or otherwise authorized by general law does not apply and may not be enforced.

489.117 Registration; specialty contractors.—

Paragraph (a) of subsection (4) of section 489.117, Florida Statutes, is amended to read:

(4)(a) A person holding a local license whose job scope does not substantially correspond to either the job scope of one of the contractor categories defined in s. 489.105(3)(a)-(o), or the job scope of one of the certified specialty contractor categories established by board rule, is not required to register with the board ~~to perform contracting activities within the scope of such specialty license.~~ A local government, as defined in s. 163.211, may not require a person to obtain a license for a job scope which does not substantially correspond to the job scope of one of the contractor categories defined in s. 489.105(3)(a)-(o) and (q) or authorized in s. 489.1455(1). For purposes of this section, job scopes for which a local government may not require a license include, but are not limited to, painting; flooring; cabinetry; interior remodeling; driveway or tennis court installation; handyman services; decorative stone, tile, marble, granite, or terrazzo installation; plastering; stuccoing; caulking; and canvas awning and ornamental iron installation.

1 Section 489.1455, Florida Statutes, is amended by adding paragraph (1) and amending previous
2 paragraph (1) as (2) to read:

3
4 **489.1455 Journeyman; reciprocity; standards.—**

5
6 (1) Counties and municipalities are authorized to issue journeyman licenses in the plumbing, pipe fitting,
7 mechanical, or HVAC trades.

8
9 (2) ~~(1)~~ An individual who holds a valid, active journeyman license in the plumbing, pipe fitting
10 ~~plumbing/pipe fitting~~, mechanical, or HVAC trades issued by any county or municipality in this state may
11 work as a journeyman in the trade in which he or she is licensed in any county or municipality of this state
12 without taking an additional examination or paying an additional license fee, if he or she:

13
14 (a) Has scored at least 70 percent, or after October 1, 1997, at least 75 percent, on a proctored
15 journeyman Block and Associates examination or other proctored examination approved by the board for
16 the ~~electrical~~ trade in which he or she is licensed;

17
18 (b) Has completed an apprenticeship program registered with a registration agency defined in 29 C.F.R.
19 s. 29.2 and demonstrates 4 years' verifiable practical experience in the ~~electrical~~ trade for which he or
20 she is licensed, or demonstrates 6 years' verifiable practical experience in the ~~electrical~~ trade for which he
21 or she is licensed;

22
23 (c) Has satisfactorily completed specialized and advanced module coursework approved by the Florida
24 Building Commission, as part of the building code training program established in s.553.841, specific to
25 the discipline, or, pursuant to authorization by the certifying authority, provides proof of completion of
26 such curriculum or coursework within 6 months after such certification; and

27
28 (d) Has not had a license suspended or revoked within the last 5 years.

29
30 (3) ~~(2)~~ A local government may charge a registration fee for reciprocity, not to exceed \$25.

31
32
33 **CS/CS/HB 1059 – Construction Permits**

34
35 CS/CS/HB 1059 makes various changes to the Florida Building Codes Act and related statutes. The
36 Florida Building Codes Act provides a mechanism for the uniform adoption, updating, interpretation, and
37 enforcement of a single, unified state building code. The Florida Building Code (Building Code) is the
38 statewide building code for all construction in the state and must be applied, administered, and enforced
39 uniformly and consistently from jurisdiction to jurisdiction.

40
41 Local governments enforce the Building Code within their jurisdictions, primarily by conducting
42 inspections and issuing building permits to authorize construction. It is unlawful to construct, alter, repair,
43 or demolish a building without obtaining a building permit.

44
45 The bill makes various changes to the ways in which local enforcement agencies receive and process
46 building permit applications. Specifically, the bill requires local enforcement agencies to:

47 Allow building permit applications, including payments, attachments, drawings, and other documents, to
48 be submitted electronically.

49 Post the current status of every building permit application received on its website.

50 Post the agency's procedures for reviewing, processing, and approving building permit applications on its
51 website.

52 Review additional information for an application for a development permit or development order within a
53 certain time-period.

54 Allow building permit applicants 10 business days to correct an application for a single-family residential
55 dwelling that was initially denied by the local enforcement agency.

1 Reduce permit fees by specified amounts after failing to meet statutory deadlines for reviewing certain
2 building permit applications.

3
4 Finally, the bill prohibits government entities, which enforce the Building Code, from requiring a copy of a
5 contractor's contract with owners, subcontractors, or suppliers in order to obtain a building permit for
6 projects on commercial property.

7
8 **This act shall take effect October 1, 2021**

9
10 **F.S 125.022 Development permits and orders. —**

11
12 Subsection (2)(b), (c) have been added, and (d) of section 125.022, Florida Statutes, is amended to read:

13
14 (2) (b) If a county makes a request for additional information and the applicant submits the required
15 additional information within 30 days after receiving the request, the county must review the application
16 for completeness and issue a letter indicating that all required information has been submitted or specify
17 with particularity any areas that are deficient within 30 days after receiving the additional information.

18
19 (c) If a county makes a second request for additional information and the applicant submits the required
20 additional information within 30 days after receiving the request, the county must review the application
21 for completeness and issue a letter indicating that all required information has been submitted or specify
22 with particularity any areas that are deficient within 10 days after receiving the additional information.

23
24 (d) Before a third request for additional information, the applicant must be offered a meeting to attempt to
25 resolve outstanding issues. If a county makes a third request for additional information and the applicant
26 submits the required additional information within 30 days after receiving the request, the county must
27 deem the application complete within 10 days after receiving the additional information or proceed to
28 process the application for approval or denial unless the applicant waived the county's limitation in writing
29 as described in paragraph (a).

30
31 **F.S 125.56 Enforcement and amendment of the Florida Building Code and the Florida Fire**
32 **Prevention Code; Inspection Fees; Inspectors; etc.**

33
34 Paragraph (b) of subsection (4) of **section 125.56, Florida Statutes**, is amended, and paragraph (f) is
35 added to that subsection, to read:

36
37 (4) (b) A county that issues building permits shall post each type of building permit application, including
38 a list of all required attachments, drawings, or other requirements for each type of application, on its
39 website. A county must post and update the status of every received application on its website until the
40 issuance of the building permit. Completed applications, including payments, attachments, drawings, or
41 other requirements or parts of the completed permit application, must be able to be submitted
42 electronically to the county building department. Accepted methods of electronic submission include, but
43 are not limited to, e-mail submission of applications in Portable Document Format or submission of
44 applications through an electronic fill-in form available on the building department's website or through a
45 third-party submission management software. Completed applications, including payments, attachments,
46 or drawings, or other requirements or parts required as part of the completed permit application, may also
47 be submitted in person in a nonelectronic format, at the discretion of the building official.

- 48
49
 - (f) A county that issues building permits must post its procedures for processing, reviewing, and
50 approving submitted building permit applications on its website.

51
52 **F.S 166.033 Development Permits and Orders**

53
54 Subsection (2) (b), (c) and (d) of section 166.033, Florida Statutes, have been amended to read:

55
56 (2) (b) If a municipality makes a request for additional information and the applicant submits the required
57 additional information within 30 days after receiving the request, the municipality must review the
58 application for completeness and issue a letter indicating that all required information has been submitted

1 or specify with particularity any areas that are deficient within 30 days after receiving the additional
2 information.

3
4 (c) If a municipality makes a second request for additional information and the applicant submits the
5 required additional information within 30 days after receiving the request, the municipality must review the
6 application for completeness and issue a letter indicating that all required information has been submitted
7 or specify with particularity any areas that are deficient within 10 days after receiving the additional
8 information.

9
10 (d) Before a third request for additional information, the applicant must be offered a meeting to attempt to
11 resolve outstanding issues. If a municipality makes a third request for additional information and the
12 applicant submits the required additional information within 30 days after receiving the request, the
13 municipality must deem the application complete within 10 days after receiving the additional information
14 or proceed to process the application for approval or denial unless the applicant waived the municipality's
15 limitation in writing as described in paragraph (a).

16 17 18 **553.79 Permits; applications; issuance; inspections.—**

19
20 Section (1) (b) has been amended and Paragraph (d) is added to subsection (1)

21
22 b) A local enforcement agency shall post each type of building permit application, including a list of all
23 required attachments, drawings, or other requirements for each type of application, on its website. A local
24 enforcement agency must post and update the status of every received application on its website until the
25 issuance of the building permit. Completed applications, including payments, attachments, drawings, or
26 other requirements or parts of the completed permit application, must be able to be submitted
27 electronically to the appropriate building department. Accepted methods of electronic submission include,
28 but are not limited to, e-mail submission of applications in Portable Document Format or submission of
29 applications through an electronic fill-in form available on the building department's website or through a
30 third-party submission management software. Completed applications, including payments, attachments,
31 or drawings, or other requirements or parts required as part of the completed permit application, may also
32 be submitted in person in anonelectronic format, at the discretion of the building official
33 (d) A local enforcement agency must post its procedures for processing, reviewing, and approving
34 submitted building permit applications on its website.

35
36 Article (14) has been amended and sub-articles (a) (b) and (c) has been added to read as follows:

37
38 (14) A building permit for a single-family residential dwelling must be issued within 30 business working
39 days after receiving the permit of application ~~therefor~~ unless unusual circumstances require a longer time
40 for processing the application or unless the permit application fails to satisfy the Florida Building Code or
41 the enforcing agency's laws or ordinances.

42
43 (a) If a local enforcement agency fails to issue a building permit for a single-family residential dwelling
44 within 30 business days after receiving the permit application, it must reduce the building permit fee by 10
45 percent for each business day that it fails to meet the deadline. Each 10 percent reduction shall be based
46 on the original amount of the building permit fee.

47
48 (b) A local enforcement agency does not have to reduce the building permit fee if it provides written
49 notice to the applicant, by e-mail or United States Postal Service, within 30 business days after receiving
50 the permit application, that specifically states the reasons the permit application fails to satisfy the Florida
51 Building Code or the enforcing agency's laws or ordinances. The written notice must also state that the
52 applicant has 10 business days after receiving the written notice to submit revisions to correct the permit
53 application and that failure to correct the application within 10 business days will result in a denial of the
54 application.

55
56 (c) The applicant has 10 business days after receiving the written notice to address the reasons specified
57 by the local enforcement agency and submit revisions to correct the permit application. If the applicant
58 submits revisions within 10 business days after receiving the written notice, the local enforcement
59 agency has 10 business days after receiving such revisions to approve or deny the building permit

1 unless the applicant agrees to a longer period in writing. If the local enforcement agency fails to issue or
2 deny the building permit within 10 business days after receiving the revisions, it must reduce the building
3 permit fee by 20 percent for the first business day that it fails to meet the deadline unless the applicant
4 agrees to a longer period in writing. For each additional business day, but not to exceed 5 business days,
5 that the local enforcement agency fails to meet the deadline, the building permit fee must be reduced by
6 an additional 10 percent. Each reduction shall be based on the original amount of the building permit
7 fee.

8
9 (d) If any building permit fees are refunded under this subsection, the surcharges provided in s. 468.631
10 or s. 553.721 must be recalculated based on the amount of the building permit fees after the refund.

11
12 **553.792 Building permit application to local government.—**

13
14 Section 553.792, Florida Statutes, is amended to read:

15
16 Subsections (1)(b) and (2)(b) have been added to read as follows:

17
18 (1) (b) If a local government fails to meet a deadline provided in paragraph (a), it must reduce the
19 building permit fee by 10 percent for each business day that it fails to meet the deadline. Each 10 percent
20 reduction shall be based on the original amount of the building permit fee, unless the parties agree to an
21 extension of time.

22
23 (2) (b) If a local government has different timeframes than the timeframes set forth in subsection (1) for
24 reviewing building permit applications described in paragraph (a), the local government must meet the
25 deadlines established by local ordinance. If a local government does not meet an established deadline to
26 approve, approve with conditions, or deny an application, it must reduce the building permit fee by 10
27 percent for each business day that it fails to meet the deadline. Each 10 percent reduction shall be based
28 on the original amount of the building permit fee unless the parties agree to an extension of time. This
29 paragraph does not apply to permits for any wireless communications facilities.

30
31 **553.794 Local government residential master building permit program.—**

32
33 Paragraph (c) of subsection (5) of section 553.794, Florida Statutes, is amended to read:

34
35 (5) **MASTER BUILDING PERMIT APPLICATION APPROVAL PROCESS.—**

36 (c) The local building department must approve or deny a master building permit application within
37 120 days after the local building department receives a completed application unless the applicant
38 agrees to a longer period. If a local building department fails to approve or deny a master building
39 permit application within 120 days after receiving the completed permit application, it must reduce the
40 master building permit fee by 10 percent for each business day that it fails to meet the deadline,
41 unless the applicant agrees to a longer time period. Each 10 percent reduction shall be based on the
42 original amount of the master building permit fee. If any master building permit fees are refunded, the
43 surcharges provided in s. 468.631 or s. 553.721 must be recalculated based on the amount of the
44 master building permit fees after the refund.

45
46
47 **713.135 Notice of commencement and applicability of lien.—**

48
49 A new subsection (6) is added to section 713.135, Florida Statutes, to read:

50
51 (6) An authority that issues building permits may not require an applicant to provide a direct contract or a
52 contract between a contractor and any other lienor as a condition of the application for, or processing or
53 issuance of, a building permit for the construction of improvements or for the alteration or repair of
54 improvements on or to commercial property. This subsection does not apply to the construction of
55 improvements, or the alteration or repair of improvements owned or leased by the federal government,
56 the state or any county, city, or political subdivision thereof, or other public authority.

SECTION III: FLORIDA ADMINISTRATIVE CODE CHANGES

Only 2020 Changes have been discussed here

F.A.C. 2020

Note: Additions to the code are in ***bold italic*** format and deletions are ~~strikethrough~~. Only few of them have been shown in detail

Summary of changes to various Board Rules that were made in the Florida Administrative Codes during the calendar year ending on December 31, 2020:

61G1 – Board of Architects and Interior Designers.

- 61G1-11.012 – Educational Advisory Review.
- 61G1-12.001 – Grounds for Disciplinary Proceedings.
- 61G1-12.005 – Citations.
- 61G1-12.007 - Notice of Non-compliance.
- 61G1-16.004 - Title Block.
- 61G1-17.001 - Professional Fees for Architects.
- 61G1-20.001 – Examination Designated. (Repealed).
- 61G1-24.001 - Continuing Education for Architects.

61G4 – Construction Industry Licensing Board (CILB)

- 61G4-17.002 – Aggravating and Mitigating Circumstances.

61G6 – Electrical Contractors Licensing Board (ECLB)

- 61G6-6.001 – Certification Examination Requirements.

61G6-6.017 – Examination Scores.

61G6-7.001 – Specialty Electrical Contractors.

61G6-9.002 – Criteria for Continuing Education for Reactivation of License.

61G6-9.003 – Definitions.

61G6-10.006 – Reinstatement and Relicensure.

61G15 – Board of Professional Engineers

- 61G15-18.011 – Definitions.

61G15-18.012 – Other Board Business for Which Compensation is Allowed.

61G15-19.0051 – Notice of Noncompliance.

61G15-19.0071 – Citations.

61G15-20.007 – Educational Requirements for Applicants without EAC/ABET Accredited Engineering Degrees.

61G15-18.011 – Definitions.

61G15-18.012 – Other Board Business for Which Compensation is Allowed.

61G15-19.0051 – Notice of Noncompliance.

61G15-19.0071 – Citations.

61G15-20.007 – Educational Requirements for Applicants without EAC/ABET Accredited Engineering Degrees.

61G15-20.008 – Educational Requirements for Applicants without ETAC/ABET Accredited Engineering Technology Degrees.

61G15-20.0010 - Application for Licensure as Professional Engineer.

61G15-22.009 – Exemptions from Continuing Education Requirements.

61G15-22.011 - Board Approval of Continuing Education Providers.

61G15-23.002 – Seals Acceptable to the Board.

61G15-23.004 – Procedures for Digitally Signing and Sealing Electronically Transmitted Plans, Specifications, Reports or Other Documents.

61G15-23.005 – Procedures for Electronically Signing and Sealing Electronically Transmitted Plans, Specifications, Reports or Other Documents.

61G15-30.001 – Purpose.

1 61G19 – Building Code Administrators and Inspectors Board

2 • 61G19-1.009 – Definitions.

3 61G19-6.017 – Residential Inspector Certification.

4 61G19-6.0036 – Application for Certification Review Procedure.

5 61G19-7.001 – Board Approved Cross-Training Programs as Alternative Eligibility Requirement for
6 Examination.

7 61G19-9.001 - Continuing Education for Biennial Renewal.

8 61G19-9.004 – Approval of Courses.

9 61G19-9.0045 – Requirements for Interactive Distance Learning Courses.

10 11 **61G1 – Board of Architects and Interior Designers**

12 13 **61G1-12.001 Grounds for Disciplinary Proceedings.**

14
15 (2) As provided in Sections 481.225(1)(f) and 481.2251(1)(d), F.S., an architect or **registered** interior
16 designer, ~~firm~~, or **qualified** business holding a certificate of authorization **organization** shall not
17 “advertise goods or services in a manner which is fraudulent, false, deceptive, or misleading in form or
18 content.” A false, fraudulent, misleading, or deceptive statement or claim shall include without limitation:

19 (e) A falsification or misrepresentation of the extent of an architect’s or **registered** interior designer’s
20 education, training or experience to any person or to the public at large, tending to establish or imply
21 qualifications for selection for architectural or **registered** interior design employment, advancement, or
22 professional engagement. An architect or **registered** interior designer shall not misrepresent or
23 exaggerate his degree of responsibility in or for the subject matter of prior assignments;

24 (f) A statement or claim in any brochure or other presentation made to any person or to the public at
25 large, incident to the solicitation of an architectural or **registered** interior design employment, which
26 misrepresents pertinent facts concerning an architect’s or **registered** interior designer’s past employment
27 or work, with the intent and purpose of enhancing his qualifications.

28 (3) An architect, **registered** interior designer, corporation or partnership shall not practice architecture or
29 registered interior design under an assumed, fictitious or corporate name that is misleading as to the
30 identity, responsibility, or status of those practicing thereunder or is otherwise false, fraudulent,
31 misleading or deceptive within the meaning of subsection (2).

32 (4) An architect, firm, or **qualified** business holding a certificate of authorization **organization** may not be
33 negligent in the practice of architecture. The term negligence is defined as the failure, by an architect, to
34 exercise due care to conform to acceptable standards of architectural practice in such a manner as to be
35 detrimental to a client or to the public at large.

36 (6) An architect, ~~firm~~, or **qualified** business holding a certificate of authorization **organization** shall not
37 commit misconduct in the practice of architecture. Misconduct in the practice of architecture shall include
38 but not be limited to:

39 (k) Use of an architect’s name or ~~firm~~ **qualified business organization** in a business venture with any
40 person or ~~firm~~ **business organization** which he knows or has reason to believe is engaging in a
41 fraudulent or dishonest nature.

42

61G1-12.005 Citations

(3) The following violations with accompanying fines may be disposed of by citation:

Violation	Fine
(b) Firm practicing without a certificate of authorization (Section 481.219, F.S.)	\$500.00 fine for up to 5 years unauthorized practice. \$750.00 fine for 5 years up to 10 years. (Penalty requires firm to obtain certificate of authorization or cease practice.
(e) (b) Failure of individual or firm to include either the firm's Failure of individual qualified business organization to include their certificate of registration number (as other advertising medium) (Section 481.221(8), F.S. and "newspaper, paragraph 61G111.013(10)(a), F.A.C.)	\$250.00 fine and must comply with Section 481.221(8), F.S.

61G1-12.007 Notice of Non-compliance

(3) Practicing on a delinquent certificate of authorization in violation of Section 455.271, F.S., for 120 days or less;

~~(4)~~ (3) Failure to include the individual's or firm's **the qualified business organization's** certificate number in any newspaper, telephone directory, or other advertising medium in violation of Section 481.221(10), F.S.;

(6) For the 2013-2014 reporting cycle, an architect's failure to complete 24 hours of required continuing education by December 31, 2014, in violation of Section 481.215(3), F.S., and Rule 61G1-24.002, F.A.C., where the number of continuing education hours completed during the period January 1, 2013, to February 28, 2015, is 24.

61G1-17.001 Professional Fees and Penalties for Architects

The following fees and penalties are hereby adopted by the Board:

(1) The fee for licensure by initial examination shall be ~~\$60.00~~ **35.00**.

(2) The biennial renewal fee for individuals electing active status shall be ~~\$125.00~~.

(3) The application fee for a Certificate of Authorization by a corporation or partnership shall be \$100.00.

(4) The biennial renewal fee for a Certificate of Authorization shall be \$125.00.

~~(5)~~ (3) The fee for licensure by endorsement shall be as follows:

- (a) For those individuals holding Council Certification (blue cover) from the National Council of Architecture Registration Boards (NCARB) ~~\$90.00~~ **65.00**.
- (b) For all other applicants ~~\$200.00~~ **175.00**.

~~(6)~~ (4) The fee to reactivate an inactive status license (at the normal biennial renewal time) shall be ~~\$100.00~~ **75.00**.

~~(7)~~ (5) Any applicant who takes the professional examination may, upon payment of ~~\$75.00~~ **50.00** to the Department and any fees required by NCARB, and at a mutually convenient time, examine her or his answers or questions, papers, grades and grading key upon such terms and conditions as set forth by the Department of Business and Professional Regulation. All such reviews shall be subject to NCARB and Department testing security requirements in order to insure the integrity of the examination.

~~(11)~~ (9) The fee to renew an inactive status license shall be ~~\$75.00~~ **50.00**.

~~(12)~~ (10) The application fee to reinstate a void license is ~~\$500.00~~ **475.00**.

1 **61G1-24.001 Continuing Education for Architects.**

2
3 (1) Each architect in Florida shall complete a minimum of 24 hours of continuing professional education,
4 ***in health, safety and welfare related courses***, per biennial period, as further defined in subsection (32)
5 below. This requirement shall be met through either:

6 (a) Programs approved by the Board, provided that a minimum of two (2) of the 24 required hours must
7 be obtained by completing an approved provider's specialized or advanced course(s), ~~approved by the~~
8 ~~board and Florida Building Commission~~, on the Florida Building Code, relating to the architect's
9 respective area of practice; or

10 (b) Submission of proof of compliance with the continuing education requirements of another state in
11 which the architect is licensed, provided that the requirements of the other state equal or exceed the
12 completion of 24 hours in a two year period, be that the education build upon the basic knowledge of
13 architecture, and require that a minimum of two (2) of the 24 required hours be obtained by completing
14 specialized or advanced course(s), approved by the board ~~and Florida Building Commission~~, on the
15 Florida Building Code, relating to the architect's respective area of practice.

16 (2) Architects licensed after February 28, 1995, will begin their first two-year reporting cycle on
17 January 1 of the year that the architect is licensed if that year is an odd-numbered year or January 1
18 of the next odd-numbered year if the architect is licensed in an even-numbered year.

19
20 **61G4 – Construction Industry Licensing Board (CILB)**

21
22 **61G4-17.002 Aggravating and Mitigating Circumstances. (New)**

23
24 ***Circumstances which may be considered for the purposes of mitigation or aggravation of penalty***
25 ***shall include the following:***

26 ***(1) Monetary or other damage to the licensee's customer, in any way associated with the violation,***
27 ***which damage the licensee has not relieved, as of the time the penalty is to be assessed. (This***
28 ***provision shall not be given effect to the extent it would contravene federal bankruptcy law.)***

29 ***(2) Actual job-site violations of building codes, or conditions exhibiting gross negligence,***
30 ***incompetence, or misconduct by the licensee, which have not been corrected as of the time the***
31 ***penalty is being assessed.***

32 ***(3) The danger to the public.***

33 ***(4) The number of complaints filed against the licensee.***

34 ***(5) The length of time the licensee has practiced.***

35 ***(6) The actual damage, physical, economic, or otherwise, caused by the licensee's violation.***

36 ***(7) The deterrent effect of the penalty imposed.***

37 ***(8) The effect of the penalty upon the licensee's livelihood.***

38 ***(9) Any efforts at rehabilitation.***

39 ***(10) Any other mitigating circumstances.***

40
41 **61G6 – Electrical Contractors Licensing Board (ECLB)**

42
43 **61G6-7.001 Specialty Electrical Contractors**

44
45 (6) Two-Way Radio Communications Enhancement Systems Specialty. The scope of
46 certification of a two-way radio communications enhancement system specialty contractor includes
47 the installation, repair, alteration, addition to, testing, replacement and design of electrical wiring,
48 fixtures, antennae, amplifiers, appliances, apparatus, raceways, conduit, or any part thereof, ***not to***
49 ***exceed 98 volts (RMS)***, for two-way radio communications enhancement systems in all structures.
50 The scope of this license does not include the connection of a system to a fire alarm panel. The scope
51 of work of this license may also be performed by the following license categories: Certified
52 Unlimited Electrical Contractor; Certified Alarm System Contractor I; and Registered Alarm System

1 Contractor I.

2
3 **61G6-9.002 Criteria for Continuing Education for Reactivation of License**

4
5 (2)(a)1. Business courses include: (A) Bidding a Job, (B) Maintaining Cash Flow, (C)
6 Interpretation of Contracts and Agreements Purchasing Control, (D) Contract
7 Scheduling, (E) Obtaining Insurance and Bonding, (F) Complying with Contracting
8 Laws and Rules, **including Chapters 455 and 489, Part II, F.S. and rule Division 61G6, F.A.C.**, (G)
9 Personnel Management, (H) Complying with Payroll and Sales Tax Laws, (I)
10 Interpretation of Financial Statements and Reports, and (J) Management Accounting.

11
12 (a)2. Technical courses include: (A) General Theory and Electrical Principles, (B) Plan and
13 Specification Reading and Interpretation, (C) Wiring and Protection, (D) Wiring Methods and
14 Materials, (E) Special Occupancies and Situations, (F) Life Safety and Americans with Disabilities Act,
15 (G) Electrical Signs, Outline Lighting, and Structural Considerations, (H) Alarms/Limited Energy, and (I)
16 Estimating, **(J) False Alarm Prevention**, and (K) Advanced Building Code modules.

17
18
19 **61G6-9.003 Definitions.**

20
21 (7) "Interactive Distance Education Course" means a continuing education course, the delivery of which
22 is done via the internet and/or other interactive electronic media. Such offerings or courses shall be
23 interactive, providing for the interchange of information between the student, the teacher, and
24 **competency-based learning course presented through live, synchronous technology or through**
25 **pre-recorded video coupled with a means for course attendees to ask questions of the**
26 **instructor(s) and receive responses in a timely manner. Such courses may be presented through**
27 **video conferencing technologies or interactive computer-based applications. Courses** shall
28 provide for registration, evaluation, monitoring, and verification of continuing education, as well as require
29 a multiple-choice test at the end of the session with a minimum passing score of 75%.

30
31 **61G15 – Board of Professional Engineers**

32
33 **61G15-18.011 Definitions.**

34
35 (8) No later than December 31, 2024, the Board shall review and consider amendment, modifications, or
36 repeal of this rule if review determines this rule creates barriers to entry for private business competition,
37 is duplicative, outdated, obsolete, overly burdensome, or imposes excessive costs.

38
39 **61G15-18.012 Other Board Business for Which Compensation is Allowed.**

40
41 The following are considered to be other business involving the Board as required by Section 455.207(4),
42 F.S.:

43 (3) Where a Board member has been requested by the Secretary of the Department, **the Executive**
44 **Office of the Governor, or the Chair of a Legislative Committee** to participate in a meeting **or**
45 **hearing**.

46 (5) Any telephone conference calls.

47 ~~(6)~~ (5) All activity of Board members, if authorized by the Board, when grading, proctoring, or reviewing
48 examinations given by FEMC.

49 ~~(7)~~ (6) All participation in Board authorized meetings with professional ~~associates~~
50 **associations** of which the Board is a member or invitee. This would include all meetings of national
51 associations of ~~registration Boards~~ of which the Board is a member as well as Board authorized
52 participation in meetings of national or professional associations or organizations involved in educating,
53 regulating, or reviewing the profession over which the Board has statutory authority.

54 (8) No later than December 31, 2024, the Board shall review and consider amendment, modification, or
55 repeal of this rule if review determines this rule creates barriers to entry for private business competition,
56 is duplicative, outdated, obsolete, overly burdensome, or imposes excessive costs.

1
2 **61G15-19.0051 Notice of Noncompliance.**

3
4 (1)(f) Failure to produce documentation of compliance with continuing education requirements within sixty
5 (60) days of notification to the licensee of the requirement to produce said documentation – **first offense**
6 – paragraph 61G15-22.006(2)(b), F.A.C.

7 (1)(h) Failure to properly utilize a Title Block as required by paragraph 61G15-23.001(4)(a), F.A.C.

8 (3) No later than December 31, 2024, the Board shall review and consider amendment, modification, or
9 repeal of this rule if review determines this rule creates barriers to entry for private business competition,
10 is duplicative, outdated, obsolete, overly burdensome, or imposes excessive costs.

11
12 **61G15-20.007 Educational Requirements for Applicants without EAC/ABET Accredited**
13 **Engineering Degrees.**

14
15 (1)(b) 9 college semester credit hours in general education. Examples of acceptable courses include
16 philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology,
17 economics, (micro and macro), professional ethics, and social responsibility. Examples of other general
18 education courses deemed acceptable include management (such as organizational behavior),
19 accounting, written and oral communications, business, and law. No more than 6 credit hours can come
20 from courses in management, accounting, business, or law. Courses in engineering economics,
21 engineering management, construction management, systems engineering/analysis, production, or
22 industrial engineering/management will not be counted. Up to 6 credit hours of languages other than the
23 applicant's native language are acceptable for credit. English and foreign language courses in literature
24 and civilization may be considered in this area. Courses that instill cultural values are acceptable, ~~while~~
25 ~~routine exercises of personal craft are not.~~ Other means towards satisfying the general education
26 requirement are as follows: Earning a doctoral degree is equivalent to 10 credit hours if the degree is from
27 a college or university in the U.S. that has an EAC/ABET-accredited engineering program in a related
28 discipline at the baccalaureate level.

29 (c) 45 college semester credit hours of engineering science and engineering design taught within the
30 college or by the faculty of engineering. ~~Courses in this area shall have their roots in mathematics and~~
31 ~~basic sciences but carry knowledge further toward creative application of engineering principles.~~
32 Examples of approved engineering science courses are mechanics, thermodynamics, heat transfer,
33 electrical and electronic circuits, materials science, transport phenomena, engineering economics, and
34 computer science (other than computer programming skills). Courses in engineering design stress the
35 establishment of objectives and criteria, synthesis, analysis, construction, testing, and evaluation.
36 Graduate-level engineering courses may be included to fulfill curricular requirements in this area. A
37 maximum of six credit hours will be granted for thesis, dissertation, special topics and independent study
38 at any level. Graphics, surveying, or engineering technology courses will not be considered to meet
39 engineering science and design requirements. Cooperative training, practicums, internships, and
40 continuing education activities will not receive credit.

41
42 **61G15-22.009 Exemptions from Continuing Education Requirements.**

- 43
- 44 • 1) Licensees who have ~~achieved licensure by examination,~~ passed a Principles and Practices of
45 Engineering Examination and become licensed in Florida during the current biennium shall be
46 exempt from continuing education requirements for ~~their first renewal period. This exemption~~
47 ~~does not apply to licensees by endorsement, licensees who directly registered for examination~~
48 ~~with NCEES, or to licensees upon reinstatement of previously void licenses.~~ that same biennium.
49 This exemption does not apply to the requirement of Section 471.0195, F.S., regarding Advanced
50 Building Code training.
 - 51 • (4) Any licensee who is a member of the United States Armed Forces and maintains Florida
52 licensure pursuant to Section 455.02, F.S.
 - 53 • (6) No later than December 31, 2024, the Board shall review and consider amendment,
54 modification, or repeal of this rule if review determines this rule creates barriers to entry for
55 private business competition, is duplicative, outdated, obsolete, overly burdensome, or imposes
56 excessive costs.

61G15-23.002 Seals Acceptable to the Board.

- (2) Wet Seals, Embossing Seals and Digitally Created Seals shall be a minimum of 1-7/8 inches in diameter and shall be of a design similar to those set forth in subsections (a), (b) and (c) below. **When utilizing Digitally Created Seals, the requirement of a minimum diameter of 1-7/8 inches shall be met when the image is represented in native (unreduced) document size.**

61G15-30.001 Purpose.

- (1) This responsibility rules shall apply to every person holding a ~~certificate of registration~~ **license** as a professional engineer, ~~every certified engineer intern~~, and every holder of a ~~certificate of authorization~~ **qualified engineering business organization**, as appropriate. A professional engineer's practices, education, training, experience, qualifications, technical competence, conduct, and responsibilities in connection with his authorized engineering practice, services, and creative work are subject to regulation solely by the Board of professional engineers, the courts, and local jurisdictions.
- ~~Specific~~(2) No later than December 31, 2024, the Board shall review and consider amendment, modification, or repeal of this rule if review determines this rule creates barriers to entry for private business competition, is duplicative, outdated, obsolete, overly burdensome, or imposes excessive costs.

61G19 – Building Code Administrators and Inspectors Board**61G19-1.009 Definitions.**

- (14) One- and two-family dwelling inspector” means an individual approved for standard certification by the Board prior to July 1, 2020, who is qualified to inspect and determine that one- and two-family dwelling and accessory structures are constructed in accordance with the provisions of the Florida Building Code/Residential.
- (15) “Residential Inspector” means a person approved for and has passed an examination administered by the International Code Council for this category after July 1, 2020, who is qualified to inspect and determine that one-family, two family, or three - family residences, and their accessory structures are constructed in accordance with the provisions of the governing; building, plumbing, mechanical, accessibility, and electrical codes.

61G19-6.017 ~~One- and Two-Family Dwelling Residential Inspector Certification.~~

- (1) Provisional certification may be obtained in the category of ~~one and two family dwelling~~ **Residential** inspector, provided that the licensee's supervisor **Building Code Administrator of the jurisdiction** holds standard certification pursuant to Chapter 468, Part XII, F.S.
- (2)(g) Standard certification as an inspector in any of the categories listed in Section 468.603(6), F.S., plus satisfactory completion of a ~~one- and two-family~~ **Residential** inspector training program of not less than 500 hours.
- (2)(h) Standard certificate/license as a fire safety inspector issued pursuant to Chapter 633, F.S. with ~~five years~~ **four years** verifiable full-time experience conducting fire safety inspections plus satisfactory completion of a ~~one- and two-family~~ **Residential** inspector training program of not less than ~~800~~ **500** hours.

61G19-6.0036 Application for Certification Review Procedure.

- (1) Applications which are determined to be complete will first be reviewed by the Department. If the application clearly demonstrates qualification for the certification sought **by holding an equivalent experience standard certification issued by the Board**, except as provided in subsection (2), the Department shall preliminarily approve the application. A list of all applications preliminarily approved by the Department will be distributed to the Board on a monthly basis. Within ten (10) calendar days after distribution of the list of preliminarily approved applications, ~~any member of the application review committee of the Board~~ **Board member** may request that

any application on the list be submitted to the Board for review in accordance with this rule. All applications on the preliminarily approved list not selected for review shall be approved by the Department.

- (3) Applications referred to the Board will first be reviewed by the **Board Members tasked with the Application Review Committee**. The Application Review Committee shall consist of **be conducted by** a minimum of three (3) Board members who are licensed building code administrators, inspectors, or plans examiners, **architects, engineers, or contractors**, appointed by the Chair. The Chair, if otherwise qualified, may ~~be a member of~~ **also perform** the Application Review Committee.
- (4) The **Board members performing the** Application Review Committee shall review all applications for certification not otherwise approved and shall determine by majority vote whether to recommend approval or denial of each such application to the Board.
- (5) The Application Review Committee's recommendations **of the Board members performing the Application Review** shall be provided to the Board, who shall then act on the Application Review Committee's recommendations at the next Board meeting **for final action**. Any Board member may request that any application for certification be pulled for discussion and/or individual determination by the Board.

61G19-7.001 Board Approved Cross -Training Programs as Alternative Eligibility Requirement for Examination

- (1) Applicants who ~~possess a minimum of 3 years' verifiable full-time experience in inspection or plans review and~~ currently hold a standard certificate issued by the board as a building, ~~one and two family dwelling~~ **Residential**, electrical, mechanical, or plumbing inspector, or a fire safety inspector holding a certificate/license issued pursuant to Chapter 633, F.S., **with a minimum of 3 years' verifiable full-time experience in fire safety inspection or fire safety plan review**, and who seek an additional category of inspector certification shall satisfactorily complete an inspector training program of ~~not less than~~ **that provides at least 100 hours but no more** than 200 hours **of cross-training** in the certification category sought.
- (2) Applicants who ~~possess a minimum of 3 years' verifiable full-time experience in inspection or plans review and~~ currently hold a standard certificate issued by the board as a building, electrical, mechanical, or plumbing plans examiner ~~or a~~ fire safety inspector certificate/license, **or fire safety plan reviewer** issued pursuant to Chapter 633, F.S., **with a minimum of 3 years' verifiable full-time experience in fire safety inspection or fire safety plan review**, and who seek an additional certification in one of these categories shall satisfactorily complete a plans examiner training program of **that provides at least 100 hours but not less more** than 200 hours of **cross-training** in the certification category sought.
- (3) Applicants currently holding a standard certificate as a building, electrical, mechanical, or plumbing inspector who seek certification as a ~~one and two family dwelling~~ **Residential** Inspector shall satisfactorily complete a ~~one and two family~~ **Residential Inspector** training program of not less than 500 hours.
- (4) Applicants currently holding a standard certificate/license as a firesafety inspector issued pursuant to Chapter 633, F.S., who seek certification as a ~~one and two family dwelling~~ **Residential** inspector shall satisfactorily complete a ~~one and two family~~ **Residential Inspector** training program of not less than 800 hours.

61G19-9.001 Continuing Education for Biennial Renewal

- (3) "Interactive Distance Learning Hour" means ~~sixty~~ **fifty** minutes of instruction presented in an alternative non-classroom interactive distance learning setting, exclusive of any breaks, recesses, or other time not spent in instruction.
- (4) A Webinar is an internet-based seminar, presentation, lecture or workshop transmitted over the internet using video conferencing software providing the ability for the teacher and students to interact where the teacher can give, receive and discuss information with the students in real time and evaluate monitor and verify continuing education.

1
2
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4
5

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Chapter 5

UNDERSTANDING PRODUCT APPROVAL

2021 - 2023

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2
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6 Part 2 – Local/State PA Review Process
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8

9 **PART 1 – ORGANIZATION**

10
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12 **Professional Regulation - Technical and Product Approval Team**

13
14 **Mo Madani – Technical Director - mo.madani@myfloridalicense.com - 850-717-1825.**

15
16 **Zubeyde Binici –Product Approval Lead Staff – zubeyde.binici@myfloridalicense.com - 850-717-1837.**

17
18 **Marlita Peters – marlita.peters@myfloridalicense.com - 850-717-1831.**

19
20 **Norman Bellamy – norman.bellamy@myfloridalicense.com - 850-717-1834.**

21
22 **Joe Bigelow – joe.bigelow@myfloridalicense.com - 850-717-1829.**

23
24 **Robert Benbow – robert.benbow@myfloridalicense.com - 850-717-1828.**

25
26 **Chip Sellers – chip.sellers@myfloridalicense.com - 850-717-1827.**

27
28 **Florida Building Commission**

29
30 Located within Florida Department of Business and Professional Regulation.

31 Composed of 27 members – appointed by the governor.

32 Architects, engineers, contractors, fire protection, Building Officials, Product manufacturers, insurance
33 industry representatives, public education representatives, green building representatives.

34 Chair – Mr. Richard Browdy, President, Browdy & Browdy Inc., Jacksonville, FL

35 Meets every 6 weeks – Across the state.
36

37 **Commission Organization**

38
39 Florida Building Commission - Appointed by Governor

40
41 Program Oversight Committee (POC) – Comprised of Commissioners

42 Product Approval POC

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7
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9 Code Coordination and Implementation

- 10 • Hurricane Research
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12
13 **TAC Chairpersons** – (Chairs Only)

14 15 **PART 2 – LOCAL/STATE PRODUCT APPROVAL REVIEW PROCESS**

16 17 **The Overall Product Approval System**

18
19 Product approval in Florida is a 3 three path process
20 Each path is defined by Florida Statute and/or contained in the Building Code Chapter 1
21 We will look at each step to view the options.

22 23 **The Guiding Statute**

24
25 Florida Statute 553 establishes the Florida Building Commission, guides the Florida Building Code, and
26 provides the overall guidance.

27
28 The areas that guide this process are:
29 553.841.
30 553.842.
31 Florida Building Code Chapter 1 – Administration.

32 33 **The First Step**

34
35 The Building Official has the authority to approve products that he/she feels meet the intent and
36 requirements of the Code .

37 38 **[A]104.9 Approved materials and equipment.**

39
40 Materials, equipment, and devices approved by the building official shall be constructed and installed in
41 accordance with such approval.

42 43 **[A]104.9.1 Used materials and equipment.**

44
45 The use of used materials that meet the requirements of this code for new materials is permitted. Used
46 equipment and devices shall not be reused unless approved by the building official.

47 48 **The Building Official Approval**

49
50 If the Building Official is comfortable with the information provided, the BO may approve the use.

51
52 If the Building Official is not familiar with the product, is not comfortable with the design or calculations,
53 then

54
55 The Building Official can go to Step 2 and/ or 3.
56
57

1 The Second Step

2
3 The Building Official can request information documenting the product, the design, test information or
4 other information related to the product.

5
6 This information may be a test report from a recognized test lab.

7
8 These reports are items such as a Miami Dade Notice of Acceptance (NOA), an ICC Evaluation Services
9 (ICC ES) report, a Texas Department of Insurance (TDI) report, or

10
11 A rational Analysis of a previous or similar report about the product and the specific installation from an
12 expert, such as a Professional Engineer.

13
14 Most Building Officials are not experts in every field.

15
16 Most Building Officials are not practicing engineers.

17
18 Documentation and verification of products and their performance is generally required.

19
20 This information is readily available from the various testing entities and manufacturers.

21
22 Let us look at the statutory wording.

23 24 **553.8425 - Local Product Approval.**

- 25
26 1) For local product approval, products or systems of construction shall demonstrate compliance with
27 the structural windload requirements of the Florida Building Code through one of the following
28 methods:
29
- 30 a) A certification mark, listing, or label from a commission-approved certification agency indicating
31 that the product complies with the code;
 - 32 b) A test report from a commission-approved testing laboratory indicating that the product tested
33 complies with the code;
 - 34 c) A product-evaluation report based upon testing, comparative or rational analysis, or a
35 combination thereof, from a commission-approved product evaluation entity which indicates that
36 the product evaluated complies with the code;
 - 37 d) A product-evaluation report or certification based upon testing or comparative or rational analysis,
38 or a combination thereof, developed and signed and sealed by a Florida professional engineer or
39 Florida registered architect, which indicates that the product complies with the code;
 - 40 e) A statewide product approval issued by the Florida Building Commission; or
 - 41 f) Designation of compliance with a prescriptive, material standard adopted by the commission by
42 rule under s. 553.842(15).
- 43
44
45
46
47
48

49 The Third Step

50 51 **If Other Options Are Not Available - The third step is the Florida Product Approval System.**

52
53 This was established to have a central clearing house of products that meet the Florida Building Code for
54 specific installations.

55
56 An Important Note!

57
58 No matter which system is used, just because a product has a test sheet or product approval number, the
59 use of that product must still meet the specific criteria of the installation.

1 This relates to design pressures, impact rating, fire resistance and attachment methods applicable to the
2 installation.

3 4 **553.842 - Product evaluation and approval**

- 5
6 1) The commission shall adopt rules under ss. 120.536(1) and 120.54 to develop and implement a
7 product evaluation and approval system that applies statewide to operate in coordination with the
8 Florida Building Code. The commission may enter into contracts to provide for administration of the
9 product evaluation and approval system. The commission's rules and any applicable contract may
10 provide that the payment of fees related to approvals be made directly to the administrator. Any fee
11 paid by a product manufacturer shall be used only for funding the product evaluation and approval
12 system. The product evaluation and approval system shall provide:
13
14 a) Appropriate promotion of innovation and new technologies.
15
16 b) Processing submittals of products from manufacturers in a timely manner.
17
18 c) Independent, third-party qualified and accredited testing and laboratory facilities, product
19 evaluation entities, quality assurance agencies, certification agencies, and validation entities.
20
21 d) An easily accessible product acceptance list to entities subject to the Florida Building Code.
22
23 e) Development of stringent but reasonable testing criteria based upon existing consensus
24 standards, when available, for products.
25
26 f) Long-term approvals, where feasible. State and local approvals will be valid until the
27 requirements of the code on which the approval is based change, the product changes in a
28 manner affecting its performance as required by the code, or the approval is revoked. However,
29 the commission may authorize by rule editorial revisions to approvals and charge a fee as
30 provided in this section.
31
32 g) Criteria for revocation of a product approval.
33
34 h) Cost-effectiveness.

35
36 Parenthesis 2 tells us that this system is designed to rely on national and international consensus
37 standards. This leads us back to the existing approval systems and to the published reports.

- 38
39 2) The product evaluation and approval system shall rely on national and international consensus
40 standards, whenever adopted by the Florida Building Code, for demonstrating compliance with
41 code standards. Other standards which meet or exceed established state requirements shall also
42 be considered.
43

44 **The Commission Operation**

45
46 In order to apply the law, the Commission established a rule for the application of the requirements .

47
48 An important note to be aware of is the **Florida Product Approval System** applies only to the envelope
49 and structural frame. No interior pieces or parts!

State Product Approval – Rule

Administrator DBPR

RULE 61G20-3 F.A.C.

This rule applies to approval of products and systems which comprise the building envelope and structural frame, for compliance with the structural requirements of the Florida Building Code.

Four Methods for State Approval

METHOD	APPROVING AUTHORITY
Certification Method	DBPR
Evaluation Report From an Evaluation Entity 1. The National Evaluation Service 2. Miami-Dade 3. The International Association of Plumbing and Mechanical Officials Evaluation Service (IAPMO)	DBPR
Evaluation Report From a Florida Licensed Architect or a Florida Professional Engineer	FLORIDA BUILDING COMMISSION
Test Report	FLORIDA BUILDING COMMISSION

PART 3 - INTERPRETATION - APPLICATION REVIEW PROCESS

Two Review Processes

- Three Months
- Test Report.
- Evaluation report (from an engineer).
- Ten (10) days
- Certification
- Evaluation report (For Evaluation entities other than engineer or architect)

2014 FBC PA Statistics to Date

- 5360 approved applications.
- 22,814+ approved products.
- 128 approved entities.

Many new products have now been added and each needs to be reevaluated every Code change.

Florida Building Code 8th Edition (2023)

The Building Code is updated every 3 years. Product evaluations must be updated for continued compliance.

- There are three ways to have your product comply with the new code:
- Self-Affirmation of existing application.
 - Revision of existing application.
 - New application.

Self-Affirmation FBC 2020**Application Self Affirmation**

Upon review of the new Code, if the standards and restrictions in the new Code applicable to your product have not changed, you can “self-affirm” that your product complies with applicable standards of the new Code.

Please contact our offices before initiating a self-affirmation.

Self-Affirmations cost \$100.

61G20-3.007 Product Approval by the Commission.

As part of application for self-affirmation, if the evaluation report refers to the previous edition of the Code, the manufacturer of the approved product shall submit a statement from an approved evaluation or validation entity that the product complies with the subsequent code version via an attachment uploaded and submitted through the BCIS.

Application Revision FBC 2020.

If the standards or restrictions pertaining to your product in the 2020 Code have changed, then a product revision application must be submitted.

New evidence such as a test report or an evaluation report demonstrating compliance must also be submitted.

Revisions cost \$500.

Florida Building Code**7th Edition (2020)**

The 2020 Florida Building Code is available online at www.floridabuilding.org.
Effective on December 31, 2020.

8th Edition (2023)

The 2023 Florida Building Code is available online at www.floridabuilding.org.
Effective on December 31, 2023.



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Timeline for 2021 (application for submittal and Review)



POC Meeting Date	Meeting Date 2024 Product Approval Meetings:
COMMISSION MEETING: FEBRUARY 13, 2024	
<p>Feb 5 10:00 A.M.</p>	<p>Dec 28- Midnight – Deadline for Submittal/Validation Deadline Jan 4- Midnight – Completion Deadline Jan 11 – Report Posted for public comment (Includes DBPR Approvals) Product Approval Applications For Public Comment DBPR Applications For Public Comment Jan 18- NOON -Deadline for public comments to be mailed to the Administrator Jan 25 – Final Report Posted (Includes DBPR Approvals) Product Approval Applications WITH Public Comment DBPR Applications WITH Public Comment</p>
COMMISSION MEETING: APRIL 16, 2024	
<p>April 4, 10:00 A.M.</p>	<p>Feb 29- Midnight – Deadline for Submittal/Validation Deadline Mar 7- Midnight – Completion Deadline Mar 14 – Report Posted for public comment (Includes DBPR Approvals) Product Approval Applications For Public Comment DBPR Applications For Public Comment Mar21- NOON -Deadline for public comments to be mailed to the Administrator Mar 28 – Final Report Posted (Includes DBPR Approvals) Product Approval Applications WITH Public Comment DBPR Applications WITH Public Comment</p>
COMMISSION MEETING: JUNE 18, 2024	
<p>June 6 10:00 A.M.</p>	<p>May 2- Midnight – Deadline for Submittal/Validation Deadline May 9- Midnight – Completion Deadline May 16 – Report Posted for public comment (Includes DBPR Approvals) Product Approval Applications For Public Comment DBPR Applications For Public Comment May 23- NOON -Deadline for public comments to be mailed to the Administrator May 29 – Final Report Posted (Includes DBPR Approvals) Product Approval Applications WITH Public Comment DBPR Applications WITH Public Comment</p>
COMMISSION MEETING: AUGUST 13, 2024	
<p>Aug 5 10:00 A.M.</p>	<p>June 26- Midnight – Deadline for Submittal/Validation Deadline July 3 – Midnight – Completion Deadline July 11 – Report Posted for public comment (Includes DBPR Approvals) Product Approval Applications For Public Comment DBPR Applications For Public Comment July 18- NOON -Deadline for public comments to be mailed to the Administrator July 24 – Final Report Posted (Includes DBPR Approvals) Product Approval Applications WITH Public Comment DBPR Applications WITH Public Comment</p>

8

COMMISSION MEETING: OCTOBER 15, 2024	
Oct 3, 10:00 A.M.	Aug 29- Midnight – Deadline for Submittal/Validation Deadline Sept 5- Midnight – Completion Deadline Sept 12 – Report Posted for public comment (Includes DBPR Approvals) Product Approval Applications For Public Comment DBPR Applications For Public Comment Sept 19 -NOON -Deadline for public comments to be mailed to the Administrator Sept 25 – Final Report Posted (Includes DBPR Approvals) Product Approval Applications WITH Public Comment DBPR Applications WITH Public Comment
COMMISSION MEETING: DECEMBER 10, 2024	
Nov 22 10:00 A.M.	Oct 24- Midnight – Deadline for Submittal/Validation Deadline Oct 30- Midnight – Completion Deadline Nov 4 – Report Posted for public comment (Includes DBPR Approvals) Product Approval Applications For Public Comment DBPR Applications For Public Comment Nov 11 -NOON -Deadline for public comments to be mailed to the Administrator Nov 14- Final Report Posted (Includes DBPR Approvals) Product Approval Applications WITH Public Comment DBPR Applications WITH Public Comment

1

FLORIDA BUILDING CODES AND EFFECTIVE DATES		
Code Edition		Effective Date
7th Edition (2020)	Original	December 31, 2020
Current Version 8th Edition (2023)	Original	December 31, 2023

2

3 **Reading A Product Approval**

4

5 Where is it from?

6

- 7 • Miami Dade Notice of Acceptance (NOA)
- 8 • International Code Council Evaluation Service (ICCES)
- 9 • Texas Department of Insurance (TDI)
- 10 • Florida Product Approval System (PA)
- 11 • Evaluation report from a Nationally Recognized Testing Laboratory (NRTL)
- 12 • Properly signed and documented Engineers Evaluation
- 13 • Other documentation acceptable to the Building Official.

13

14 Any of these are acceptable, at least outside of Miami-Dade or Broward Counties

15

16 **What Does One of These Look Like?**

17

18 They are documents, generally 8 ½ X 11 inches.

19

19 They consist of 1 to numerous pages.

20

20 It will have the name of the issuing agency

21

21 Each report has several dates

22

22 When the evaluation was performed

23

23 The type of testing

24

24 Whether the product is tested to the current code edition

25

25 Much more information

26

26 Let us look at a product approval....

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A Typical Product Approval Front Page



DBPR Home | Log In | User Registration | Hot Topics | Submit Exchange | State & Fees | Publications | Contact Us | DBPR Site Map | Links | Search

Product Approval
User: Public User

[Product Approval Menu](#) > [Product or Application Search](#) > [Application List](#) > [Application Detail](#)

<p>FL #</p> <p>Application Type</p> <p>Code Version</p> <p>Application Status</p>	<p>FL30036-R2</p> <p>Editorial Change</p> <p>2020</p> <p>Approved</p> <p>*Approved by DBPR. Approvals by DBPR shall be reviewed and ratified by the POC and/or the Commission if necessary.</p>
<p>Comments</p> <p>Archived</p>	<p><input type="checkbox"/></p>
<p>Product Manufacturer</p> <p>Address/Phone/Email</p>	<p>JELD-WEN</p> <p>3737 Lakewood Blvd Klamath Falls, OR 97601 (800) 532-1936 fbci@jeld-wen.com</p>
<p>Authorized Signature</p>	<p>Rylee Sumner Fricks fbci@jeld-wen.com</p>
<p>Technical Representative</p> <p>Address/Phone/Email</p>	<p>JELD-WEN Corporate Customer Service</p> <p>3737 Lakewood Blvd Klamath Falls, OR 97601 (800) 532-1936 customerserviceagents@jeld-wen.com</p>
<p>Quality Assurance Representative</p> <p>Address/Phone/Email</p>	
<p>Category</p> <p>Subcategory</p>	<p>Exterior Doors</p> <p>Swinging Exterior Door Assemblies</p>
<p>Compliance Method</p>	<p>Certification Mark or Listing</p>
<p>Certification Agency</p> <p>Validated By</p>	<p>Window and Door Manufacturer Association</p> <p>Window and Door Manufacturer Association</p>

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What Is Included on A Product APPROVAL?

- The manufacturer.
- Their contact information.
- The authorized representative.
- What the product is.
- Who tested and reported on the application of the product?
- The structural and wind loads that were applied.
- The various installation methods and attachment details.

Additional Information

Referenced Standard and Year (of Standard)	<u>Standard</u> AAMA/WDMA/CSA 101/TLS-2/0440	<u>Year</u> 2011
Equivalence of Product Standards Certified By		
Product Approval Method	Method 1 Option A	
Date Submitted	04/07/2021	
Date Validated	04/13/2021	
Date Pending FBC Approval		
Date Approved	04/15/2021	

Summary of Products

Go to Page: Page 1 / 2

FL #	Model, Number or Name	Description
30030.1	Silene or W-5500 Clad	In-Swing French Door with Fixed Sidelites 151-1/2" x 98-1/2"(0X0X)
<p>Limits of Use</p> <p>Approved for use in HVHZ: No</p> <p>Approved for use outside HVHZ: Yes</p> <p>Impact Resistant: No</p> <p>Design Pressure: +35/-40</p> <p>Other: Qualified Configurations: (0X0X) (0) (X) (0X) (0X) (0X) (0X0)</p>		<p>Certification Agency Certificate FL30030_R2_C_CAC_400-01-001_34.pdf</p> <p>Quality Assurance Contract Expiration Date 05/30/2029</p> <p>Installation Instructions FL30030_R2_II_Silene_Clad_Twisting_Dual_Door_Installs (151x99)_7-18-19.pdf</p> <p>Verified By: Window and Door Manufacturer Association Created by Independent Third Party:</p> <p>Evaluation Reports Created by Independent Third Party:</p>

21

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2

Let us Look at A Specific Product

Referenced Standard and Year (of Standard)	Standard AAMA/WDMA/CSA 101/1.S.2/A440	Year 2011
Equivalence of Product Standards Certified By		
Product Approval Method	Method 1 Option A	
Date Submitted	07/31/2019	
Date Validated	08/02/2019	
Date Pending FBC Approval		
Date Approved	08/09/2019	

FL #	Model, Number or Name	Description
30030.1	Siteline or W-5500 Clad	In-Swing French Door with Fixed Sidelites 151-1/2" x 98-1/2"(OXXO)
Limits of Use Approved for use in HVHZ: No Approved for use outside HVHZ: Yes Impact Resistant: No Design Pressure: +35/-40 Other: Qualified Configurations: (OXXO) (O) (X) (OX) (XO) (XX) (OXXO)		Certification Agency Certificate FL30030_R0_C_CAC_406-H-801_34.pdf Quality Assurance Contract Expiration Date 05/30/2029 Installation Instructions FL30030_R0_I1_Siteline Clad Inswing Quad Door Installs (151x99)_7-18-19.pdf Verified By: Window and Door Manufacturer Association Created by Independent Third Party. Evaluation Reports Created by Independent Third Party:
30030.2	Siteline or W-5500 Clad	In-Swing French Door with Venting Sidelites 108-1/2" x 98-1/2" (OXXX)
Limits of Use Approved for use in HVHZ: No		Certification Agency Certificate FL30030_R0_C_CAC_406-H-801_36.pdf

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TYPICAL ELEVATION WITH FASTENER SPACING

**FRAME SECTION (TYP)
VERTICAL SECTION**

NAILFIN INSTALLATION

**FRAME JAMB SECTION (TYP)
HORIZONTAL SECTION**

MAXIMUM FRAME	DP	IMPACT
150 1/2 x 98 1/2	+35/-40	NO

Installation Notes:

- Seal flange/frame to substrate. Sill shall be set on a continuous serpentine bead of structural grade silicone caulk when no fastener is used to anchor the sill (typical).
- Use #8 PH or greater fastener through the nailing flange with sufficient length to penetrate a minimum of 1 1/2" into the wood framing. For 2x wood frame substrate (min. S.G. = 0.42)
- Host structure (wood buck, masonry, steel) to be designed and anchored to properly transfer all loads to the structure. The host structure is the responsibility of the architect or engineer of record for the project of installation.

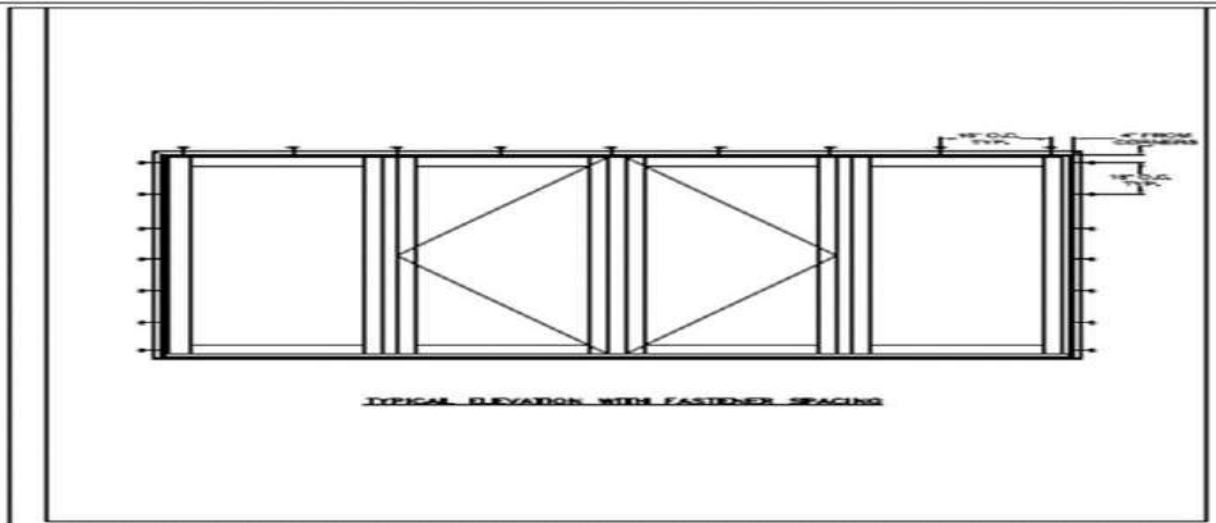
General Notes:

- The product shown herein is designed, tested and manufactured to comply with the wind load criteria of the adopted International Building Code (IBC), the International Residential Code (IRC), the current Florida Building Code (FBC) and the industry requirement for the stated conditions.
- All glazing shall conform to ASTM E1300.
- Use structural or composite shims where required.

<p><small>This schedule addresses only the fasteners required to anchor the unit to achieve the rated design pressure and impact performance (where applicable) up to the size limitations noted. It is not intended as a guide to the installation process and does not address the sealing considerations that may arise in different wall conditions. For the complete installation procedure, see the instructions packaged with the unit or go to www.jeld-wen.com.</small></p> <p><small>DISCLAIMER: This drawing and its contents are confidential and are not to be reproduced or copied in whole or in part or used or disclosed to others except as authorized by JELD-WEN Inc.</small></p>	<p>DATE: 07/18/2019</p> <p>SCALE: NTS</p> <p>TITLE: Siteline Clad Inswing Quad Patio Door</p> <p>RECORD NO: D011490</p> <p>REPORT NO: NCTL-310-19-058 E0A0</p>	<p>3737 LAKEPORT BLVD. KLAMATH FALLS OR, 97601 PHONE: (800) 535-3936</p> <p>CAD DWG. NO.: SitelineCLISWQuad Clad</p> <p>REV: A SHEET 1 of 1</p>
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5

1 **The Various Parts**
2



3
4
5 The section shows the attachment schedule:
6 Notice this is a 4-piece door.
7 Two (2) swinging sections and two (2) fixed sections.
8 Fasteners must be located NO MORE THAN 4" from the corners.
9 Spacing: NO MORE THAN 16" between fasteners.
10

Installation Notes:

1. Seal flange/frame to substrate. Sill must have a continuous serpentine bead of structural grade silicone caulk when no fasteners are used to anchor the sill (typical).
2. Use #8 PH or greater fasteners to anchor framing flange with sufficient length to penetrate a minimum of 1 1/2" into the wood frame substrate (min. S.G. = 0.42).
3. Host structure (wood buck, masonry, steel) to be designed and anchored to properly transfer all loads to the structure. The host structure is the responsibility of the architect or engineer of record for the project of installation.

General Notes:

1. The product shown herein is designed, tested and manufactured to comply with the wind load criteria of the adopted International Building Code (IBC), the International Residential Code (IRC), the current Florida Building Code (FBC) and the industry requirement for the stated conditions.
2. All glazing shall conform to ASTM E 1300.
3. Use structural or composite shims where required.

MAXIMUM FRAME	DP	IMPACT
150 1/2 x 98 1/2	+35/-40	NO

Installation Notes:
This schedule addresses only the fasteners required to anchor the unit to achieve the rated design pressure and impact performance (where applicable) up to the size limitations noted. It is not intended as a guide to the installation process and does not address the sealing considerations that may arise in different field conditions. For the complete installation procedure, see the instructions packaged with the unit or go to www.jeld-wen.com.

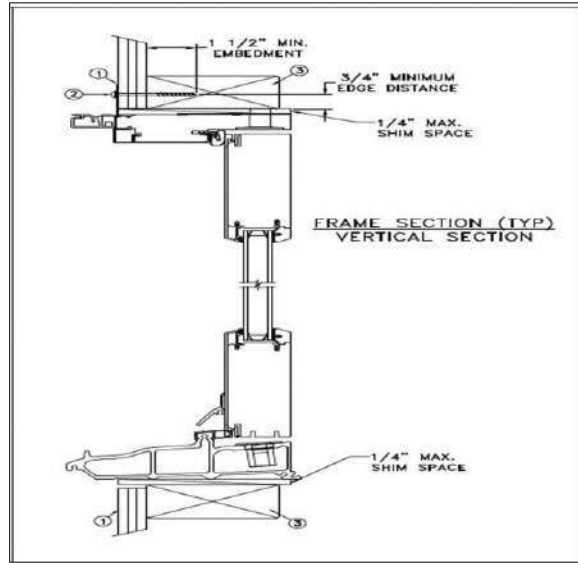
DISCLAIMER:
This drawing and its contents are confidential and are not to be reproduced or copied in whole or in part or used or disclosed to others without as authorized by JELD-WEN Inc.

Technical Drawing Data:

DATE: 07/18/2019	SCALE: NTS	JELD-WEN 3737 LAKEPORT BLVD. KLAMATH FALLS, OR, 97601 PHONE: (800) 535-3936
DRAWN BY: J. HAWKINS	TITLE: Silestone Clad Inswing Quad Patio Door	
CHECKED BY: D. KINDT	RECORD NO: D011490	
APPROVED BY: D. STOKES	PROJECT NO: NCTL-310-19-058 E0A0	CAD DWG NO: SilestoneQuad Cert
"AS TESTED"		REV: A SHEET 1 of 1

Details and Maximum Spacing

This section shows the overall installation. Notice the minimum and maximum spacing. Especially important note: The **MAXIMUM** shim spacing is 1/4". Openings **MUST** be sized properly for proper attachments.



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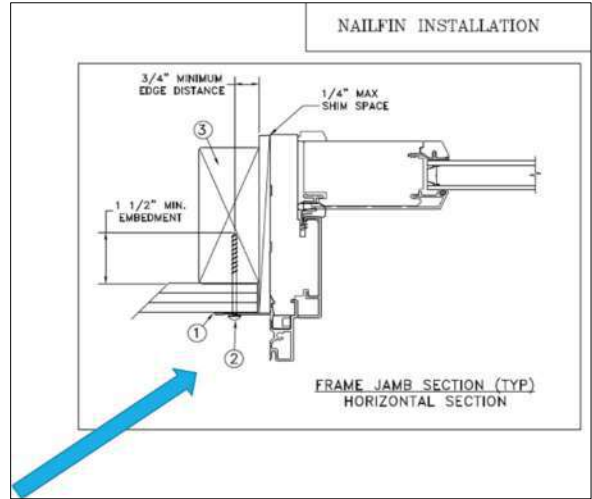
<p>TYPICAL ELEVATION WITH FASTENER SPACING</p>		<p>NAILFIN INSTALLATION</p>																		
<p>Installation Notes:</p> <ol style="list-style-type: none"> Seal flange/frame to substrate. Sill shall be set on a continuous serpentine bead of structural silicone caulk when no fastener is used to anchor the sill (typical). Use #8 PH or greater fastener through the nailing flange with sufficient length to penetrate a minimum of 1 1/2" into the wood framing. For 2x wood frame substrate (min. S.G. = 0.42) Host structure (wood buck, masonry, steel) to be designed and anchored to properly transfer all loads to the structure. The host structure is the responsibility of the architect or engineer of record for the project of installation. 		<p>General Notes:</p> <ol style="list-style-type: none"> The product shown herein is designed, tested and manufactured to comply with the wind load criteria of the adopted International Building Code (IBC), the International Residential Code (IRC), the current Florida Building Code (FBC) and the industry requirement for the stated conditions. All glazing shall conform to ASTM E1300. Use structural or composite shims where required. 																		
<p>This schedule addresses only the fasteners required to anchor the unit to achieve the rated design pressure and impact performance (where applicable) up to the slow infiltration noted. It is not intended as a guide to the installation process and does not address the sealing considerations that may arise in different wall conditions. For the complete installation procedure, see the instructions packaged with the unit or go to www.jeld-wen.com.</p> <p>DISCLAIMER: This drawing and its contents are confidential and are not to be reproduced or copied in whole or in part or used or disclosed to others except as authorized by JELD-WEN Inc.</p> <p style="text-align: center;">"AS TESTED"</p>		<table border="1"> <tr> <td>DATE: 07/18/2019</td> <td>3737 LAKEPORT BLVD.</td> </tr> <tr> <td>DRAWN BY: J.HAWKINS</td> <td>KLAMATH FALLS OR, 97601</td> </tr> <tr> <td>SCALE: NTS</td> <td>PHONE: (800) 535-3936</td> </tr> <tr> <td>CHECKED BY: D.KINDT</td> <td></td> </tr> <tr> <td>APPROVED BY: D.STOKES</td> <td></td> </tr> <tr> <td>TITLE: Siteline Clad Inswing Quad Patio Door</td> <td></td> </tr> <tr> <td>RECORD NO: D011490</td> <td></td> </tr> <tr> <td>REPORT NO: NCTL-310-19-058 E0A0</td> <td></td> </tr> <tr> <td>CAD DWG. No.: SitelineCLISWQuad Cert</td> <td>REV: A SHEET 1 of 1</td> </tr> </table>	DATE: 07/18/2019	3737 LAKEPORT BLVD.	DRAWN BY: J.HAWKINS	KLAMATH FALLS OR, 97601	SCALE: NTS	PHONE: (800) 535-3936	CHECKED BY: D.KINDT		APPROVED BY: D.STOKES		TITLE: Siteline Clad Inswing Quad Patio Door		RECORD NO: D011490		REPORT NO: NCTL-310-19-058 E0A0		CAD DWG. No.: SitelineCLISWQuad Cert	REV: A SHEET 1 of 1
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CHECKED BY: D.KINDT																				
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CAD DWG. No.: SitelineCLISWQuad Cert	REV: A SHEET 1 of 1																			

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Nailfin Installation Details

This section has a lot of information.
 Minimum distance from the edge to fastener through the fin is 3/4".
 Minimum fastener embedment is 1 1/2".
 Maximum shim is 1/4".
 We also must comply with notes 1 & 2!



MAXIMUM FRAME	DP	IMPACT
1 1/2 x 98 1/2	+35/-40	NO

Installation Notes:

- Seal flange/frame to substrate. Sill shall be set on a continuous serpentine bead of structural grade silicone caulk when no fastener is used to anchor the sill (typical).
- Use #8 PH or greater fastener through the nailing flange with sufficient length to penetrate a minimum of 1 1/2" into the wood framing. For 2x wood frame substrate (min. S.G. = 0.42)
- Host structure (wood buck, masonry, steel) to be designed and anchored to properly transfer all loads to the structure. The host structure is the responsibility of the architect or engineer of record for the project of installation.

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JELD-WEN 3737 LAKEPORT BLVD.
 KLAMATH FALLS OR, 97601
 PHONE: (800) 535-3936

Steline Clad Inswing Quad Patio Door

DATE: 07/18/2019
 SCALE: NTS
 DRAWN BY: J. HAWKINS
 CHECKED BY: D. KINDT
 APPROVED BY: D. STOKES
 REVISED BY: D011490
 PROJECT NO: NCTL-310-19-058 EDA0
 CAD DWG. NO.: StelineCLBWQad.Cad
 REV: A SHEET 1 of 1

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- Installation Notes:**
1. Seal flange/frame to substrate. Sill shall be set on a continuous serpentine bead of structural grade silicone caulk when no fastener is used to anchor the sill (typical).
 2. Use #8 PH or greater fastener through the nailing flange with sufficient length to penetrate a minimum of 1 1/2" into the wood framing. For 2x wood frame substrate (min. S.G. = 0.42)
 3. Host structure (wood buck, masonry, steel) to be designed and anchored to properly transfer all loads to the structure. The host structure is the responsibility of the architect or engineer of record for the project of installation.

TYPICAL ELEVATION WITH FASTENER SPACING

FRAME SECTION (TYP) VERTICAL SECTION

FRAME JAMB SECTION (TYP) HORIZONTAL SECTION

NAILFIN INSTALLATION

MAXIMUM FRAME	DP	IMPACT
150 1/2 x 98 1/2	+35/-40	NO

Installation Notes:

1. Seal flange/frame to substrate. Sill shall be set on a continuous serpentine bead of structural grade silicone caulk when no fastener is used to anchor the sill (typical).
2. Use #8 PH or greater fastener through the nailing flange with sufficient length to penetrate a minimum of 1 1/2" into the wood framing. For 2x wood frame substrate (min. S.G. = 0.42)
3. Host structure (wood buck, masonry, steel) to be designed and anchored to properly transfer all loads to the structure. The host structure is the responsibility of the architect or engineer of record for the project of installation.

General Notes:

1. The product shown herein is designed, tested and manufactured to comply with the wind load criteria of the adopted International Building Code (IBC), the International Residential Code (IRC), the current Florida Building Code (FBC) and the industry requirement for the stated conditions.
2. All glazing shall conform to ASTM E1300.
3. Use structural or composite shims where required.

This schedule addresses only the fasteners required to anchor the unit to achieve the rated design pressure and impact performance (where applicable) up to the site limitations noted. It is not intended as a guide to the installation process and does not address the sealing considerations that may arise in different wall conditions. For the complete installation procedure, see the instructions packaged with the unit or go to www.jeld-wen.com.

DISCLAIMER:
This drawing and its contents are confidential and are not to be reproduced or copied in whole or in part or used or disclosed to others except as authorized by JELD-WEN Inc.

"AS TESTED"

DATE: 07/18/2019	3737 LAKEPORT BLVD. KLAMATH FALLS, OR, 97601 PHONE: (800) 535-3936
DRAWN BY: J. HAWKINS	SCALE: NTS
CHECKED BY: D. KINDT	TITLE: Sitrine Clad Inswing Quad Patio Door
APPROVED BY: D. STOKES	
RECORD NO: D011490	
REPORT NO: NCTL-310-19-058 E0A0	CAD DWG. No.: SitrineGLISWQuad Cert REV: A SHEET 1 of 1

7
8

1
2

Additional Notes!

This schedule addresses only the fasteners required to anchor the unit to achieve the rated design pressure and impact performance (where applicable) up to the size limitations noted. It is not intended as a guide to the installation process and does not address the sealing consideration that may arise in different wall conditions. For the complete installation procedure, see the instructions packaged with the unit or go to www.jeld-wen.com.

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3
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It is important to read all of the notes.
 The manufacturers have tested this product and provided it based on specific conditions.
 Also note the fasteners must be rated for the medium they are installed in.
 As an example, galvanized fasteners may not be appropriate for the new pressure treated lumber.

TYPICAL ELEVATION WITH FASTENER SPACING

FRAME SECTION (TYP) VERTICAL SECTION

FRAME JAMB SECTION (TYP) HORIZONTAL SECTION

NAILFIN INSTALLATION

MAXIMUM FRAME	DP	IMPACT
150 1/2 x 98 1/2	+35/-40	NO

Installation Notes:

- Seal flange/frame to substrate. Sill shall be set on a continuous serpentine bead of structural grade silicone caulk when no fastener is used to anchor the sill (typical).
- Use #8 PH or greater fastener through the nailing flange with sufficient length to penetrate a minimum of 1 1/2" into the wood framing. For 2x wood frame substrate (min. S.G. = 0.42)
- Host structure (wood buck, masonry, steel) to be designed and anchored to properly transfer all loads to the structure. The host structure is the responsibility of the architect or engineer of record for the project of installation.

General Notes:

- The product shown herein is designed, tested and manufactured to comply with the wind load criteria of the adopted International Building Code (IBC), the International Residential Code (IRC), the current Florida Building Code (FBC) and the industry requirement for the stated conditions.
- All glazing shall conform to ASTM E1300.
- Use structural or composite shims where required.

This schedule addresses only the fasteners required to anchor the unit to achieve the rated design pressure and impact performance (where applicable) up to the size limitations noted. It is not intended as a guide to the installation process and does not address the sealing consideration that may arise in different wall conditions. For the complete installation procedure, see the instructions packaged with the unit or go to www.jeld-wen.com.

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REVISED BY: D011490	
PROJECT NO: NCTL-310-19-058 E0A0	

JELD-WEN

Siteline Clad Inswing Quad Patio Door

CAD DWG. No.: SitelineCLISWQuad.Crt REV: A SHEET 1 of 1

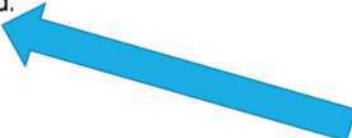
10
11

1
2
3

General Notes Also Apply

General Notes:

1. The product shown herein is designed, tested and manufactured to comply with the wind load criteria of the adopted International Building Code (IBC), the International Residential Code (IRC), the current Florida Building Code (FBC) and the industry requirement for the stated conditions.
2. All glazing shall conform to ASTM E1300.
3. Use structural or composite shims where required.



4
5

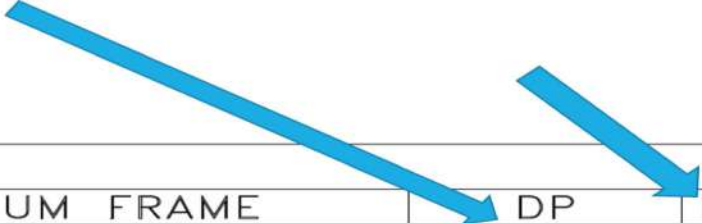
SUMMARY

7

8 Product Approvals cover many installation mediums and numerous construction techniques.
 9 It is imperative you read the information and comply with the tested installation methods.
 10 Be sure you have the right product for the application.
 11 Watch out for positive and negative pressure ratings to be sure you meet or exceed the location data.
 12 If not impact rated, shutters may be required.

13

MAXIMUM FRAME	DP	IMPACT
150 1/2 x 98 1/2	+35/-40	NO



14
15
16
17

THANK YOU !!!

19
20



21
22
23



24
25
26
27
28

Chapter 6

ADVANCED TRAINING:

2023 FLORIDA BUILDING CODE

ENERGY CONSERVATION VOLUME

2-Hours ADVANCED CODE MODULE CE credit

TOPICS TO BE COVERED

- Which version of the Energy volume applies?
- Navigating the Energy Conservation volume
- Commercial and Residential Construction Documents
- Where are these other requirements and what are they for?
- Finding the Code requirements
- Existing Buildings

WHICH VERSION APPLIES?

The current Edition of the Florida Energy Conservation Volume part of the Florida Building Code 8th Edition.

This volume took effect December 31, 2023.

Additional information is found in the Existing Buildings volume as well for things like “Repairs”.

Energy Through the Years

Florida Energy Code goes back to the 1970’s.

Many different methods have been employed over the years in attempts to gain efficiency.

Major changes have taken place over the last code change cycles.

The Florida Energy Conservation Volume is patterned after and based on the International Energy Conservation Code (IECC).

There is a Commercial section and a Residential section .

The Florida Codes are updated every three years.

- The next edition is scheduled to take effect December 31, 2026.

What it is trying to achieve

The goal of the Energy Conservation volume is to reduce overall energy and water usage.

Much talk has taken place about the building envelope, this was the original focus for energy.

Other systems are now included as we continue to strive for energy reductions.

Energy involves all trades and systems

The Need for Inspections and Documentation

As systems progress, some get simpler, and others become more complex. Training and education are paramount to achieving the goals of energy reduction. Knowledge of the codes and understanding the how and why is important to achieve efficiency.

When the designers, contractors, plan reviewers, inspectors, and owners work together, we can achieve this lofty goal. Inspections help to ensure the requirements are being followed. Inspections are required by Sections C104 and R104.

NAVIGATING THE ENERGY VOLUME

Introduction

Required Inspections

Commercial & Residential – Construction Documents

Introduction

Energy Conservation is broken into 2 sections:

- Commercial
- Residential

Each section has an Administration portion.

Each section has a complete Table of Contents and Index.

They are laid out similarly.

Commercial sections start with a “C”, while Residential sections are presented with an “R”.

Required inspections - Commercial and Residential

C/R104.2 Required Inspections

The code official or his or her designated agent, upon notification, shall make the inspections set forth in Sections R104.2.1 through R104.2.5.

Whether Commercial or Residential, inspections are required. Whether Prescriptive or Performance, Inspections are required.

We will now look at those inspections which are mandatory to ensure compliance.

C104.2.1 Footing and foundation inspection.

Inspections associated with footings and foundations shall verify compliance with the code as to *R*-value, location, thickness, depth of burial and protection of insulation as required by the code and *approved* plans and specifications.

C104.2.2 Framing and rough-in inspection

Inspections at framing and rough-in shall be made before application of interior finish and shall verify compliance with the code as to types of insulation and corresponding *R*-values and their correct location and proper installation; fenestration properties (*U*-factor, SHGC and VT) and proper installation; and air leakage controls as required by the code and approved plans and specifications.

C104.2.3 Plumbing rough-in inspection.

Inspections at plumbing rough-in shall verify compliance as required by the code and *approved* plans and specifications as to types of insulation and corresponding *R*-values and protection; required controls; and required heat traps.

C104.2.4 Mechanical rough-in inspection.

Inspections at mechanical rough-in shall verify compliance as required by the code and *approved* plans and specifications as to installed HVAC equipment type and size; required controls, system insulation and corresponding *R*-value; system and damper air leakage; and required energy recovery and economizers.

C104.2.5 Electrical rough-in inspection.

Inspections at electrical rough-in shall verify compliance as required by the code and *approved* plans and specifications as to installed lighting systems, components and controls; and installation of an electric meter for each dwelling unit.

C104.2.6 Final inspection.

The building shall have a final inspection and shall not be occupied until *approved*. The final inspection shall include verification of the installation and proper operation of all required building controls, and documentation verifying activities associated with required *building commissioning* have been conducted and findings of noncompliance corrected. Buildings, or portions thereof, shall not be considered for a final inspection until the *code official* has received a letter of transmittal from the building owner acknowledging that the building owner has received the Preliminary Commissioning Report as required in Section C408.2.4.R104.2 Required Inspections (Residential)

Residential: The code official or his or her designated agent, upon notification, shall make the inspections set forth in Sections R104.2.1 through R104.2.5.

R104.2.1 Footing and foundation inspection

Inspections associated with footings and foundations shall verify compliance with the code as to *R*-value, location, thickness, depth of burial and protection of insulation as required by the code and *approved* plans and specifications.

R104.2.2 Framing and rough-in inspection

Inspections at framing and rough-in shall be made before application of interior finish and shall verify compliance with the code as to types of insulation and corresponding *R*-values and their correct location and proper installation; fenestration properties (*U*-factor and SHGC) and proper installation; and air leakage controls as required by the code and approved plans and specifications.

R104.2.3 Plumbing rough-in inspection

Inspections at plumbing rough-in shall verify compliance as required by the code and *approved* plans and specifications as to types of insulation and corresponding *R*-values and protection and required control.

R104.2.4 Mechanical rough-in inspection

Inspections at mechanical rough-in shall verify compliance as required by the code and *approved* plans and specifications as to installed HVAC equipment type and size, required controls, system insulation and corresponding *R*-value, system air leakage control, programmable thermostats, dampers, whole-house ventilation, and minimum fan efficiency.

R104.2.5 Final inspection

The *code official* is authorized to accept inspection reports in whole or in part from either individuals as defined in Section 553.993(5) or (7), Florida Statutes or *third-party inspection agencies not affiliated with the building design or construction*, provided such agencies are *approved* as to qualifications and reliability relevant to the building components and systems they are inspecting.

R104.5 Inspection requests.

It shall be the duty of the holder of the permit or their duly authorized agent to notify the code official when work is ready for inspection. It shall be the duty of the permit holder to provide access to and means for inspections of such work that are required by this code.

Additional inspections may be needed or offered. Performance systems may require additional inspection based on the item or methods used.

Remember, the Code is a minimum standard. Above Code programs are addressed in section C102.2.2 for Commercial and R102.1.1 for Residential.

R401.3 Energy performance level (EPL) display card

The building official shall require that an energy performance level (EPL) display card be completed and certified by the builder to be accurate and correct before final approval of the building for occupancy. Florida law (Section 553.9085, Florida Statutes) requires the EPL display card to be included as an addendum to each sales contract for both presold and non-presold residential buildings. The EPL display card contains information indicating the energy performance level and efficiencies of components installed in a dwelling unit. The building official shall verify that the EPL display card completed and signed by the builder accurately reflects the plans and specifications submitted to demonstrate code compliance for the building. A copy of the EPL display card can be found in Appendix RD.

COMMERCIAL AND RESIDENTIAL - CONSTRUCTION DOCUMENTS

Chapter 1 for Commercial and Residential contains the requirements for submissions to the Building Official.

C/R103.1 General

Construction documents, technical reports and other supporting data shall be submitted in one or more sets with each application for a permit. The construction documents shall be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed. Where special conditions exist, the code official is authorized to require necessary construction documents to be prepared by a registered design professional.

Exception: The code official is authorized to waive the requirements for construction documents or other supporting data if the code official determines they are not necessary to confirm compliance with this code.

Construction Documents – Design Conditions

Whichever method of Compliance is used, the design for the building is to be based on:

C/R302.1 Interior design conditions.

The interior design temperatures used for heating and cooling load calculations shall be a maximum of 72°F (22°C) for heating and minimum of 75°F (24°C) for cooling.

C/R 101.5 Compliance

Residential buildings shall meet the provisions of Florida Building Code, Energy Conservation—Residential Provisions. *Commercial buildings* shall meet the provisions of Florida Building Code, Energy Conservation—Commercial Provisions.

For Commercial, by using FBC approved software, the building must meet the Code requirements, or code official's approval.

1
2 **For Residential** below 3 stories, one of the methods must be used.
3

4 **R101.5.1.1.1 Building thermal envelope alternative**

5
6 An accurately completed Residential Building Form R402 shall be submitted to the code official to
7 demonstrate code compliance by this method. Alternatively, a Florida REScheck computer printout may
8 be submitted to demonstrate compliance by Sections R402, R403 and R404.
9

10 **R101.5.1.1.2 Simulated performance alternative –**

11
12 An accurately completed Residential Building Form R405 (generated by Commission approved software)
13 demonstrating that code compliance has been achieved shall be submitted to the building official for
14 compliance by Section R405.
15

16 **Compliance Certification**

17 18 **C/R103.1.1 – Compliance Certifications**

19 20 **R103.1.1.1.1 Residential**

21
22 No license or registration is required to prepare the code compliance form for single-family residential
23 dwellings, duplexes, and townhouses.
24

25 **C/R103.1.1.1.2 Commercial and Multiple-Family Residential –**

26
27 Completion of procedures demonstrating compliance with this code for commercial and multiple-family
28 residential buildings shall be in accordance with the provisions of Section 481.229, Florida Statutes, or
29 Section 471.003, Florida Statutes.
30

31 **Exception:** Where HVAC systems are ≤ 15 tons per system, air conditioning or mechanical contractors
32 licensed in accordance with Chapter 489, Florida Statutes, or commercial building energy raters certified
33 in accordance with Section 553.99, Florida Statutes, may prepare the code compliance form.
34

35 **C103.1.1.1.2 Commercial and Multiple-Family Residential.**

36
37 Design professionals responsible under Florida law for the design of lighting, electrical, mechanical, and
38 plumbing systems, and the building shell, shall certify compliance of those building systems with the code
39 by signing and providing their professional registration number on the energy code form provided as part
40 of the plans and specifications to the building department.
41

42 **C/R103.1.1.2 Code compliance certification**

43
44 The building's owner, the owner's architect, or other authorized agent legally designated by the owner
45 shall certify that the building follows the code, as per Section 553.907, Florida Statutes, prior to receiving
46 the permit to begin construction or renovation.
47

48 **Information on Construction Documents**

49 50 **C103.2 Information on construction documents**

51
52 Construction documents shall be drawn to scale upon suitable material. Electronic media documents are
53 permitted to be submitted where approved by the code official. Construction documents shall be of
54 sufficient clarity to indicate the location, nature and extent of the work proposed, and show in sufficient
55 detail pertinent data and features of the building, systems, and equipment as herein governed. Details
56 shall include, but are not limited to, the following as applicable:
57

1 The 12 Required Items on Plans:
2

- 3 • 1. Insulation materials and their R-values.
- 4 • 2. Fenestration U-factors and solar heat gain coefficients (SHGCs).
- 5 • 3. Area-weighted U-factor and solar heat gain coefficient (SHGC) calculations.
- 6 • 4. Mechanical system design criteria.
- 7 • 5. Mechanical and service water heating system and equipment types, sizes and efficiencies.
- 8 • 6. Economizer description.
- 9 • 7. Equipment and system controls.
- 10 • 8. Fan motor horsepower (hp) and controls.
- 11 • 9. Duct sealing, duct and pipe insulation and location.
- 12 • 10. Lighting fixture schedule with wattage and control narrative.
- 13 • 11. Location of daylight zones on floor plans.
- 14 • 12. Air sealing details.

15 16 **C103.2.1 Building Thermal Envelope Depiction.**

17 The building's thermal envelope shall be represented on the construction drawings.

18 This is required to rigorously evaluate and to seal the thermal envelope.

19 20 21 **Review of Construction Documents**

22 23 **C103.3 Examination of documents**

24 The code official shall examine or cause to be examined the accompanying construction documents and
25 shall ascertain whether the construction indicated and described is in accordance with the requirements
26 of this code and other pertinent laws or ordinances. The code official is authorized to utilize a registered
27 design professional, or other approved entity not affiliated with the building design or construction, in
28 conducting the review of the plans and specifications for compliance with the code.

29 Florida does not have a required category of licensure for Energy Plan Review. The review falls onto ALL
30 plan reviewers to ensure the requirements are met. Perhaps more importantly, to review the overall
31 project to ensure the various parts and pieces are compatible and will function together based on each
32 reviewers knowledge of their portion of the project and to communicate that between trades.

33 34 35 **Approval of Construction Documents**

36 37 **C103.3.1 Approval of construction documents**

38 When the code official issues a permit where construction documents are required, the construction
39 documents shall be endorsed in writing and stamped "Reviewed for Code Compliance." Such approved
40 construction documents shall not be changed, modified, or altered without authorization from the code
41 official. Work shall be done in accordance with the approved construction documents.

42 One set of construction documents so reviewed shall be retained by the code official. The other set shall
43 be returned to the applicant, kept at the site of work and shall be open to inspection by the code official
44 or a duly authorized representative.

45 **This is a Code requirement!**

46 47 **After the Permit is Issued**

48 Once the permit is issued, the required inspections previously mentioned will be required. Section C
49 103.4 tells us that the plans must be followed.
50
51
52
53
54
55
56

C103.4 Amended construction documents.

Changes made during construction that are not in compliance with the approved construction documents shall be resubmitted for approval as an amended set of construction documents.

This is to ensure the design is followed for efficiency.

R102 Alternative Materials, Design and Methods of Construction and Equipment**R102.1 General.**

The provisions of this Code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. The code official shall be permitted to approve an alternative material, design, or method of construction where the code official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code.

Information on Construction Documents**R103.2 Information on construction documents**

Like Commercial regarding drawings. Instead of 12 there are 8 items:

- 1. Insulation materials and their R-values.
- 2. Fenestration U-factors and solar heat gain coefficients (SHGC).
- 3. Area-weighted U-factor and solar heat gain coefficients (SHGC) calculations.
- 4. Mechanical system design criteria.
- 5. Mechanical and service water-heating system and equipment types, sizes, and efficiencies.
- 6. Equipment and system controls.
- 7. Duct sealing, duct and pipe insulation and location.
- 8. Air sealing details

R103.2.1 Building thermal envelope depiction –

The building's thermal envelope shall be represented on the construction documents.

Review of Construction Documents

Same as Commercial

R103.3 Examination of documents

The code official shall examine or cause to be examined the accompanying construction documents and shall ascertain whether the construction indicated and described is in accordance with the requirements of this code and other pertinent laws or ordinances. The code official is authorized to utilize a registered design professional, or other approved entity not affiliated with the building design or construction, in conducting the review of the plans and specifications for compliance with the code.

Approval of Construction Documents

Same as Commercial

R103.3.1 Approval of construction documents.

When the code official issues a permit where construction documents are required, the construction documents shall be endorsed in writing and stamped “Reviewed for Code Compliance.” Such approved construction documents shall not be changed, modified, or altered without authorization from the code official. Work shall be done in accordance with the approved construction documents.

One set of construction documents so reviewed shall be retained by the code official. The other set shall be returned to the applicant, kept at the site of work and shall be open to inspection by the code official or a duly authorized representative.

This is a Code requirement!

WHERE ARE THESE OTHER REQUIREMENTS AND WHAT ARE THEY FOR?

Finding Code Requirements

Finding the specific code requirements should not be difficult once you understand the layout:

- Start by determining if the project is Commercial or Residential
- Next, determine if the design is prescriptive or performance
- Remember, the mandatory sections apply either way!

For terms you are not familiar with, use the definitions found in **Chapter 2**.

It is good to review the terms contained here so you know if some of the common terminology may have special meaning in this volume of the Code.

Attic is an example of this.

We ordinarily think of the attic as the space above the highest floor ceiling.

When applying the Energy Conservation volume, it is:

- An enclosed unconditioned space located immediately below an uninsulated roof and immediately above the ceiling of a building.

C101.2 Scope.

This code applies to commercial buildings and the buildings’ sites and associated systems and equipment.

C101.4.1 Mixed occupancy

Where a building includes both residential and commercial occupancies, each occupancy shall be separately considered and meet the applicable provisions of Florida Building Code, Energy Conservation—Commercial Provisions or Florida Building Code, Energy Conservation—Residential Provisions

R101.2 Scope

This code applies to residential buildings and the building sites and associated systems and equipment.

R 101.4.1 Mixed occupancy

Where a building includes both residential and commercial occupancies, each occupancy shall be separately considered and meet the applicable provisions of the Florida Building Code, Energy Conservation—Commercial Provisions or Florida Building Code, Energy Conservation—Residential

1 Provisions.

2
3 Each portion applies to the Occupancy as defined in the Building Code volume that is applicable.

4
5 This means:

6
7 A condominium has commercial and residential portions.

8 The portions representing the group R, Residential units must comply with the Residential sections.
9 Hallways, common areas and all commercial areas must comply with the commercial portions of the
10 volume.

11 Put simply, if it is not Residential, the commercial sections apply.

12 Each section has a General Requirements part.

13 Each part has definitions specific to that part

14 Chapter 3 of each part covers General Requirements.

15 Chapter 4 of each part addresses Energy Efficiency.

16 Chapter 5 covers Existing Buildings.

17 Each section then contains the Referenced Standards, forms, and applicable appendixes.

18
19 As you utilize the Florida Energy Conservation volume, you will see it provides much information, both
20 required and optional paths for compliance.

21
22 **The Prescriptive Path** is similar to a recipe, where you follow the directions and install the items
23 required.

24
25 **The Performance Path** provides for versatility in design and application, usually modeled using computer
26 software.

27
28 Some items are still mandatory!

29 30 **Commercial/Residential Chapter 3**

31
32 Florida has 2 climate zones:

- 33
- 34 • Zone 1A is the southernmost portion of the state.
- 35 • Zone 2A is the remainder of the state.
- 36

37 All of Florida is designated as warm-humid locations. Chapter 3 also provides us with:

- 38
- 39 • Insulation requirements.
- 40 • Fenestration product ratings.
- 41 • Maintenance requirement information.
- 42 • Assembly calculation (Commercial).
- 43

44 **Commercial Chapter 4**

45
46 Chapter 4 starts with providing the design paths that may be used:

47 48 **C401.2 Application.**

49
50 Commercial buildings shall comply with one of the following:

- 51
- 52 • 1. The requirements of ANSI/ASHRAE/IESNA 90.1, excluding section 9.4.1.1(g) of the standard.
- 53 • 2. The requirements of Sections C402 through C405. In addition, commercial buildings shall
54 comply with Section C406 and tenant spaces shall comply with Section C406.1.1.
- 55 • 3. The requirements of Sections C402.5, C403.2, C404, C405.2, C405.3, C405.5, C405.6 and
56 C407. The building energy cost shall be equal to or less than 85 percent of the standard
57 reference design building.

1
2 **Option 1** refers to ASHRAE 90.1:

3
4 This is a standard in the industry.

5 Many of the requirements that are found in the text of the prescriptive requirements originate in this
6 document.

7 The book is published by the American Society of Heating, Refrigeration and Air conditioning Engineers.

8 It is intended for all buildings except for low-rise residential.

9 It is considered the benchmark for energy efficiency.

10
11 **Option 2** is the prescriptive path.

12
13 This path provides “directions” in the form of code requirements and options to meet them.

14 The envelope is addressed in much detail as this was the focus of energy savings from the start.

15 This is followed by fenestrations (windows and doors).

16 Then comes the air barrier to round out the thermal envelope.

17 It has been said we have gone as far as possible with the building envelope.

18 That takes us inside.

19 Next the code addresses Building Mechanical Systems:

20 Air Conditioning

- 21 • Split systems
- 22 • Mini splits
- 23 • Economizers
- 24 • Ductwork
- 25 • System insulation
 - 26 ○ Service Water Heating
 - 27 ○ Electrical Power and Lighting

28
29 **Option 3** - Performance Based.

30
31 Remember that even using performance-based design, certain items remain mandatory.

32 33 **C407.2 Mandatory Requirements.**

34
35 Compliance with this section requires that the criteria of Sections C402.5, C403.2, C404 and C405 be
36 met.

37 38 **C402.5 Air leakage—thermal envelope (Mandatory)**

39
40 The *thermal envelope* of buildings shall comply with Sections C402.5.1 through C402.5.8, or the
41 building *thermal envelope* shall be tested in accordance with ASTM E779 at a pressure differential of 0.3-
42 inch water gauge (75 Pa) or an equivalent method approved by the code official and deemed to comply
43 with the provisions of this section when the tested air leakage rate of the building thermal envelope is not
44 greater than 0.40 cfm/ft² (2.0 L/s · m²). Where compliance is based on such testing, the building shall also
45 comply with Sections C402.5.5, C402.5.6 and C402.5.7.

46 47 **C403.2 Provisions applicable to all mechanical systems (Mandatory)**

48
49 Mechanical systems and equipment serving the building heating, cooling or ventilating needs shall
50 comply with Sections C403.2.1 through C403.2.14.

51 52 **C404 Service Water Heating (Mandatory)**

53
54 This section covers the minimum efficiency of, and controls for, service water-heating equipment and
55 insulation of service hot water piping.

C405 Electrical Power and Lighting Systems

This section covers lighting system controls, the maximum lighting power for interior and exterior applications and electrical energy consumption.

Residential – Chapter 4

R401.2 Compliance

Projects shall comply with one of the following:

- 1. Sections R401 through R404.
- 2. Section R405 and the provisions of Sections R401 through R404 labeled “Mandatory.”
- 3. An energy rating index (ERI) approach in Section R406.

R405 Simulated Performance Alternative

As with Commercial, computer modeling and simulated performance is an option. As with Commercial, certain mandatory requirements still apply, such as:

Supply and return duct insulation, and
Ceiling insulation

Documentation of the method and results must be provided.

Software is to be approved by the Building Commission.

Commercial- Summary

Whichever option is chosen, certain mandatory requirements will apply and must be met.

The Code provides for options. New technology and better methods are encouraged if, in the opinion of the Building Official, they meet the intent of the Code.

C102.1 General.

This code is not intended to prevent the use of any material, method of construction, design or insulating system not specifically prescribed herein, provided that such construction, design or insulating system has been approved by the code official as meeting the intent of this code.

Beyond Code

C/R102.1.1 Above code programs

The code official or other authority having jurisdiction shall be permitted to deem a national, state or local energy efficiency program to exceed the energy efficiency required by this code. Buildings approved in writing by such an energy efficiency program shall be considered in compliance with this code. The requirements identified as “mandatory” in Chapter 4 shall be met.

Mandatory Requirements - Commercial

It is important to note that no matter which path is used and even if utilizing an above code program, certain mandatory requirements still apply. We will discuss a few of these.

These sections are labeled in the Code as (Mandatory), and include:

C402.5 Air leakage—thermal envelope (Mandatory). ;

The *thermal envelope* of buildings shall comply with Sections C402.5.1 through C402.5.8, or the building *thermal envelope* shall be tested in accordance with ASTM E779 at a pressure differential of 0.3-inch water gauge (75 Pa) or an equivalent method approved by the code official and deemed to comply with the provisions of this section when the tested air leakage rate of the building thermal envelope is not greater than 0.40 cfm/ft² (2.0 L/s · m²). Where compliance is based on such testing, the building shall also comply with Sections C402.5.5, C402.5.6 and C402.5.7.

C403.2 Provisions applicable to all mechanical systems (Mandatory).

Mechanical systems and equipment serving the building heating, cooling or ventilating needs shall **comply with Sections C403.2.1 through C403.2.14.**

C404 Service Water Heating (Mandatory)

This section covers the minimum efficiency of, and controls for, service water-heating equipment and insulation of service hot water piping.

Table C404.2 Minimum Performance of Water-Heating Equipment.**C404.3 Heat traps.**

Water-heating equipment not supplied with integral heat traps and serving noncirculating systems shall be provided with heat traps on the supply and discharge piping associated with the equipment.

C404.4 Insulation of piping.

The following piping shall be insulated to levels shown in Table C403.2.10:

- a. Recirculating system piping, including the supply and return piping of a circulating tank type water heater.
- b. The first 8 feet of outlet piping for a constant-temperature nonrecirculating storage system.
- c. The first 8 feet of branch piping connecting to recirculated, heat-traced, or impedance heated piping.
- d. The inlet piping between the storage tank and a heat trap in a nonrecirculating storage system.
- e. Piping that is externally heated (such as heat trace or impedance heating).

C404.5 Efficient heated water supply piping.

Heated water supply piping shall be in accordance with Section C404.5.1 or C404.5.2. The flow rate through 1/4-inch (6.4 mm) piping shall be not greater than 0.5 gpm (1.9 L/m). The flow rate through 5/16-inch (7.9 mm) piping shall be not greater than 1 gpm (3.8 L/m). The flow rate through 3/8-inch (9.5 mm) piping shall be not greater than 1.5 gpm (5.7 L/m).

C404.9 Energy consumption of pools and permanent spas (Mandatory).

The energy consumption of pools and permanent spas shall be controlled by the requirements in Sections C404.9.1 through C404.9.3.

C404.9.1 Heaters.

The electric power to all heaters shall be controlled by a readily accessible on-off switch that is an integral part of the heater, mounted on the exterior of the heater, or external to and within 3 feet (914 mm) of the heater. Operation of such switch shall not change the setting of the heater thermostat. Such switches shall be in addition to a circuit breaker for the power to the heater. Gas-fired heaters shall not be equipped with continuously burning ignition pilots.

C404.10 Energy consumption of portable spas (Mandatory)

The energy consumption of electric-powered portable spas shall be controlled by the requirements of APSP 14.

C405 Electrical Power and Lighting Systems

This section covers lighting system controls, the maximum lighting power for interior and exterior applications and electrical energy consumption.

C405.2 Lighting controls (Mandatory).

This is an interesting section and worth reviewing.

C407 Total Building Performance

This section establishes criteria for compliance using total building performance. The following systems and loads shall be included in determining the total building performance: heating systems, cooling systems, service water heating, fan systems, lighting power, receptacle loads and process loads.

C407.2 Mandatory requirements –

Compliance with this section requires that the criteria of Sections C402.5, C403.2, C404 and C405 be met.

C407.2.1 Roof/ceiling thermal envelope –

The roof or ceiling that functions as the building's thermal envelope shall be insulated to an R-value of at least R-10. Multiple family residential roofs/ceilings shall be insulated to an R-value of at least R-19, space permitting. Where cavities beneath a roof deck are ventilated, the ceiling shall be considered the envelope component utilized in the Commission approved compliance software tools.

Mandatory Requirements - Residential

These sections are labeled in the Code as (Mandatory), and include:

R401.3 Energy performance level (EPL) display card (Mandatory).

The building official shall require that an energy performance level (EPL) display card be completed and certified by the builder to be accurate and correct before final approval of the building for occupancy. Florida law (Section 553.9085, Florida Statutes) requires the EPL display card to be included as an addendum to each sales contract for both presold and nonpresold residential buildings. The EPL display card contains information indicating the energy performance level and efficiencies of components installed in a dwelling unit. The building official shall verify that the EPL display card completed and signed by the builder accurately reflects the plans and specifications submitted to demonstrate code compliance for the building. A copy of the EPL display card can be found in Appendix RD.

R402.4 Air leakage (Mandatory)

Review TABLE R402.4.1.1

R402.4.1.2 Testing.

The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding seven air changes per hour in Climate Zones 1 and 2, and three air changes per hour in Climate Zones 3 through 8. Testing shall be conducted in accordance with ANSI/RESNET/ICC 380 and reported at a pressure of 0.2-inch w.g. (50 pascals). Testing shall be conducted by either individuals as defined in

1 Section 553.993(5) or (7), Florida Statutes, or individuals licensed as set forth in Section 489.105(3)(f), (g)
2 or (i) or an *approved* third party. A written report of the results of the test shall be signed by the party
3 conducting the test and provided to the *code official*. Testing shall be performed at any time after creation
4 of all penetrations of the *building thermal envelope*.

5
6 **Exception:** Testing is not required for additions, alterations, renovations, or repairs of the building
7 thermal envelope of existing buildings in which the new construction is less than 85 percent of the
8 building thermal envelope.

10 **R402.4.3 Fenestration air leakage.**

11
12 Windows, skylights and sliding glass doors shall have an air infiltration rate of no more than 0.3 cfm per
13 square foot and swinging doors no more than 0.5 cfm per square foot, when tested according to NFRC
14 400 or AAMA/WDMA/CSA 101/I.S.2/A440 by an accredited, independent laboratory
15 and *listed* and *labeled* by the manufacturer.

16
17 **Exception:** Site-built windows, skylights, and doors.

19 **R403.1.1 Thermostat provision (Mandatory) –**

20
21 At least one thermostat shall be provided for each separate heating and cooling system.

23 **R403.1.3 Heat pump supplementary heat (Mandatory).**

24
25 Heat pumps having supplementary electric-resistance heat shall have controls that, except during defrost,
26 prevent supplemental heat operation when the heat pump compressor can meet the heating load.

28 **R403.3.2 Sealing (Mandatory) –**

29
30 Refers to C403.2.9.2

32 **R403.3.3 Duct testing (Mandatory) –**

33
34 Rough-in Test and Post Construction Test.

36 **Exceptions:**

- 37
38
- 39 ○ 1. A duct air leakage test shall not be required where the ducts and air handlers are
 - 40 located entirely within the building thermal envelope.
 - 41 ○ 2. Duct testing is not mandatory for buildings complying by Section 405 of this code.

42 **R403.3.5 Building cavities (Mandatory).**

43
44 Building framing cavities shall not be used as ducts or plenums.

46 **R403.4 Mechanical system piping insulation (Mandatory).**

47
48 Mechanical system piping capable of carrying fluids above 105°F (41°C) or below 55°F (13°C) shall be
49 insulated to a minimum of R-3.

51 **R403.5.1 Heated water circulation and temperature maintenance systems** 52 **(Mandatory).**

53
54 If heated water circulation systems are installed, they shall be in accordance with Section R403.5.1.1.
55 Heat trace temperature maintenance systems shall be in accordance with Section R403.5.1.2. Automatic
56 controls, temperature sensors and pumps shall be accessible. Manual controls shall be readily
57 accessible.

R403.5.5 Heat traps (Mandatory).

Storage water heaters not equipped with integral heat traps and having vertical pipe risers shall have heat traps installed on both the inlets and outlets. External heat traps shall consist of either a commercially available heat trap or a downward and upward bend of at least 3 1/2 inches (89 mm) in the hot water distribution line and cold-water line located as close as possible to the storage tank.

R403.5.6 Water heater efficiencies (Mandatory).**R403.5.6.1 Automatic controls.**

Service water-heating systems shall be equipped with automatic temperature controls capable of adjustment from the lowest to the highest acceptable temperature settings for the intended use. The minimum temperature setting range shall be from 100°F to 140°F (38°C to 60°C).

R403.5.6.1.2 Shut down.

A separate switch or a clearly marked circuit breaker shall be provided to permit the power supplied to electric service systems to be turned off. A separate valve shall be provided to permit the energy supplied to the main burner(s) of combustion types of service water-heating systems to be turned off.

R403.6 Mechanical ventilation (Mandatory).

The building shall be provided with ventilation that meets the requirements of the Florida Building Code, Residential, or Florida Building Code, Mechanical, as applicable, or with other approved means of ventilation including: Natural, Infiltration or Mechanical means. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

R403.7 Heating and cooling equipment (Mandatory).**R403.7.1 Equipment sizing.**

Heating and cooling equipment shall be sized in accordance with ACCA Manual S based on the equipment loads calculated in accordance with ACCA Manual J or other approved heating and cooling calculation methodologies, based on building loads for the directional orientation of the building. The manufacturer and model number of the outdoor and indoor units (if split system) shall be submitted along with the sensible and total cooling capacities at the design conditions described in Section R302.1. This Code does not allow designer safety factors, provisions for future expansion or other factors that affect equipment sizing. System sizing calculations shall not include loads created by local intermittent mechanical ventilation such as standard kitchen and bathroom exhaust systems. New or replacement heating and cooling equipment shall have an efficiency rating equal to or greater than the minimum required by federal law for the geographic location where the equipment is installed.

R403.8 Systems serving multiple dwelling units (Mandatory) –

Systems serving multiple dwelling units shall comply with Sections C403 and C404 of the Florida Building Code, Energy Conservation—Commercial Provisions in lieu of Section R403.

R403.9 Snow melt and ice system controls (Mandatory).

Snow- and ice-melting systems, supplied through energy service to the building, shall include automatic controls capable of shutting off the system when the pavement temperature is above 50°F (10°C), and no precipitation is falling and an automatic or manual control that will allow shutoff when the outdoor temperature is above 40°F (4.8°C).

R403.10 Pools and permanent spa energy consumption (Mandatory).

The energy consumption of pools and permanent spas shall be in accordance with Sections R403.10.1 through R403.10.5.

R404.1 Lighting equipment (Mandatory).

Not less than 90 percent of the lamps in permanently installed luminaires shall have an efficacy of at least 45 lumens-per-watt or shall utilize lamps with an efficacy of not less than 65 lumens-per-watt.

R405.2 Mandatory requirements –

Compliance with this section requires that the mandatory provisions identified in Section R401.2 be met. All supply and return ducts not completely inside the building thermal envelope shall be insulated to a minimum of R-6.

R406.2 Mandatory requirements –

Compliance with this section requires that the provisions identified in Sections R401 through R404 labeled as “mandatory” and Section R403.5.3 of the 2015 International Energy Conservation Code be met. For buildings that do not utilize on-site renewable power production for compliance with this section, the building thermal envelope shall be greater than or equal to levels of efficiency and Solar Heat Gain Coefficient in Table 402.1.1 or 402.1.3 of the 2009 International Energy Conservation Code.

Exception: Supply and return ducts not completely inside the building thermal envelope shall be insulated to a minimum of R-6.

EXISTING BUILDINGS

- The “Renovated Building” dilemma
- Repairing portions and systems
- Is Engineering, Paperwork and Calculations Required?

The “Renovated Building” Dilemma

Florida Statute 553.902 provides a definition of “Renovated building” that has been incorporated into Sections C101.4.2 and R101.4.2 as well as the definitions.

F.S. 553.902(6) “Renovated building” means a residential or nonresidential building undergoing alteration that varies or changes insulation, HVAC systems, water heating systems, or exterior envelope conditions, if the estimated cost of renovation exceeds 30 percent of the assessed value of the structure.

Essentially, if the alterations do not exceed 30% of the assessed value of the existing structure, the rules of the Energy Conservation volume do not apply. Same for Both Residential and Commercial.

C/R 101.4.2 Exempt buildings.

Buildings exempt from the provisions of the Florida Building Code, Energy Conservation, include existing buildings except those considered renovated buildings, changes of occupancy type or previously unconditioned buildings to which comfort conditioning is added. Exempt buildings include those specified in Sections C/R101.4.2.1 through C/R101.4.2.4.

This definition provides an exemption to the requirements of the Energy Conservation volume. The statutory language was incorporated into Florida law in 1992. It has been a part of the Energy Code and then the Energy Conservation volume ever since.

1 This basically allows existing buildings undergoing repairs and alterations to utilize the codes in effect at
2 the time of construction to be applied if the cost of the repairs or alterations do not exceed 30% of the
3 assessed value of the structure (not including the land).
4

5 **Repairing Portions and Systems**

6

7 Chapter 5 of the Energy Conservation volume covers Existing Buildings. This is true in both the
8 Commercial and Residential sections. Similar requirements exist in the beginning of each.
9

10 We will look at the Commercial sections and then the Residential.
11

12 **C501.1 Scope.**

13

14 The provisions of this chapter shall control the alteration, repair, addition and change of occupancy of
15 existing buildings and structures.
16

17 While this section seems to apply to all work on existing buildings, remember the exemption for buildings
18 that are not considered “renovated”.
19

20 **C501.2 Existing buildings.**

21

22 Except as specified in this chapter, this code shall not be used to require the removal, alteration, or
23 abandonment of, nor prevent the continued use and maintenance of, an existing building or building
24 system lawfully in existence at the time of adoption of this code.
25

26 This section clearly helps us to understand the intent is to allow the continuation of existing buildings and
27 we are not requiring existing buildings to replace everything in order to continue their use.
28

29 Again, this is further information reinforcing that existing buildings may continue in a safe condition based
30 on the code they were constructed to.
31

32 **C501.3 Maintenance.**

33

34 Buildings and structures, and parts thereof, shall be maintained in a safe and sanitary condition. Devices
35 and systems that are required by this code shall be maintained in conformance to the code edition under
36 which installed. The owner or the owner’s authorized agent shall be responsible for the maintenance of
37 buildings and structures. The requirements of this chapter shall not provide the basis for removal or
38 abrogation of energy conservation, fire protection and safety systems and devices in existing structures.
39

40 **C501.4 Compliance.**

41

42 Alterations, repairs, additions, and changes of occupancy to, or relocation of, existing buildings and
43 structures shall comply with the provisions for alterations, repairs, additions and changes of occupancy or
44 relocation, respectively, in the Florida Building Code, Building; Florida Fire Prevention Code; Florida
45 Building Code, Fuel Gas; Florida Building Code, Mechanical; Florida Building Code, Plumbing; and NFPA
46 70.
47

48 **C501.5 New and replacement materials.**

49

50 Except as otherwise required or permitted by this code, materials permitted by the applicable code for
51 new construction shall be used. Like materials shall be permitted for repairs, provided hazards to life,
52 health or property are not created. Hazardous materials shall not be used where the code for new
53 construction would not permit use of these materials in buildings of similar occupancy, purpose, and
54 location.
55

C501.7 Building systems and components.

Thermal efficiency standards are set for the following building systems and components where new products are installed or replaced in existing buildings, and for which a permit must be obtained. New products shall meet the minimum efficiencies allowed by this code for the following systems and components:

- Heating, ventilating or air-conditioning systems.
- Service water or pool heating systems.
- Lighting systems; and
- Replacement fenestration.

Exceptions:

- 1. Where part of a functional unit is repaired or replaced. For example, replacement of an entire HVAC system is not required because a new compressor or other part does not meet code when installed with an older system.
- 2. If the unit being replaced is itself a functional unit, such as a condenser, it does not constitute a repair. Outdoor and indoor units that are not designed to be operated together must meet the U.S. Department of Energy certification requirements contained in Section R303.1.2. Matched systems are required; this match may be verified by any one of the following means:
 - a) AHRI data
 - b) Accredited laboratory
 - c) Manufacturer's letter
 - d) Letter from registered P.E. State of Florida
- 3. Where existing components are utilized with a replacement system, such as air distribution system ducts or electrical wiring for lights, such components or controls need not meet code if meeting code would require that component's replacement.
- 4. Replacement equipment that would require extensive revisions to other systems, equipment, or elements of a building where such replacement is a like-for-like replacement, such as through-the-wall condensing units and PTACs, chillers and cooling towers in confined spaces.

C501.7.1 Existing equipment efficiencies.

Existing cooling and heating equipment in residential applications need not meet the minimum equipment efficiencies, including system sizing and duct sealing.

Why is this in the Commercial section when it specifically refers to applies to Residential?

Good Question! Does it mean Commercial applications need to comply as the Code changes?

No!

Let us look at Residential requirements.

R501.1.1 Additions, alterations, or repairs: General.

Additions, alterations, or repairs to an existing building, building system or portion thereof shall comply with Section R502, R503 or R504. Unaltered portions of the existing building or building supply system shall not be required to comply with this code.

R501.2 Existing buildings.

Except as specified in this chapter, this code shall not be used to require the removal, alteration, or abandonment of, nor prevent the continued use and maintenance of, an existing building or building system lawfully in existence at the time of adoption of this code.

R501.3 Maintenance.

Buildings and structures, and parts thereof, shall be maintained in a safe and sanitary condition. Devices and systems that are required by this code shall be maintained in conformance to the code edition under which installed. The owner or the owner's authorized agent shall be responsible for the maintenance of buildings and structures. The requirements of this chapter shall not provide the basis for removal or abrogation of energy conservation, fire protection and safety systems and devices in existing structures.

R501.5 New and replacement materials.

Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for repairs, provided hazards to life, health or property are not created. Hazardous materials shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose, and location.

There is much similarity between Commercial and Residential.

Repairs are not intended to require updates to meet the current requirements.

Repairs cannot make any portion less safe or less energy efficient than it was previously.

A repair is intended to take an item that is broken and make it work at least as efficiently as it did previously.

Is Engineering, Paperwork and Calculations Required?

When is it required to provide engineering for a project?

- When it is new
- For additions
- For change of occupancy

If so, what documentation is needed?

- Computer printouts, especially for performance based.
- Residential – Blower door test documentation.

Computer Software

Numerous programs are available to verify code compliance. Each program provides a report or a variety of reports that may be used for compliance.

Some programs provide inspection checklists specific to the items that were used for that design. These can be helpful to both the installers and inspectors to verify proper products and installation.

SUMMARY

Energy is important

All trades need to work together for the systems to operate efficiently and properly.

The methods for design include:

- **Prescriptive** – Follow the code.
- **Performance** – Generally using computer programs to model how the building will use energy.

Determine if you need the Residential or Commercial section.

Use the Table of Contents and the Code sections to determine mandatory requirements.

1
2 We have only touched the surface!

3
4 Please continue to research this volume
5

6 **WRAP UP**

- 7
8
- Exam
 - 9 • Submitting questions
 - 10 • Certificate
- 11

12 **End of Presentation**

13
14 We hope you found the information interesting and useful.
15

16 **Final Course Notices**

17 **Final Exam requirement**

18
19
20 When you have completed the required course, you must still pass the final exam. You will find the link to
21 open the exam on the same course details page where you view your time requirement.
22

23 Click on the course exam link to begin taking your course final exam. You are allowed multiple attempts
24 to pass the final exam with a 70%.
25

26 You may re-launch the course to find answers to specific questions but only do so AFTER you have
27 completed the exam.
28

29 **IF YOU EXIT THE EXAM BEFORE IT IS COMPLETE YOU WILL FAIL THE EXAM!**

30
31 Do not exit the exam until it is complete. After you have completed the exam, review the course, and
32 make your second attempt to pass with 70%.
33

34 When you have completed the exam and scored 70%, you are now complete with the entire course and
35 curriculum. You may print a hard copy of your course completion certificate.
36

37 I hereby certify that I have personally (and without assistance) completed this Continuing Education
38 Course and Final Examination in the prescribed time.
39

40 **Thank you for participating in our online education course!**
41
42

Chapter 7

SWIMMING POOL ELECTRICAL SAFETY

1- hour online continuing education course

COURSE TOPICS

- Section 01 Introduction and Course Administration
- Section 02 Electrical Information and Explanations
- Section 03 The Art of Pool and Spa Maintenance
- Section 04 Wrap-Up and Final Course Completion Instructions

SECTION 01 - INTRODUCTION AND COURSE ADMINISTRATION

- 1.01 - Time Requirements and Course Completion
- 1.02 – Purpose
- 1.03 – History
- 1.04 – The Empowering Legislation
- 1.05 – New Rule FAC 61G4-12.011(16)
- 1.06 – New Rule FAC 61G4-18.001
- 1.07 – Current Issues and Reasons for Electrical CE

Section 1.01 - Time Requirements and Course Completion

Meeting the Minimum Time Requirements

As prescribed by your licensing board, you are required to complete the entire 1-hour online course. To ensure that you meet this requirement, the actual time you spend in the course is monitored by the Gold Coast Learning Management System (LMS).

If you can view all the material in less than the minimum time requirement, the course will not be considered complete and will show a status of ***“In Progress.”***

Your time requirement does not have to be met in one sitting since the LMS keeps track of your cumulative time.

To check how much time, you have spent in the course, return to the Program Details page and click on the ***Minimum Time Requirement link*** next to the presentation title.

This 1-hour course (60 minutes minimum course time) is designed to help contractors and industry professionals comply with the various regulations which affect them.

Completing the Course

To complete the presentation, reopen it and reread/review any of the course materials until the prescribed minimum time requirement has been met. (Remember to click ***“Yes”*** when asked if you would like to resume where you left off!).

When you satisfy the minimum time requirement, the status will change from ***“In Progress”*** to ***“Completed.”*** You must also view each slide within the presentation for it to be marked as ***“Completed.”***

After you have completed this presentation, you will be eligible to take the course final exam, which you must pass to obtain the course credit. The final exam instructions are provided at the end of this presentation.

1
2 It is important that you view each slide in this presentation.
3

4 **Section 1.02 – Purpose**

5 6 **The Purpose of the Course, and Why You are Taking It**

7
8 Your Safety

9 For the safety of your workers

10 For the safety of your customers

11 Because the law requires this education

12 Meet your CE requirement of 61G4-18.001 (2)(g)

13 Understanding this is now a requirement of the law and it is to protect them and more importantly the
14 public.

15 16 **Section 1.03 – History**

17
18 For many years there was a gray area of interpretation as to what a Licensed Pool Contractor could do
19 when performing maintenance on electrically powered pool equipment.
20

21 **F.S. 489.105 (I) "Swimming pool/spa servicing contractor"**

22
23 Means a contractor whose scope of work involves, but is not limited to, the repair and servicing of a
24 swimming pool, or hot tub or spa, whether public or private, or otherwise, regardless of use. The scope of
25 work includes the repair or replacement of existing equipment, any cleaning or equipment sanitizing that
26 requires at least a partial disassembling, excluding filter changes, and the installation of new pool/spa
27 equipment, interior refinishing, the reinstallation or addition of pool heaters, the repair or replacement of
28 all perimeter piping and filter piping, the repair of equipment rooms or housing for pool/spa equipment,
29 and the substantial or complete draining of a swimming pool, or hot tub or spa, for the purpose of repair
30 or renovation.

31
32 The problem is when the equipment to be installed, repaired, or replaced is connected and powered by
33 electric wires.

34
35 Who can disconnect/reconnect?

36
37 Is this within the scope of a Swimming Pool/Spa Contractor?

38
39 Is a Swimming Pool Contractor obligated to subcontract to an electrician?

40
41 The statute did not speak clearly to this.
42

43 What was allowed in one part of the state was not allowed in others based on interpretation of the same
44 statute.
45

46 **Section 1.04 - The Empowering Legislation**

47
48 **The CILB has statutory authority to make changes to their rules.**

49
50 **F.S. 489.101 Purpose.**

51
52 " The Legislature deems it necessary in the interest of the public health, safety, and welfare to regulate
53 the construction industry."
54

489.108 Rulemaking authority.

" The board has authority to adopt rules pursuant to ss. 120.536(1) and 120.54 to implement the provisions of this chapter conferring duties upon it."

After many months and many meetings and much discussion between all the "stakeholders" the following 2 rules were developed and adopted: 61G4-12.011(16) and 61G4-18.001.

Section 1.05 - 61G4-12.011 (16)

This is the definition and part of the rules created by the Board.

16) Installation or repair:

"Pursuant to section 489.105(3)(j)(k)(l), F.S., the term "installation or repair" of pool/spa equipment, as it pertains to swimming pool and spa electrical work, is defined as inclusive of installation, replacement, disconnection or reconnection of power wiring on the load side of the dedicated existing electrical disconnecting means. If installation, removal, replacement, or upgrading of this circuit is necessary, the work shall be performed by a licensed electrical contractor only. Nothing in this paragraph shall be deemed to restrict or limit in any manner the scope of work authorized by law of other contractor classifications, or other professions."

Purpose of rule change

To clear up ambiguity in F.S. 489.105 regarding installation & repair of existing pool equipment.

To align the Pool Contractors stated scope of work with what was being practiced in the field.

To give guidance to local building departments as to what license is appropriate to issue a permit to when involving the installation & repairs of electrically powered swimming pool equipment.

To allow pool contractors to legally disconnect and reconnect wiring to existing pool equipment for the purpose of servicing without unnecessarily raising the cost to the public.

This new rule became law and effective on 5/24/2017.

On load side of dedicated existing disconnecting means:

On the equipment side of the electrical current supply line. Downstream from electric current shutoff or disconnect.

Disconnect be dedicated:

Single pole electric switch.

Timeclock.

Cartridge fuse box disconnect.

Circuit breaker (only for shutoff purposes, not to be repaired or replaced!!).

Section 1.06 - 61G4-158.001

As part of the negotiations and rule making process it was agreed that if swimming pool contractors are to be allowed to perform minor electric work on pool equipment, some continuing education on the basics of electrical maintenance & safety procedures be required.

Rule 61G4-18.001 (CE) was opened as a companion rule and amended to require swimming pool contractors to complete 1 hour of CE course time on swimming pool electric topics.

The 1 hour is INCLUDED as part of the normal required 14 hours of CE every 2 years and does not increase the CE course time requirement.

This rule became law on July 19, 2017, and will be enforced beginning with the CE renewal cycle ending 8/31/2018.

This is in the FAC which is the Boards Rule. The rules are made by the Board based on what they are

1 directed to do by the Legislature through the statutory language. It is also important to understand the
2 Board is empowered by FS 489 to protect the public. Based on recent events, these changes were
3 deemed necessary.

4
5 The new rule reads:

6
7 **One (1) hour shall be required in the following topic:**

8
9 **(g) Pool electrical requirements** if license is held in the following category: Commercial pool/spa,
10 Residential pool/spa, Swimming pool/spa servicing, or Residential pool/spa servicing specialty.

11 12 **Section 1.07 - Current Issues and Reasons for Electrical CE**

13
14 Electrical systems are not generally well understood.

15
16 Code compliance (inspections) relies on visual inspection - **lack consistency**.

17
18 Poor and/or incorrect installation or maintenance.

19
20 Environments are conducive to corrosion and damage.

21
22 Issues do not stop with owner acceptance of the initial installation of the product or the end of the
23 maintenance or service call.

24
25 If you are not a trained electrician, you may not understand what is important for safety. Permits are not
26 always required, so the oversight of another set of eyes from an inspector may not occur. Pool
27 environments are conducive to corrosion and other deleterious effects on systems and equipment. Visual
28 inspection and knowledge of what is required is critical for safety.

29 30 **SECTION 02 - ELECTRICAL INFORMATION AND EXPLANATIONS**

31
32 2.01 – Objectives

33 2.02 – What is a Pool?

34 2.03 – Corrosion & Electrical Systems

35 2.04 - Impedance & Corrosion.

36 2.05 - Grounding vs. Bonding.

37 2.06 - Why Do We Ground Items?

38 2.07 – Why Do We Bond Items?

39 2.08 – The Mysterious GFCI.

40 2.09 – Relevant Codes, Standards & Definitions.

41 42 **Section 2.01 - Electrical Information Objectives.**

43
44 Provide a historical background for the rule changes.

45 Provide basic electrical information & safety training.

46 Provide Code references for your knowledge.

47 Provide information to help pool service techs visually check for obvious violations of the required safety
48 requirements.

49 Do all of this in an hour!

50 51 **Section 2.02 - Electrical Information Objectives**

52
53 **Pool Definition:** According to FBC, a pool must be **24" DEEP**.

54 **Splash pads or fountains** are **NOT** pools. They have the same electrical requirements though!

55 **Pool Not Permanent:** This is a pool but **NOT PERMANENT**. It has different electrical requirements.

56 **Kid Pools:** Not a pool as there is no circulating system. It has no electrical requirements.

Section 2.03 - Corrosion & Electrical Systems

Swimming pool construction & maintenance should be concerned with each piece of equipment connected to the pool.

A swimming pool facility is an interconnected system of heaters, filters, pumps, drains and so much more, which means that a swimming Pool Contractor needs to stay on top of all these devices to ensure a clean & safe swimming environment.

Running a pool day after day places a great amount of strain on the devices that keep the water clean and swimmers safe, and every pool manager should know just how corrosion can affect their facilities.

“Corrosion is the culprit and inspection are the only way to prevent or at least control it.”

Whether constructing a new swimming pool or providing maintenance and repair of equipment, it is important to choose the right materials to ensure adequate corrosion-resistance. In swimming pool operations, equipment is under constant exposure to moistures and various pool chemicals, which are highly corrosive.

Due to the corrosive properties of Chlorine, Muriatic Acid, salts and the weather itself the electrical components of a pool are under constant attack. These system and components should be inspected upon every visit whether for routine maintenance & servicing or repairing a specific part.

“Corrosion can take many forms, and correct selection of materials and finishes is key to preventing each type. Follow these three steps when installing or replacing electrical components: “

Select materials according to their galvanic properties. Different metals and alloys have different electrode potentials. When two different metals are electrically connected in the presence of an electrolyte, such as seawater, the more active metal will become anodic – losing electrons and increasing its oxidation state in a process known as galvanic corrosion. Galvanic corrosion can be minimized by selecting metals close together in the galvanic series.

Use protective coatings. Various finishes can be applied to help isolate metallic surfaces from the surrounding corrosive environment. The most familiar example is ordinary paint applied to steel to prevent rust, but there are many other methods including baked enamel, epoxy powder coat, and PVC coating.

Choose nonmetallic components. Manufacturers are increasingly offering nonmetallic products that are completely impervious to the environments and substances that can corrode metals.

Section 2.04 - Impedance & Corrosion

What is impedance?

Think of the word: **IMPEDE** which means “to hinder”. Simply put, impedance is a number measuring the resistance an electric circuit or wire to the flow of an AC electrical current.

When impedance becomes too great for a given flow of AC electrical current the result is excessive heat being built up in the wire or circuit. If this heat becomes too great there is an increasing chance of fire being created.

Impedance and required AC current for an electrically powered pool component is the reason why certain gauge wires are specified for the connect to and from electrical components.

The fact is that corrosion will many time increase the impedance of a wire or the connections of wires to the components.

1 All electrical connection to pool equipment should be checked on a regular basis. If corrosion is setting
2 in, sometimes a simple cleaning and reconnecting is all that is needed. In more severe instances, the wire
3 or connection must be replaced.

4
5 A licensed pool professional should always perform a safety inspection of the electrically powered
6 components of the pool for safety issues much as a car mechanic will perform a safety inspection when a
7 car is in for an oil change.
8

9 **Section 2.05 - Grounding vs. Bonding**

10 **What does “Grounding” mean?**

11
12
13 The National Electrical Code (NFPA 70) defines the word **“Ground”** as the **earth**.

14 We think of something being grounded as having a safety wire, the green conductor. It is never used
15 during normal operation; it only comes into play during a ground fault.

16 This conductor is used only in case of a ground fault and is intended only to carry current long enough to
17 clear an overcurrent device. The bonding conductor is always carrying voltage and/or current.
18

19 **Ground to the earth.**

20
21 **Ground Fault:** An unintentional, electrically conducting connection between an ungrounded conductor of
22 an electrical circuit and the normally non-current-carrying conductors, metallic enclosures, metallic
23 raceways, metallic equipment, or earth.

24 **Grounded (Grounding):** Connected (connecting) to ground or to a conductive body that extends the
25 ground connection.

26 **Grounded, Solidly:** Connected to ground without inserting any resistor or impedance device.

27 **Grounded Conductor:** A system or circuit conductor that is intentionally grounded.
28

29 **A ground fault is not a short circuit!**

30
31 **A short circuit** is when the wires intended to be part of the circuit touch each other, and generally go
32 boom!!

33 **A ground fault** is when electricity goes through an unintended path, such as the case of the motor, or
34 you. The ground wire is used to carry to carry this current, referred to as fault or overcurrent, we hope, in
35 order to open the fuse or circuit breaker ahead of the circuit This is referred to as clearing the fault or
36 opening the overcurrent device.

37 **A bond wire** is always carrying voltage and current because it is making sure there is no difference of
38 potential between the connected items. That is why it is bigger, and it will protect you, if you, and your
39 customer, make sure it is in place, the right size and properly connected.
40

41 **Section 2.06 - Why Do We Ground Items?**

42
43 **This is a ground fault.** It is important you understand these concepts and theories. The topics below,
44 show what they are, and how a ground fault is being created, not a short circuit.

45 To clear ground faults.

46 Grounding is not related to a short circuit.

47 A ground fault is an unintended path.

48 A GFCI would protect this individual!

49 A breaker or fuse will not!
50

Section 2.07 - Why Do We Bond Items?

Bonding is one of the most important items around pools. All the metal around the electrical service is bonded to the neutral for protection and ensures stability of the voltage once attached to earth. All metal piping systems including water, metal ducts, building steel and numerous other items, are bonded to prevent arcing, sparking, and limit shock hazards. Tying everything together prevents voltages traveling between the various services, protecting the users of the systems.

- It eliminates voltage gradients.
- Very simply, for safety!
- It eliminates voltage differences.
- It is required by the governing Codes.
- It prevents shock hazards from developing.

Bonding the Pump Motor

- If not done, this is a blatant violation and life safety hazard!
- It must be installed initially by electrician.
- Pool contractors must inspect, maintain, and repair if necessary.
- Critical to proper safety.
- Pool contractors must check for integrity during every visit.

The importance of bonding and grounding in swimming pools, equipment, deck and adjacent structures and cannot be overstated.

The grounded circuits of electrically powered pumps and equipment need to have an effective return path from the equipment to the power source in order to function properly.

In addition, non-current-carrying metallic components in a swimming pool facility, such as structural steel, ladders, slides, diving boards and screen enclosures need to be electrically interconnected so voltage potential cannot exist between them.



Section 2.08 - The Mysterious GFCI

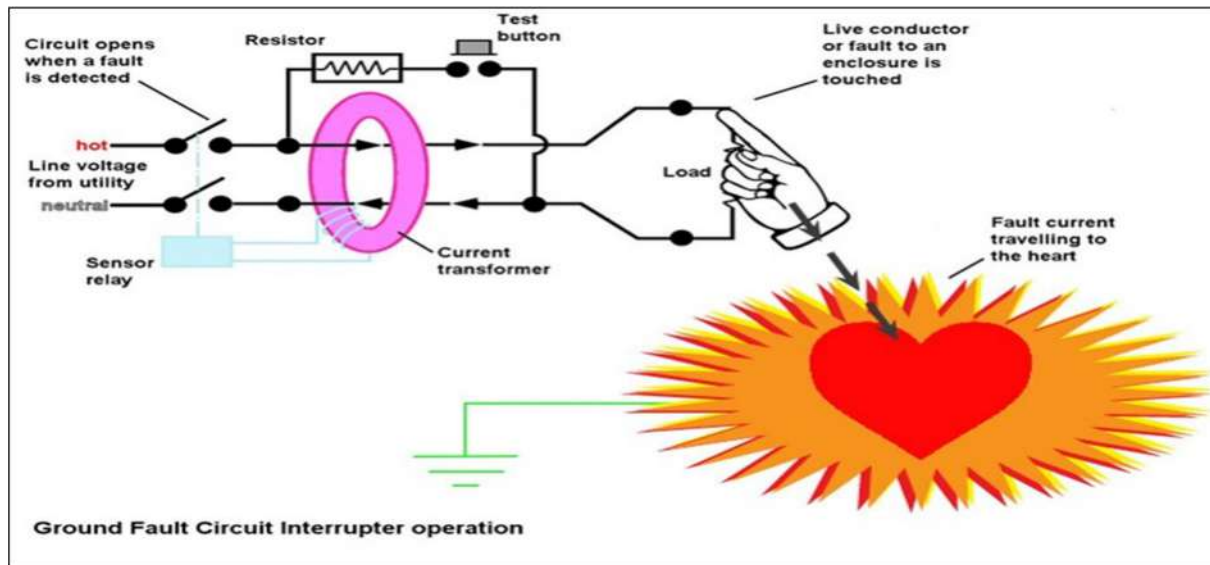
A GFCI is a simple device. It stands for Ground Fault Circuit Interrupter and will not clear a short circuit.

It monitors the hot and neutral for any imbalance in current. The imbalance can be on the hot or neutral.

Often consumers do not understand them, and they also think it has an effect when someone is caught between the hot and neutral. **A GFCI ONLY detects ground faults and that needs to be stressed.** A ground fault is when EITHER the hot or neutral current is diverted from the circuit conductors through an alternate path.

If for example, a person contacts the hot or neutral wire and conducts a flow of electricity to earth, the current transformer shown in the diagram (shown on the next slide) senses a difference of electrical flow between the hot and neutral. When this flow exceeds the 5-mA threshold, the device “trips” and disconnects the hot and neutral conductor from the circuit to protect the person.

Notice in the diagram, the test button simulates the same type of scenario previously mentioned and should be tested once a month, according to the manufacturer's instructions.



GFCI vs. AFCI

Ground Fault Circuit Interrupters (GFCI) help prevent burns, electric shocks, and electrocution. A GFCI has sensors that measure the current going out and the current coming back in. Normally, the current is balanced as it goes out and comes back in. However, if the current is out of balance, something is wrong. The electric current has contacted a human, or somewhere else it should not be.

The GFCI senses this and instantly shuts down the circuit, stopping the flow of electricity. Since water is an excellent electric conductor, GFCIs are important in areas where water and electricity could meet, such as bathrooms, kitchens, laundry rooms and garages.

GFCI vs. AFCI

Arc Fault Circuit Interrupters (AFCI) help prevent electric fires. An AFCI should never be installed in place of or as a substitute for a GFCI.

Electricity can leak out of damaged or decaying wires and start a fire. These fires spread quickly in the wiring behind walls. Electric fires cause more damage than other types of fire and are twice as deadly. AFCIs sense that electricity is leaking from the electric system and shut electricity off before overheating happens.

Basically, GFCIs prevent shocks, and AFCIs prevent fires. **By law BOTH MUST be installed by a qualified electrician.**

Section 2.09 - Relevant Codes, Standards, & Definitions

Relevant Standards: NEC – Article 680

This is the section of the electrical code that requires the bonding of metal items. This applies to motors, lights, both in and out of the pool, metal windows, metal doors, screen enclosures and basically anything metal that is in, on or around the pool that could possibly become energized. Yes, even the copper shower located on the pool deck if it is within 5 feet.

680.26(B) Bonded Parts

- Conductive Pool Shell
- Perimeter Surfaces
- Metallic Components
- Underwater Lighting
- Metal Fittings
- Electrical Equipment
- Fixed Metal Parts

7th Edition FBC - Residential: Chapters 42 & 45

“A ‘Swimming Pool Private’ means any structure, located in a residential area, that is intended for swimming or recreational bathing and contains water **over 24 inches deep**, including, but not limited to, in-ground, above-ground, and on-ground swimming pools; hot tubs; and non-portable spas.”

Earlier we discussed what a pool might be. The Florida Building Code has one definition, and the National Electrical Code has a different definition.

This is problematic if you do not understand why. The Building Code has specific concerns for safety as does the electrical code. Electrically, we need to be *incredibly careful around bodies of water* that contain minerals, dissolved solids and other chemicals.

The electrical code rules when those regulations apply, and the building code governs when those definitions apply.

A “**public swimming pool**” or “**public pool**” means a single watertight structure of concrete, masonry or other approved materials that is located either indoors or outdoors, used for bathing or swimming by humans, and filled with a filtered and disinfected water supply, together with buildings, appurtenances and equipment used in connection therewith. A public swimming pool or public pool shall mean a conventional pool, spa-type pool, wading pool, special purpose pool, interactive water feature or water recreation attraction, to which admission may be gained with or without payment of a fee and includes, but is not limited to, pools operated by or serving camps, churches, cities, counties, day care centers, group home facilities for eight or more clients, health spas, institutions, parks, state agencies, schools, subdivisions, or the cooperative living-type projects of five or more living units, such as apartments, boardinghouses, hotels, mobile home parks, motels, recreational vehicle parks, and townhouses. The term does not include a swimming pool located on the grounds of a private residence.

The Definition of a Pool

SWIMMING POOL. Any structure, basin, chamber, or tank containing an artificial body of water for swimming, diving or recreational bathing located in a residential area serving four or fewer living units having a depth of 2 feet (610 mm) or more at any point as defined in Section 515.25, Florida Statutes, or the body of water is a public pool as defined in Section 514.011, Florida Statutes.

ELECTRICAL INFORMATION AND EXPLANATIONS

- 3.01 – Maintenance Items of Concerns
- 3.02 – Is a Permit Required
- 3.03 – Inspecting the System and Identifying the Parts
- 3.04 – Applicable NEC Sections
- 3.05 – Insulation
- 3.06 – Lighting
- 3.07 – Wiring Methods
- 3.08 – Finding More Information

SECTION 3.01 - MAINTENANCE ITEMS OF CONCERN

As a service technician, it is imperative that you be the expert to protect your customer and their friends. You have a responsibility to look at the overall system. If you see problems or concerns, it should be noted. If it is a life safety threat, other actions may be required.

Items of Concerns

- Pumps
- Lighting
- Around the pool
- In the pool
- Receptacles
- Disconnects.
- Wiring methods
- Corrosion

Section 3.02 - Is a Permit Required?

Florida Building Code – Building - Section 105.1 Permit Required.

The code goes on to say that with the permission of the building official, minor repairs not impacting safety may be done without a permit.

Some areas have a published list of what is allowed to be done without permits. In other areas, you need to contact the building department to find out if a permit is required.

Regardless of whether a permit is required or not, code compliance is required by section 102.2 of Chapter 1 of the Florida Building Code - Building.

Section 3.03 - Inspecting the System & Identifying the Parts

Pumps

Virtually ALL pool, spa, fountain, hydro-massage, and so on type pumps require GFCI protection. Make sure they are working, push the button and record it on the ticket.

Code requirements are based solely on safety. Manufacturer's instructions must also be followed. Pumps REQUIRE a minimum #12 equipment ground wire. Most pumps also require connection to the bonding grid by a #8 solid copper conductor. The connection of these 2 conductors is a life safety requirement. While the GFCI would seem to be sufficient for the safety of the overall system, this is the belt and suspenders approach to assuring safety and proper operation.

GFCI Receptacle

The GFCI may be a receptacle, a circuit breaker, or even a GFCI protector. If any portions of the protective systems are found to be missing or non-operational, they should be noted and be sure to tell the owner. **Never by-pass or remove it.**

If these items affect the life safety portion of the overall system, such as a missing bond wire or GFCI that does not test properly, **DO NOT TURN ON THE SYSTEM** and advise the owner that an electrician is required before energizing. **Always make sure the pump is grounded and bonded.**

Be aware: the energy code may require a 2-speed motor.



Section 3.04 - Applicable NEC Sections

Be aware of and know how to find and reference each of these NEC sections:

- 680.6 Grounding
- 680.11 Equipment Rooms and Pits
- 680.12 Maintenance Disconnecting Means
- 680.21 Motors Requirements

1) General: The branch circuits for pool-associated motors shall be installed in rigid metal conduit, intermediate metal conduit, rigid polyvinyl chloride conduit, reinforced thermosetting resin conduit, or Type MC cable listed for the location. Other wiring methods and materials shall be permitted in specific locations or applications as covered in this section. Any wiring method employed shall contain an insulated copper equipment grounding conductor sized in accordance with 250.122 but not smaller than 12 AWG.

680.21 Motor Requirements

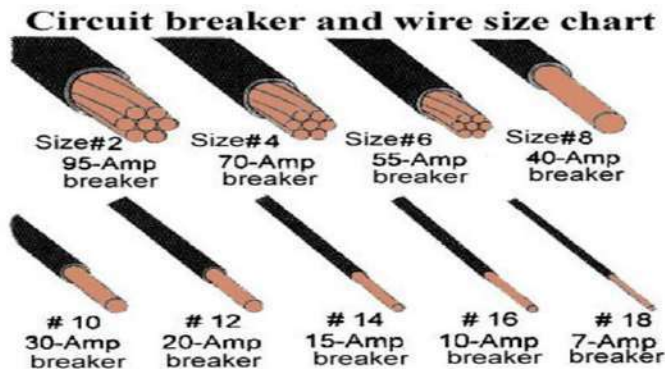
No matter the wiring method, the electrical code does not want to rely on the wiring method for the ground fault return path. The required #12 insulated copper conductor, run with the circuit conductors, ensures a low impedance path to clear any ground faults and, will hopefully be a lower resistance than any person or other connection that may interfere with clearing the fault. Clearing the fault, means tripping the circuit breaker or blowing the fuse.

The other code section referred to here, 250.122, is a table in the electrical code that provides the size of the required equipment grounding conductor based on the size of the fuse or circuit breaker.

Section 3.04 - Applicable NEC Sections

680.21 Motor Requirements

A representation of wire sizes. There will be writing on the insulation indicating the size. **Verify it!**



On or Within Buildings: Where installed on or within buildings, electrical metallic tubing shall be permitted.

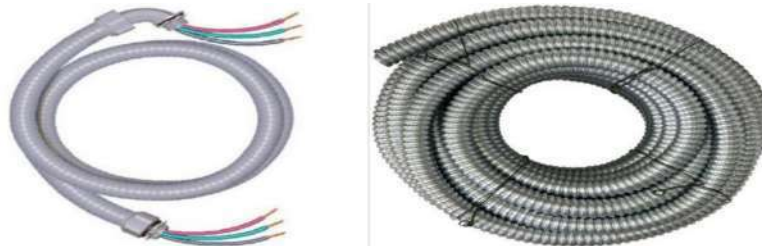
Flexible Connections: Where necessary to employ flexible connections at or adjacent to the motor, liquid tight flexible metal or liquid tight flexible nonmetallic conduit with approved fittings shall be permitted.

It is often necessary to provide a flexible connection for the electric supply going to the motor. This prevents the transmission of vibrations and helps ensure the ongoing integrity of the electrical connection. Whatever acceptable wiring method is used, remember to be sure to use the proper fittings. Fittings for these wiring methods are listed for specific types, such as metallic or non-metallic and type A or type B.

Section 3.05 – Insulation

Metallic Flexible Conduit

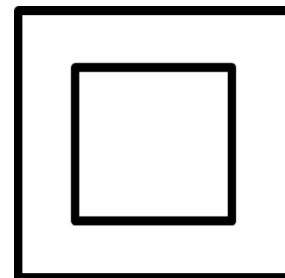
The most common flexible wiring methods – Metallic Flexible Conduit (Sealtite for outside, Greenfield for inside), and Non-Metallic Flexible Conduit, probably the best option. Each one requires fitting listed to be used with that wiring method.



Double Insulated Motor Bonding Requirement

Double insulated means the pump has an extra layer of protection and all the electrical parts are located within a non-conductive housing. This means you can't touch any of the electrical parts. The symbol will be found on the nameplate.

A listed cord-and-plug connected pool pump incorporating an approved system of double insulation that provides a means for grounding only the internal and non-accessible, non-current-carrying metal parts of the pump shall be connected to any wiring method recognized in Chapter 3 that is suitable for the location. Where the bonding grid is connected to the equipment grounding conductor of the motor circuit in accordance with the second sentence of 680.26(B)(6)(a), the branch-circuit wiring shall comply with 680.21(A).



A bonding wire does not have to be connected to the motor itself if the motor is double insulated and the cord and plug to the motor is grounded properly.

New In The Current Code

(C) GFCI Protection. Outlets supplying pool pump motors connected to single-phase, 120 volt through 240-volt branch circuits, rated 15 or 20 amperes, whether by receptacle or by direct connection, shall be provided with ground-fault circuit interrupter protection for personnel.

Section 3.06 – Lighting

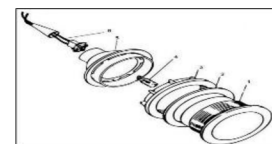
Be aware of and know how to find and reference each of these sections:

680.22: Lighting, Receptacles, and Equipment

(B): Luminaires, Lighting Outlets, and Ceiling-Suspended (Paddle)Fans

680.23: Underwater Luminaires

Lighting in and around pools has always been popular. The hazard for lighting in and around pools has always been a concern. In some cases, especially indoors, we may also have ceiling lights and/or ceiling fans. We need to be sure if these are close to the pool, they are bonded and protected by GFCI. There are locations that are prohibited from having these items. In any case, they need to be listed for the use and location.



1 Wet-Niche Luminaire

2
3 A wet niche is currently the most common type of fixture and requires a bond
4 in the niche that attached to the bonding grid. As we move more and more to
5 LED, the next types of fixtures will reduce electrical consumption and the way
6 they are installed.

7
8 **Understand the difference!** Even if a wet niche is changed to an LED, the
9 bonding of the niche is required.



10 Dry-Niche Luminaire

11
12 Dry niche luminaires are dry and gasketed, they do not contact pool water.

13 No-Niche Luminaire

14
15 This style penetrates the entire shell with a waterproof housing. All service is done from the rear or
16 requires the pool to be drained for service!

17 Through-Wall Lighting Assembly

18
19 For through wall installations, a professionally installed pool transformer is still required.

20 Remember That Bonding Discussion?

21
22 **NEC 680.23(5) Luminaire Bonding:** The luminaire shall be bonded to, and secured to, the forming shell
23 by a positive locking device that ensures a low resistance contact and requires a tool to remove the
24 luminaire from the forming shell. Bonding shall not be required for luminaires that are listed for the
25 application and have not non-current-carrying metal parts.

26
27 **Note the wording here.** We are counting on this connection to be sure the ring is bonded and grounded.
28 This may also serve as our water bond for the pool water. We need to ensure a low impedance
29 connection - no tie wraps!

30 Section 3.07 - Wiring Methods

31 NEC 680.22 Lighting, Receptacles, and Equipment

32 (A) Receptacles.

33
34 **1. Required Receptacle, Location.** Where a permanently installed pool is installed at a dwelling unit(s),
35 no fewer than one 125-volt, 15-or 20-ampere receptacle on a general-purpose branch circuit shall be
36 located not less than 1.83 m (6 ft.) from, and not more than 6.0 m (20 ft.) from, the inside wall of the pool.
37 This receptacle shall be located not more than 2.0 m (6 ft. 6 in.) above the floor, platform, or grade level
38 serving the pool.

39
40 **2. Circulation and Sanitation System, Location.** Receptacles that provide power for water-pump
41 motors or for other loads directly related to the circulation and sanitation system shall be located at least
42 3.0 m (10 ft.) from the inside walls of the pool, or not less than 1.83 m (6 ft.) from the inside walls of the
43 pool if they meet all of the following conditions:
44 Consist of single receptacles.

- 45 • Employ a locking configuration.
- 46 • Are of the grounding type.
- 47 • Have GFCI protection.

1 The general rule is to hard wire the pump. If the pump is connected by way of a receptacle and cord cap,
2 it must meet these requirements.

3
4 **3. Other Receptacles, Location.** Other receptacles shall be not less than 1.83 m (6 ft.) from the inside
5 walls of a pool.

6
7 Where a pool is installed at a dwelling unit, not fewer than one receptacle shall be located not less than
8 6ft. and not more than 20 ft. from the inside wall of the pool. This outlet must not be more than 6ft. 6
9 inches above the floor, platform or grade level serving the pool.

10
11 **4. GFCI Protection.** All 15- and 20-amp, single phase, 125-volt receptacles located within 6.0 m (20 ft.) of
12 the inside walls of the pool shall be protected by a ground-fault circuit interrupter.

13
14 **5. Measurements.** In determining the dimensions in this section addressing receptacle spacings, the
15 distance to be measured shall be the shortest path the supply cord of an appliance connected to the
16 receptacle would follow without piercing a floor, wall, ceiling, doorway with hinged or sliding door, window
17 opening, or another effective permanent barrier.

18 **Section 3.08 - Finding More Information**

19 This is the end of this presentation, but remember the learning does not end here:

20
21 As a licensed Swimming Pool Contractor, you have a direct impact on the quality of life for the public.

22
23 As a licensed Swimming Pool Contractor, you have an obligation to provide services in a professional
24 manner which protects the consumer from harm.

25
26 Please be sure to understand what you are working on and remember the codes are in place for safety.
27 Your understanding and attention will ensure a safe installation & maintenance.

28
29 Additional information regarding electrical systems and pools can be obtained by visiting:

30
31 Florida Swimming Pool Association
32 www.floridapoolpro.com

33
34 National Swimming Pool Foundation
35 www.NSPF.org

36
37 Association of Pool & Spa Professionals
38 www.apsp.org

39
40 United Pool & Spa Association
41 www.upsaonline.com

1 **SECTION 4 - WRAP-UP AND FINAL COURSE COMPLETION**

2 **INSTRUCTIONS**

3
4 **Thank you for participating in our online Continuing Education course!**

5
6 Please read each of the remaining slides carefully, as they provide important information regarding how
7 to:

- 8
9 1. Complete the online course.
10 2. Take your course Final Exam.
11 3. Print your Certification of Completion.
12

13 **Section 4.01 - Wrap-Up and Final Course Completion Instructions**

14
15 To complete this online course, you must view **EVERY** slide in this presentation. When you have
16 completed this presentation, you must still pass the final exam.
17

18 After finishing this presentation, click on the course exam link to begin taking your end-of-course final
19 exam. You will find the link to open the exam on the Program Details page.
20

21 You are allowed multiple attempts to pass the final exam and **must achieve a passing score of 100%**.
22 If you did not pass after completing the exam, review the course and make another attempt. You may do
23 this as many times as necessary.
24

25 **IF YOU EXIT THE EXAM BEFORE IT IS COMPLETE, YOU WILL FAIL THE EXAM**

26 Any unanswered questions will be marked incorrect. Do not exit the exam until every question is
27 answered. To pass the final exam, you must receive a 100% passing score.
28

29 When you have completed the exam and passed with a score of 100%, you have successfully completed
30 the entire course and curriculum.
31

32 Print a hard copy of your course Certificate of Completion. The link to the document will be available in
33 the Documents Available/Issued section of the Courses and Exams page.
34

35 It will have the following text: *"I hereby certify that I have personally (and without assistance) completed
36 this Continuing Education Course and the Final Exam."*
37

38 This is the last slide in this presentation. Please exit this presentation and return to the Program Details
39 page.
40

41 If you have met the minimum time requirement for this section, the status on the Program Details page
42 will read as "Completed." If the status reads as "In Progress," click the "Minimum Time Required" link to
43 determine how much longer you have to meet the minimum time requirement of this section. Then,
44 reopen and review the material for the required amount of time remaining.
45

46 When you have completed this section, please proceed to the Final Exam.
47

1
2
3
4
5
6

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Chapter 8

KNOW YOUR BUILDING CODE!

EIGHTH EDITION (2023)

FBC-BUILDING

1
2
3
4 The Florida building codes that will be reviewed in this chapter are:

- 5
6
- 7 • Building
 - 8 • Residential
 - 9 • Existing Building
 - 10 • Plumbing
 - 11 • Mechanical

12 FLORIDA BUILDING CODE

13
14 The next section provides information on some of the key components of the FBC.

15 CHAPTER 1 SCOPE AND ADMINISTRATION

16
17 Chapter 1 is divided into two sections. Part I is Scope and Application; Part II is Administration and Enforcement.

18 Part I – Scope and Application

19 101.3 Intent

20
21
22
23 The purpose of this code is to establish the minimum requirements to provide a reasonable level of safety, public health, and general welfare through structural strength, means of egress in facilities, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire and other hazards attributed to the built environment and to provide a reasonable level of safety to fire fighters and emergency responders during emergency operations.

24
25
26 In general, the purpose of the building code is to provide public safety and safety of the emergency officers in case of fire or any other catastrophic situations. The building code is the minimum standard of construction. The safety of the building is to give any one trapped or rescuers 60 minutes to get out of the building.

27
28 Reasonable degree of safety to public in the built environment:

- 29
30
- 31 • Code is for minimum requirements

32
33 Structurally sound buildings provide:
34 Life safety to public

35
36 Fire resistant construction provides:

- 37
38
- 39 • Life safety to public
 - 40 • Life safety to firefighters
 - 41 • Property protection for building and exposures

42
43 Egress provisions:

- Clearly defined exits routes that are accessible to evacuate the building quickly and safely in case of a fire

These codes are available online for you to view at floridabuilding.org

This is especially important as this is the part that many contractors get in trouble with. So, let's review few of these.

102.1 General

Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable. Where, in any specific case, different sections of this code specify different materials, methods of construction, or other requirements, the most restrictive shall govern.

Part II Administration and Enforcement

105.2 Work Exempt from Permit

Exemptions from permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code. Permits shall not be required for the following:

Gas

- Portable heating appliance
- Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe

Mechanical

- Portable heating appliance
- Portable ventilation equipment
- Portable cooling unit
- Steam, hot or chilled water piping within any heating or cooling equipment regulated by this code
- Replacement of any part that does not alter its approval or make it unsafe.
- Portable evaporative cooler
- Self-contained refrigeration system containing 10 pounds (4.54 kg) or less of refrigerant and actuated by motors of 1 horsepower (0.75 kW) or less
- The installation, replacement, removal, or metering of any load management control device

Plumbing

- The stopping of leaks in drains, water, soil, waste, or vent pipe, provided, however, that if any concealed trap, drainpipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work and a permit shall be obtained and inspection made as provided in this code.
- The clearing of stoppages or the repairing of leaks in pipes, valves or fixtures and the removal and reinstallation of water closets, provided such repairs do not involve or require the replacement or rearrangement of valves, pipes, or fixtures.

[A] 105.2.1 Emergency Repairs

Where equipment replacements and repairs must be performed in an emergency situation, the permit application shall be submitted within the next working business day to the building official.

[A] 105.2.2 Minor Repairs

Ordinary minor repairs may be made with the approval of the building official without a permit, provided the repairs do not include the cutting away of any wall, partition or portion thereof, the removal or cutting of any structural beam or load-bearing support, or the removal or change of any required means of

1 egress, or rearrangement of parts of a structure affecting the egress requirements; nor shall ordinary
2 repairs include addition to, alteration of, replacement or relocation of any standpipe, water supply, sewer,
3 drainage, drain leader, gas, soil, waste, vent or similar piping, electric wiring systems or mechanical
4 equipment or other work affecting public health or general safety, and such repairs shall not violate any of
5 the provisions of the technical codes.
6

7 **105.4.1 Permit Intent**

8
9 A permit issued shall be construed to be a license to proceed with the work and not as authority to violate,
10 cancel, alter, or set aside any of the provisions of the technical codes, nor shall issuance of a permit
11 prevent the building official from thereafter requiring a correction of errors in plans, construction, or
12 violations of this code. Every permit issued shall become invalid unless the work authorized by such
13 permit is commenced within 6 months after its issuance, or if the work authorized by such permit is
14 suspended or abandoned for a period of 6 months after the time the work is commenced.
15

16 **105.4.1.1**

17
18 If work has commenced and the permit is revoked, becomes null and void, or expires because of lack of
19 progress or abandonment, a new permit covering the proposed construction shall be obtained before
20 proceeding with the work.
21

22 **105.4.1.2**

23
24 If a new permit is not obtained within 180 days from the date the initial permit became null and void, the
25 building official is authorized to require that any work which has been commenced or completed be
26 removed from the building site. Alternately, a new permit may be issued on application, providing the
27 work in place, and required to complete the structure meets all applicable regulations in effect at the time
28 the initial permit became null and void and any regulations which may have become effective between the
29 date of expiration and the date of issuance of the new permit.
30

31 **105.4.1.3**

32
33 Work shall be considered to be in active progress when the permit has received an approved inspection
34 within 180 days. This provision shall not be applicable in case of civil commotion or strike or when the
35 building work is halted due directly to judicial injunction, order, or similar process.
36

37 **105.4.1.4**

38
39 The fee for renewal reissuance and extension of a permit is set forth by the administrative authority.
40

41 **[A]110.3 Required Inspections**

42
43 The following was added under the "Building Inspection Area".
44

45 4. Exterior wall coverings. Shall at a minimum include the following building components in progress
46 inspections:
47

- 48 • Exterior wall coverings and veneers
- 49 • Soffit coverings
- 50
- 51 • **Note** – New language added specifically requiring in-progress inspections of exterior wall
52 coverings and soffits.
53

CHAPTER 2 DEFINITIONS

This chapter is all about definitions. Sometimes you might find the answer that you are looking for by just reading the definition. Here are some of the important definitions.

The following reflect the changes made by the 7th Edition in this chapter.

Definitions: Deleted

AUTOCLAVED AERATED CONCRETE (AAC). Low density cementitious product of calcium silicate hydrates, whose material specifications are defined in ASTM C1386.

- **Note** – Definition deleted.

Definitions: Revised

[A]CHANGE OF OCCUPANCY. A change in the ~~purpose or level of activity within~~ use of a building that involves or a portion of a building which results in one of the following:

- 1. A change of occupancy classification.
- 2. A change from one group to another group within an occupancy classification
- 3. Any change in use within a group for which there is a change in the application of the requirements of this code.
- **Note:** Definition revised to clarify that change of occupancy specifically includes a change of occupancy classification and a change from one group to another group within an occupancy classification.

COMMON PATH OF EGRESS TRAVEL. That portion of ~~the~~ exit access travel distance measured from the most remote point ~~within a story of each room, area or space~~ to that point where the occupants have separate and distinct access to two exits or exit access doorways.

- **Note** - Definition revised to clarify that common path of egress travel and exist access travel distance are measured the same way. While the terminus of each is different, the route is the same.

CONVENTIONAL LIGHT-FRAME CONSTRUCTION. ~~A type of construction~~ Construction whose primary structural elements are formed by a system of repetitive wood-framing members. ~~See Section 2308 Chapter 23~~ for conventional light-frame construction provisions.

- **Note** - Editorial corrections to change “A type of construction” to “Construction.”

[BS] DRILLED SHAFT. A cast-in-place deep foundation element, also referred to as caisson, drilled pier and bored pile, constructed by drilling a hole (with or without permanent casing or drilling fluid) into soil or rock and filling it with fluid concrete after the drilling equipment is removed.

- **Note** - Definition revised to clearly delineate from auger-cast piles.

FENESTRATION. ~~Skylights, roof windows,~~ Products classified as either vertical ~~windows~~ fenestration or skylights and sloped glazing, installed in such a manner as to preserve the weather-resistant barrier of the wall or roof in which they are installed. Fenestration includes products with glass or other transparent or translucent materials.

FENESTRATION, VERTICAL. Windows that are fixed or moveable),movable, opaque doors, glazed doors, glazed block and combination opaque/ and glazed doors. ~~Fenestration includes products with glass and nonglass glazing materials~~ installed in a wall at less than 15 degrees from vertical.

- 1 • **Note** - The definition of fenestration has been revised to address the most distinguishing
2 characteristics of that product type. A new definition of vertical fenestration has been added to
3 clearly distinguish vertical fenestrations from skylights and sloped glazing.
4

5 **EXTERIOR ELEVATED FLOORING SYSTEM.** An assembly installed over a roof assembly or other
6 exterior supporting structure ~~is any building or~~ consisting of a walking surface of pedestrian deck panels
7 or pavers mounted on pedestals using other accessory components, mechanical fasteners or adhesives
8 as required by the manufacturer's installation instructions for attaching pedestrian deck panels or pavers
9 to pedestals and other accessory components. Exterior elevated flooring systems may have pedestals
10 attached to the roof or other supporting structure ~~for which the start of construction commenced before~~
11 ~~the effective date of the community's first flood plain management code, ordinance or standard~~ or
12 pedestals installed independently of the roof or supporting structure with the restraint of the pavers at the
13 perimeter and discontinuous edges. Exterior elevated flooring systems are not part of the roof assembly.
14

- 15 • **Note** - New definitions added to correlate with new Section 3115 that addresses construction of
16 exterior elevated flooring systems. These systems are typically installed on roofs of buildings for
17 entertainment purposes but can be installed on other structures such as exterior decks.
18

19 **LIGHT-FRAME CONSTRUCTION.** ~~A type of construction~~ Construction whose vertical and horizontal
20 structural elements are primarily formed by a system of repetitive wood or cold-formed steel framing
21 members.
22

- 23 • **Note** - Editorial corrections to change "A type of construction" to "Construction."
24

25 **LOW-ENERGY POWER-OPERATED DOOR.** ~~Swinging~~ A swinging, sliding or folding door which that
26 opens automatically upon an action by a pedestrian such as pressing a push plate or waving a hand in
27 front of a sensor. The door closes automatically and operates with decreased forces and decreased
28 speeds (see "Power-assisted door" and "Power-operated door").
29

- 30 • **Note** - Definition revised to clarify that sliding or folding doors can also be low-energy power-
31 operated doors.
32

33 **PLASTIC COMPOSITE.** A generic designation that refers to wood/plastic composites ~~and~~, plastic lumber,
34 and similar materials.
35

- 36 • **Note** - Definition revised to add the term similar materials for what qualifies as a plastic
37 composite.
38

39 **PRIVATE GARAGE.** A building or portion of a building in which motor vehicles used by the owner or
40 tenants of the building or buildings on the premises are stored or kept, without provisions for repairing or
41 servicing such vehicles for profit.
42

- 43 • **Note** - Definition revised to clarify that private garages can also be used by the owner of the
44 building as well as the tenant.
45

46 **SLEEPING UNIT.** A ~~room~~ single unit providing rooms or space in which people sleep spaces for one or
47 more persons, which can also include permanent provisions for living, eating, sleeping and either
48 sanitation or kitchen facilities but not both. Such rooms and spaces that are also part of a dwelling unit
49 are not sleeping units.
50

- 51 • **Note** - Definition revised to clarify that a sleeping unit would also apply to suites as well as a
52 single bedroom.
53

54 **SMOKE-PROTECTED ASSEMBLY SEATING.** Seating served by means of egress that is not subject to
55 smoke accumulation within or under a structure for a specified design time by means of passive design or
56 by mechanical ventilation.
57

- **Note** - Definition revised to clarify that smoke-protected assembly seating applies for a specified design time by means of a passive design or by mechanical ventilation. Intended to make a distinction from open-air assembly seating.

[BS] SUBSTANTIAL STRUCTURAL DAMAGE. A condition where one or both of the following apply:

- 2. The capacity of any vertical component carrying gravity load, or any group of such components, that ~~supports~~ has a tributary area more than 30 percent of the total area of the structure's floors and roofs has been reduced more than 20 percent from its predamaged condition and the remaining capacity of such affected elements, with respect to all dead and live loads, is less than 75 percent of that required by this code for new buildings of similar structure, purpose, and location.
- **Note** - Definition revised to change Item 2 of the definition from components that "support" more than 30 percent of the total area of the structure's floors and roof to components that have a "tributary area" more than 30 percent of the total area of the structure's floors and roof.

SWIMMING POOL. Any structure ~~intended~~, basin, chamber or tank containing an artificial body of water for swimming, diving or recreational bathing ~~or wading that contains water over 24 inches~~ located in a residential area serving four or fewer living units having a depth of 2 feet (610 mm) ~~deep. This includes in-ground, aboveground and on-ground pools; hot tubs; spas and fixed or more at any point as defined in-place wading pools~~ Section 515.25, Florida Statutes, or the body of water is a public pool as defined in Section 514.011, Florida Statutes.

- **Note** - Definition of swimming pool revised for consistency with Florida Statutes 514 and 515.

VEGETATIVE ROOF. An assembly of interacting components designed to waterproof ~~and normally insulate~~ a building's top surface that includes, by design, vegetation, and related landscape elements.

- **Note** - Definition revised to correlate with ASTM D1079 by deleting the condition that a vegetative roof normally insulate a building's top surface.

VAPOR PERMEABLE MEMBRANE. The property of having a **RETARDER CLASS.** A measure of a material or assembly's ability to limit the amount of moisture vapor permeance rating of 5 perms (2.9 × 10⁻¹⁰ kg/Pa × s × m²) or greater, when tested in accordance with the that passes through that material or assembly. Vapor retarder class shall be defined using the desiccant method using Procedure A of ASTM E96. A vapor permeable material permits the passage of moisture vapor. as follows:

- Class I: 0.1 perm or less.
- Class II: 0.1 < perm ≤ 1.0 perm.
- Class III: 1.0 < perm ≤ 10 perm.
- **Note** - Definition revised to delete the term "membrane" so that the definition applies to the vapor permeance of any material. Testing in accordance with Procedure B of ASTM E96 has been added as an alternative to Procedure A

[BS] WIND-BORNE DEBRIS REGION. Areas within hurricane-prone regions located:

- 2. In areas where the ultimate design wind speed, V_{ult}, is 140 mph (63.6 m/s) or greater.

For Risk Category II buildings and other structures and Risk Category III buildings and other structures, except health care facilities, the wind-borne debris region shall be based on Figure 1609.3-(1). ~~For Risk Category IV buildings and structures and (1).~~ For Risk Category III health care facilities, the wind-borne debris region shall be based on Figure 1609.3(2). For Risk Category IV buildings and other structures, the wind-borne debris region shall be based on Figure 1609.3(3).

- **Note** - Definition revised to correlate with ASCE 7-16 by including a reference to the new Risk Category IV wind speed map.

Definitions: New

CHILDREN'S PLAY STRUCTURE. A structure composed of one or more components, where the user enters a play environment.

- **Note** – New definition added for a term used in the code.

COMBINED PILE RAFT. A geotechnical composite construction that combines the bearing effect of both foundation elements, raft and piles, by taking into account interactions between the foundation elements and the subsoil.

- **Note** - New definition added for a common deep foundation.

DELAYED ACTION CLOSER. Self-closing device that incorporates a delay prior to the initiation of closing. Delayed action closers are mechanical devices with an adjustable delay.

- **Note** - New definition added to address a type of closer that would allow time for occupants to pass through a door before closing.

EXISTING BUILDING. A building erected prior to the date of adoption of the appropriate code, or one for which a legal building permit has been issued.

- **Note** - New definition of existing building added for consistency with the Florida Building Code, Existing Building.

[F] CONTINUOUS-GAS DETECTION SYSTEM. A system or portion of a combination system that utilizes one or more stationary sensors to detect the presence of a specified gas at a specified concentration and initiate one or more responses required by this code, such as notifying a responsible person, activating an alarm signal, or activating or deactivating equipment. A self-contained gas detection and alarm device is not classified as a gas detection system.

- **Note** - A new, more generic definition of gas detection system replaces the definition for continuous gas detection system. Continuous gas sampling is now addressed in Section 916.7.

[BS] LOWEST FLOOR. The lowest floor of the lowest enclosed area, including basement, but excluding any unfinished or flood-resistant enclosure, usable solely for vehicle parking, building access or limited storage provided that such enclosure is not built so as to render the structure in violation of Section 1612.

- **Note** - Editorial change for consistency with the Florida Building Code, Residential.

OPEN-AIR ASSEMBLY SEATING. Seating served by means of egress that is not subject to smoke accumulation within or under a structure and is open to the atmosphere.

- **Note** - New definition added intended to make the distinction between smoke-protected assembly seating and outdoor smoke-protected assembly seating.

SOFT CONTAINED PLAY EQUIPMENT STRUCTURE - A children's play structure containing one or more components where the user enters a play environment that utilizes pliable materials.

- **Note:** New definition added for a term used in Section 424.

CHAPTER 3 USE AND OCCUPANCY CLASSIFICATION

Any occupancy change in any existing structure will call for an Occupancy certificate. The change in occupancy can trigger some requirements, like fire rating of the partition walls or need for accessible toilets.

Occupancy Classification

302.1 General Occupancy Classification

Occupancy classification is the formal designation of the primary purpose of the building, structure or portion thereof. Structures or portions of structures shall be classified with respect to occupancy in into one or more of the occupancy groups listed in this section. ~~A~~ based on the nature of the hazards and risks to building occupants generally associated with the intended purpose of the building or structure. An area, room or space that is intended to be occupied at different times for different purposes shall comply with all of the applicable requirements that are applicable to each of the purposes for which the room or space will be occupied. associated with such potential multipurpose. Structures ~~with~~ containing multiple occupancies or uses occupancy groups shall comply with Section 508. Where a structure is proposed for a purpose that is not specifically ~~provided for~~ listed in this code, section such structure shall be classified in the occupancy it most nearly resembles based on the fire safety and relative hazard. Occupied roofs shall be classified in the group that the occupancy it most nearly resembles, according to the fire safety and relative hazard involved, and shall comply with Section 503.1.4.

1. Assembly (See Section 303): Groups A-1, A-2, A-3, A-4 and A-5.
2. Business (See Section 304): Group B.
3. Educational (See Section 305): Group E.
4. Factory and Industrial (See Section 306): Groups F-1 and F-2.
5. High Hazard (See Section 307): Groups H-1, H-2, H-3, H-4 and H-5.
6. Institutional (See Section 308): Groups I-1, I-2, I-3 and I-4.
7. Mercantile (See Section 309): Group M.
8. Residential (See Section 310): Groups R-1, R-2, R-3 and R-4.
9. Storage (See Section 311): Groups S-1 and S-2.
10. Utility and Miscellaneous (See Section 312): Group U.

- **Note** - Section revised to provide clarification between the terms use and occupancy. New language requires occupied roofs to be classified in the group that the occupancy most nearly resembles.

Assembly Groups

303.1 Assembly Group A

Assembly Group A occupancy includes, among others, the use of a building or structure, or a portion thereof, for the gathering of persons for purposes, such as civic, social, or religious functions; recreation, food or drink consumption or awaiting transportation.

303.1.1 Small Buildings and Tenant Spaces

A building or tenant space used for assembly purposes with an occupant load of less than 50 persons shall be classified as a Group B occupancy.

303.1.2 Small Assembly Spaces

The following rooms and spaces shall not be classified as Assembly occupancies:

1. A room or space used for assembly purposes with an occupant load of less than 50 persons and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
2. A room or space used for assembly purposes that is less than 750 square feet (70 m²) in area and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.

303.1.3 Associated with Group E Occupancies

A room or space used for assembly purposes that is associated with a Group E occupancy is not considered a separate occupancy.

303.2 Assembly Group A-1

Group A-1 occupancy includes assembly uses, usually with fixed seating, intended for the production and viewing of the performing arts or motion pictures including, but not limited to:

Motion picture theaters
Symphony and concert halls
Television and radio studios admitting an audience
Theaters

303.3 Assembly Group A-2

Group A-2 occupancy includes assembly uses intended for food and/or drink consumption including, but not limited to:

- Banquet halls
- Casinos (gaming areas)
- Nightclubs
- Restaurants, cafeterias, and similar dining facilities (including associated commercial kitchens)
- Taverns and bars

Business Group**304.1 Business Group B**

Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

- Airport traffic control towers
- Animal hospitals, kennels, and pounds
- Barber and beauty shops
- Civic administration
- Dry cleaning and laundries: pick-up and delivery stations and self-service
- Educational occupancies for students above the 12th grade
- Electronic data processing
- Food processing establishments and commercial kitchens not associated with restaurants, cafeterias, and similar dining facilities not more than 2,500 square feet (232 m²) in area.
- Laboratories: testing and research
- Motor vehicle showrooms
- Post offices
- Radio and television stations
- Professional services (architects, attorneys, dentists, physicians, engineers, etc.)
- Training and skill development not in a school or academic program (this shall include, but not be limited to, tutoring centers, martial arts studios, gymnastics, and similar uses regardless of the ages served, and where not classified as a Group A occupancy).
- Ambulatory care facilities
- Banks
- Car wash
- Clinic, outpatient
- Sales rooms
- Print shops
- Telephone exchanges

1 Residential Groups

3 310.3 Residential Group R-1

5 Residential Group R-1 occupancies containing sleeping units where the occupants are primarily transient
6 in nature, including:

- 8 Boarding houses (transient) with more than 10 occupants
- 9 Congregate living facilities (transient) with more than 10 occupants
- 10 Hotels (transient)
- 11 Motels (transient)

13 310.4 Residential Group R-2

15 Residential Group R-2 occupancies containing sleeping units or more than two dwelling units where the
16 occupants are primarily permanent in nature, including:

- 18 Apartment houses
- 19 Boarding houses (nontransient) ~~with more than 16 occupants~~
- 20 Congregate living facilities (nontransient) with more than 16 occupants
- 21 Convents
- 22 Dormitories
- 23 Fraternities and sororities
- 24 Hotels (nontransient)
- 25 Live/work units
- 26 Monasteries
- 27 Motels (nontransient)
- 28 Vacation timeshare properties

- 30 • **Note** - Revised to require all nontransient boarding houses to be classified as Group R2 instead
31 of just those with more than 16 occupants.

33 310.5 Residential Group R-3

35 Residential Group R-3 occupancies where the occupants are primarily permanent in nature and not
36 classified as Group R-1, R-2, R-4 or I, including:

- 38 Buildings that do not contain more than two dwelling units
- 39 Boarding houses (nontransient) with 16 or fewer occupants
- 40 Boarding houses (transient) with 10 or fewer occupants
- 41 Care facilities that provide accommodations for five or fewer persons receiving care
- 42 Congregate living facilities (nontransient) with 16 or fewer occupants
- 43 Congregate living facilities (transient) with 10 or fewer occupants
- 44 Lodging Owner occupied lodging houses with five or fewer guest rooms

- 46 • **Note** - Revised to require that for lodging houses to be classified as Group R-3, they must be
47 owner-occupied and have 10 or fewer occupants.

CHAPTER 5 GENERAL BUILDING HEIGHTS AND AREAS

Please review the important footnotes for this table and **Table 504.4^{a, b} Allowable Number of Stories Above Grade Plane** online at codes.iccsafe.org/category/Florida

503.1.4 Occupied roofs.

A roof level or portion thereof shall be permitted to be used as an occupied roof provided the occupancy of the roof is an occupancy that is permitted by Table 504.4 for the story immediately below the roof. The area of the occupied roofs shall not be included in the building area as regulated by Section 506.

Exceptions:

1. The occupancy located on an occupied roof shall not be limited to the occupancies allowed on the story immediately below the roof where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and occupant notification in accordance with Section 907.5 is provided in the area of the occupied roof.
2. Assembly occupancies shall be permitted on roofs of open parking garages of Type I or Type II construction, in accordance with the exception to Section 903.2.1.6.

Elements or structures enclosing the occupied roof areas shall not extend more than 48 inches (1220 mm) above the surface of the occupied roof.

Exception: Penthouses constructed in accordance with Section 1510.2 and towers, domes, spires and cupolas constructed in accordance with Section 1510.5.

- **Note** - New section establishing criteria for heights and areas of buildings that have occupied roofs. An occupied roof is not included in the building area regulated by Section 506 provided the occupancy of the occupied roof is an occupancy permitted by Table 504.4 for the story immediately below the roof. Exception 1 permits the occupied roof to be any occupancy provided the building is equipped throughout with an automatic sprinkler system complying with Section 903.3.1.1 or 903.3.1.2 and occupant notification in accordance with Section 907.5 is provided in the area of the occupied roof. Exception 2 permits assembly occupancies on roofs of open parking garages of Type I or II construction in accordance with the exception to Section 903.2.1.6.

TABLE 504.3^a
ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION									
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V		
		A	B	A	B	A	B	HT	A	B	
A, B, E, F, M, S, U	NS ^b	UL	160	65	55	65	55	65	50	40	
	S	UL	180	85	75	85	75	85	70	60	
H-1, H-2, H-3, H-5	NS ^{c, d}	UL	160	65	55	65	55	65	50	40	
	S	UL	180	85	75	85	75	85	70	60	
H-4	NS ^{c, d}	UL	160	65	55	65	55	65	50	40	
	S	UL	180	85	75	85	75	85	70	60	
I-1 Condition 1, I-3	NS ^{d, e}	UL	160	65	55	65	55	65	50	40	
	S	UL	180	85	75	85	75	85	70	60	
I-1 Condition 2, I-2	NS ^{d, e, f}	UL	160	65	55	65	55	65	50	40	
	S	UL	180	85							
I-4	NS ^{d, g}	UL	160	65	55	65	55	65	50	40	
	S	UL	180	85	75	85	75	85	70	60	
R	NS ^{d, h}	UL	160	65	55	65	55	65	50	40	
	S13R	60	60	60	60	60	60	60	60	60	
	S	UL	180	85	75	85	75	85	70	60	

CHAPTER 6 TYPES OF CONSTRUCTION

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame ^f (see Section 202)	3 ^a	2 ^a	1	0	1	0	HT	1	0
Bearing walls									
Exterior ^{g, f}	3	2	1	0	2	2	2	1	0
Interior	3 ^a	2 ^a	1	0	1	0	1/HT	1	0
Nonbearing walls and partitions	See Table 602								
Exterior									
Nonbearing walls and partitions	See Section 602.4.6								
Interior ^d	0	0	0	0	0	0		0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 ^{1/2} ^b	1 ^{b, c}	1 ^{b, c}	0 ^c	1 ^{b, c}	0	HT	1 ^{b, c}	0

602 Construction Classification

TABLE 602
FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE^{a, d, g}

FIRE SEPARATION DISTANCE = X (feet)	TYPE OF CONSTRUCTION	OCCUPANCY GROUP H ^e	OCCUPANCY GROUP F-1, M, S-1 ^f	OCCUPANCY GROUP A, B, E, F-2, I, R, S-2, U ^h
X < 5 ^b	All	3	2	1
5 ≤ X < 10	IA	3	2	1
	Others	2	1	1
10 ≤ X < 30	IA, IB	2	1	1 ^c
	II B, VB	1	0	0
	Others	1	1	1 ^c
X ≥ 30	All	0	0	0

602.1 General

Buildings and structures erected or to be erected, altered, or extended in height or area shall be classified in one of the five construction types defined in Sections 602.2 through 602.5. The building elements shall have a fire-resistance rating not less than that specified in Table 601 and exterior walls shall have a fire-resistance rating not less than that specified in Table 602. Where required to have a fire-resistance rating by Table 601, building elements shall comply with the applicable provisions of Section 703.2. The protection of openings, ducts and air transfer openings in building elements shall not be required unless required by other provisions of this code.

602.1.1 Minimum Requirements

A building or portion thereof shall not be required to conform to the details of a type of construction higher than that type which meets the minimum requirements based on occupancy even though certain features of such a building actually conform to a higher type of construction.

602.2 Types I and II

Types I and II construction are those types of construction in which the building elements listed in Table 601 are of noncombustible materials, except as permitted in Section 603 and elsewhere in this code.

602.3 Type III

Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code. Fire-retardant-treated wood framing complying with Section 2303.2 shall be permitted within exterior wall assemblies of a 2-hour rating or less.

602.4 Type IV

Type IV construction (~~Heavy Timber, HT~~) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid ~~or wood~~, laminated wood, heavy timber (HT) or structural composite lumber (SCL) without concealed spaces. The minimum dimensions for permitted materials including solid timber, glued-laminated timber, structural composite lumber (SCL) and cross-laminated timber and details of Type IV construction shall comply with the provisions of this section and Section 2304.11. Exterior walls complying with Section 602.4.1 or 602.4.2 shall be permitted. ~~Minimum solid sawn nominal dimensions are required for structures built using Type IV construction (HT). For glued-laminated members and structural composite lumber (SCL) members, the equivalent net finished width and depths corresponding to the minimum nominal width and depths of solid sawn lumber are required as specified in Interior walls and partitions not less than 1-hour fire-resistance rating or heavy timber complying with Section 2304.11.2.2 shall be permitted Table 602.4. Cross-laminated timber (CLT) dimensions used in this section are actual dimensions.~~

- **Note** - Editorial revisions to consolidate the heavy timber requirements in Chapter 6 and Chapter 23. Duplicative text has been eliminated and specific details regarding heavy timber construction have been relocated to Chapter 23.

**TABLE 602.4
WOOD MEMBER SIZE EQUIVALENCIES**

MINIMUM NOMINAL SOLID SAWN SIZE		MINIMUM GLUED-LAMINATED NET SIZE		MINIMUM STRUCTURAL COMPOSITE LUMBER NET SIZE	
Width, inch	Depth, inch	Width, inch	Depth, inch	Width, inch	Depth, inch
8	8	6 ³ / ₄	8 ¹ / ₄	7	7 ¹ / ₂
6	10	5	10 ¹ / ₂	5 ¹ / ₄	9 ¹ / ₂
6	8	5	8 ¹ / ₄	5 ¹ / ₄	7 ¹ / ₂
6	6	5	6	5 ¹ / ₄	5 ¹ / ₂
4	6	3	6 ⁷ / ₈	3 ¹ / ₂	5 ¹ / ₂

For SI: 1 inch = 25.4 mm.

602.4.1 Fire-Retardant-Treated Wood in Exterior Walls

Fire-retardant-treated wood framing and sheathing complying with Section 2303.2 shall be permitted within exterior wall assemblies not less than 6 inches (152mm) in thickness with a 2-hour rating or less.

- **Note** - Minimum thickness (6 inches) requirements for fire-retardant-treated wood in exterior walls has been added to this section from Section 602.4.8.2. Section 602.4.8.2 has been relocated to Chapter 23.

602.4.2 Cross-Laminated Timber in Exterior Walls

Cross-laminated timber complying with Section 2303.1.4 shall be permitted within exterior wall assemblies not less than 6 inches (152 mm) in thickness with a 2-hour rating or less, provided the exterior surface of the cross-laminated timber is protected by one the following:

1. Fire-retardant-treated wood sheathing complying with Section 2303.2 and not less than ¹⁵/₃₂ inch (12 mm) thick;
2. Gypsum board not less than ¹/₂ inch (12.7 mm) thick; or
3. A noncombustible material.

- 1
2
- **Note** - Minimum thickness (6 inches) requirements for cross-laminated timber in exterior walls has been added to this this section from Section 602.4.8.2. Section 602.4.8.2 has been relocated to Chapter 23.
- 3
4
5

6 7 **602.4.3 Columns Exterior structural members**

8 ~~Wood columns shall be sawn or glued laminated and shall be not less than 8 inches (203 mm), nominal,~~
9 ~~in any dimension where supporting floor loads and not less than 6 inches (152 mm) nominal in width and~~
10 ~~not less than 8 inches (203 mm) nominal in depth where supporting roof and ceiling loads only. Columns~~
11 ~~shall be continuous or superimposed and connected in an approved manner. Protection in accordance~~
12 ~~with Section 704.2 is not required.~~

13
14 Where a horizontal separation of 20 feet (6096 mm) or more is provided, wood columns and arches
15 conforming to heavy timber sizes complying with Section 2304.11 shall be permitted to be used
16 externally.

17 **602.4.4 Floor Framing**

18
19
20 ~~Wood beams and girders shall be of sawn or glued laminated timber and shall be not less than 6 inches~~
21 ~~(152 mm) nominal in width and not less than 10 inches (254 mm) nominal in depth. Framed sawn or~~
22 ~~glued laminated timber arches, which spring from the floor line and support floor loads, shall be not less~~
23 ~~than 8 inches (203 mm) nominal in any dimension. Framed timber trusses supporting floor loads shall~~
24 ~~have members of not less than 8 inches (203 mm) nominal in any dimension.~~

25 **602.4.5 Roof Framing**

26
27
28 ~~Wood frame or glued laminated arches for roof construction, which spring from the floor line or from~~
29 ~~grade and do not support floor loads, shall have members not less than 6 inches (152 mm) nominal in~~
30 ~~width and have not less than 8 inches (203 mm) nominal in depth for the lower half of the height and not~~
31 ~~less than 6 inches (152 mm) nominal in depth for the upper half. Framed or glued laminated arches for~~
32 ~~roof construction that spring from the top of walls or wall abutments, framed timber trusses and other roof~~
33 ~~framing, which do not support floor loads, shall have members not less than 4 inches (102 mm) nominal~~
34 ~~in width and not less than 6 inches (152 mm) nominal in depth. Spaced members shall be permitted to be~~
35 ~~composed of two or more pieces not less than 3 inches (76 mm) nominal in thickness where blocked~~
36 ~~solidly throughout their intervening spaces or where spaces are tightly closed by a continuous wood cover~~
37 ~~plate of not less than 2 inches (51 mm) nominal in thickness secured to the underside of the members.~~
38 ~~Splice plates shall be not less than 3 inches (76 mm) nominal in thickness. Where protected by approved~~
39 ~~automatic sprinklers under the roof deck, framing members shall be not less than 3 inches (76 mm)~~
40 ~~nominal in width.~~

- 41
42
- **Note** - Sections have been deleted and correlated with similar requirements in Sections 2304.11.1.1, 2304.11.1.2, and 2304.11.1.3
- 43
44

45 **602.4.6 Floors**

46
47 ~~Floors shall be without concealed spaces. Wood floors shall be constructed in accordance with Section~~
48 ~~602.4.6.1 or 602.4.6.2.~~

- 49
- **Note** - Section relocated.
- 50
51

52 **602.4.7 Roofs**

53
54 ~~Roofs shall be without concealed spaces and wood roof decks shall be sawn or glued laminated, splined~~
55 ~~or tongue and groove plank, not less than 2 inches (51 mm) nominal in thickness; 1¹/₈-inch thick (32 mm)~~
56 ~~wood structural panel (exterior glue); planks not less than 3 inches (76 mm) nominal in width, set on edge~~
57 ~~close together and laid as required for floors; or of cross laminated timber. Other types of decking shall be~~
58 ~~permitted to be used if providing equivalent fire resistance and structural properties. Cross laminated~~
59 ~~timber roofs shall be not less than 3 inches (76 mm) nominal in thickness and shall be continuous from~~

1 ~~support to support and mechanically fastened to one another.~~

- 2
- 3 • **Note** - Section deleted and provisions have been relocated and folded into Sections 2304.11.4,
 - 4 2304.11.4.1, and 2304.11.4.2.

5

6 **602.4.8 Partitions and Walls**

7

8 ~~Partitions and walls shall comply with Section 602.4.8.1 or 602.4.8.2.~~

9

10 **602.4.8.1 Interior Walls and Partitions**

11

12 ~~Interior walls and partitions shall be of solid wood construction formed by not less than two layers of 1-~~

13 ~~inch (25 mm) matched boards or laminated construction 4 inches (102 mm) thick, or of 1-hour fire-~~

14 ~~resistance-rated construction.~~

15

16 **602.4.8.2 Exterior Walls**

17

18 ~~Exterior walls shall be of one of the following:~~

19

20 Noncombustible materials.

21

22 Not less than 6 inches (152 mm) in thickness and constructed of one of the following:

- 23
- 24 • 2.1. Fire-retardant-treated wood in accordance with Section 2303.2 and complying with Section
 - 25 602.4.1.
 - 26 • 2.2. Cross-laminated timber complying with Section 602.4.2.
- 27
- 28 • **Note** - Sections relocated. Minimum thickness requirements (6 inches) for fire-retardant-treated
 - 29 wood and cross-laminated timber in exterior walls has been moved to Sections 602.4.1 and
 - 30 602.4.2 respectively.

31

32 **602.4.9 Exterior Structural Members**

33

34 Where a horizontal separation of 20 feet (6096 mm) or more is provided, wood columns and arches

35 conforming to heavy timber sizes shall be permitted to be used externally.

36

37 **602.5 Type V**

38

39 Type V construction is that type of construction in which the structural elements, exterior walls and interior

40 walls are of any materials permitted by this code.

41

42 **CHAPTER 7 FIRE AND SMOKE PROTECTION FEATURES**

43

44 **703 Fire-Resistance Ratings and Fire Tests**

45

46 **703.2 Fire-Resistance Ratings**

47

48 The fire-resistance rating of building elements, components or assemblies shall be determined in

49 accordance with the test procedures set forth in ASTM E119 or UL 263 or in accordance with Section

50 703.3. The fire-resistance rating of penetrations and fire-resistant joint systems shall be determined in

51 accordance Sections 714 and 715, respectively.

52

53 **703.3 Methods for Determining Fire Resistance**

54

55 The application of any of the methods listed in this section shall be based on the fire exposure and

56 acceptance criteria specified in ASTM E119 or UL 263. The required fire resistance of a building element,

57 component or assembly shall be permitted to be established by any of the following methods or

1 procedures:

- 2
- 3 1. Fire-resistance designs documented in approved sources.
- 4 2. Prescriptive designs of fire-resistance-rated building elements, components, or assemblies as
- 5 prescribed in Section 721.
- 6 3. Calculations in accordance with Section 722.
- 7 4. Engineering analysis based on a comparison of building element, component or assemblies
- 8 designs having fire-resistance ratings as determined by the test procedures set forth in ASTM
- 9 E119 / UL 263.
- 10 5. Alternative protection methods as allowed by Section 104.11.
- 11 6. Fire-resistance designs certified by an approved agency.
- 12

13 703.7 Marking and Identification

14
15 Where there is an accessible concealed floor, floor-ceiling or attic space, fire walls, fire barriers, fire
16 partitions, smoke barriers and smoke partitions or any other wall required to have protected openings or
17 penetrations shall be effectively and permanently identified with signs or stenciling in the concealed
18 space. Such identification shall:

- 19
- 20 1. Be located within 15 feet (4572 mm) of the end of each wall and at intervals not exceeding 30 feet
- 21 (9144 mm) measured horizontally along the wall or partition.
- 22 2. Include lettering not less than 3 inches (76 mm) in height with a minimum $\frac{3}{8}$ -inch (9.5 mm) stroke
- 23 in a contrasting color incorporating the suggested wording, "FIRE AND/OR SMOKE BARRIER—
- 24 PROTECT ALL OPENINGS," or other wording.
- 25

26 704 Fire-Resistance Rating of Structural Members

27 704.1 Requirements

28
29 The fire-resistance ratings of structural members and assemblies shall comply with this section and the
30 requirements for the type of construction as specified in Table 601. The fire-resistance ratings shall be not
31 less than the ratings required for the fire-resistance-rated assemblies supported by the structural
32 members.
33

34
35 **Exception:** Fire barriers, fire partitions, smoke barriers and horizontal assemblies as provided in Sections
36 707.5, 708.4, 709.4 and 711.2, respectively.
37

38 704.2 Column Protection

39
40 Where columns are required to have protection to achieve a fire-resistance rating, the entire column shall
41 be provided individual encasement protection by protecting it on all sides for the full column height,
42 including connections to other structural members, with materials having the required fire-resistance
43 rating. Where the column extends through a ceiling, the encasement protection shall be continuous from
44 the top of the foundation or floor/ceiling assembly below through the ceiling space to the top of the
45 column.
46

47 704.3 Protection of The Primary Structural Frame Other Than Columns

48
49 Members of the primary structural frame other than columns that are required to have protection to
50 achieve a fire-resistance rating and support more than two floors or one floor and roof or support a load-
51 bearing wall or a non-load-bearing wall more than two stories high, shall be provided individual
52 encasement protection by protecting them on all sides for the full length, including connections to other
53 structural members, with materials having the required fire-resistance rating.
54

55 **Exception:** Individual encasement protection on all sides shall be permitted on all exposed sides
56 provided the extent of protection is in accordance with the required fire-resistance rating, as determined in
57 Section 703.
58

705 Exterior Walls

705.2 Projections

Cornices, eave overhangs, exterior balconies and similar projections extending beyond the exterior wall shall conform to the requirements of this section and Section 1406. Exterior egress balconies and exterior exit stairways and ramps shall comply with Sections 1021 and 1027, respectively. Projections shall not extend any closer to the line used to determine the fire separation distance than shown in Table 705.2.

Exception: Buildings on the same lot and considered as portions of one building in accordance with Section 705.3 are not required to comply with this section for projections between the buildings.

**TABLE 705.2
MINIMUM DISTANCE OF PROJECTION**

FIRE SEPARATION DISTANCE (FSD)	MINIMUM DISTANCE FROM LINE USED TO DETERMINE FSD
0 feet to 2 feet	Projections not permitted
Greater than 2 feet to 3 feet	24 inches
Greater than 3 feet to less than 30 feet	24 inches plus 8 inches for every foot of FSD beyond 3 feet or fraction thereof
30 feet or greater	20 feet

For SI: 1 foot = 304.8 mm; 1 inch = 25.4 mm.

705.2.1 Type I and II Construction

Projections from walls of Type I or II construction shall be of noncombustible materials or combustible materials as allowed by Sections 1406.3 and 1406.4.

705.2.2 Type III, IV, or V Construction

Projections from walls of Type III, IV or V construction shall be of any approved material.

Chapter 8

KNOW YOUR BUILDING CODE!

EIGHTH EDITION (2023)

FBC-RESIDENTIAL

CHAPTER 1 SCOPE AND ADMINISTRATION

R101 GENERAL

R101.1 Title

These provisions shall be known as the Florida Building Code, Residential, and shall be cited as such and will be referred to herein as “this code.”

R101.2 Scope

The provisions of the Florida Building Code, Residential shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and townhouses not more than three stories above grade plane in height with a separate means of egress and their accessory structures not more than three stories above grade plane in height.

Exceptions:

Live/work units located in townhouses and complying with the requirements of Section 419 of the Florida Building Code, Building shall be permitted to be constructed in accordance with the Florida Building Code, Residential. Fire suppression required by Section 419.5 of the Florida Building Code, Building where constructed under the Florida Building Code, Residential shall conform to Section P2904

Owner-occupied lodging houses with five or fewer guestrooms shall be permitted to be constructed in accordance with the Florida Building Code, Residential where equipped with a fire sprinkler system in accordance with Section P2904.

Existing buildings undergoing repair, alteration, additions or change of occupancy shall comply with the Florida Building Code, Existing Building.

R101.2.1

The provisions of Chapter 1, Florida Building Code, Building, shall govern the administration and enforcement of the Florida Building Code, Residential.

CHAPTER 2 DEFINITIONS

R201 General

R201.1 Scope

Unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, have the meanings indicated in this chapter.

R201.2 Interchangeability

Words used in the present tense include the future; words in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

R201.3 Terms Defined in Other Codes

Where terms are not defined in this code such terms shall have the meanings ascribed in other code publications of the Florida Building Commission.

R201.4 Terms Not Defined

Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies.

CHAPTER 3 BUILDING PLANNING

R301 - Design Criteria

R301.1 Application

Buildings and structures, and parts thereof, shall be constructed to safely support all loads, including dead loads, live loads, roof loads, flood loads, snow loads, wind loads, and seismic loads as prescribed by this code. The construction of buildings and structures in accordance with the provisions of this code shall result in a system that provides a complete load path that meets the requirements for the transfer of loads from their point of origin through the load-resisting elements to the foundation. Buildings and structures constructed as prescribed by this code are deemed to comply with the requirements of this section.

Exception: Buildings and structures located within the High Velocity Hurricane Zone shall comply with Sections R302 to R327, inclusive and the provisions of Chapter 44, Sections R301.2.5 and R406. In addition, buildings and structures located in flood hazard areas established in Table R301.2(1) shall comply with Sections R301.2.4, R301.2.5 and R322.

R301.1.1 Alternative Provisions

As an alternative to the requirements in Section R301.1, the following standards are permitted subject to the limitations of this code and the limitations therein. Where engineered design is used in conjunction with these standards, the design shall comply with the Florida Building Code, Building.

AF&PA Wood Frame Construction Manual (WFCM).

AISI Standard for Cold-Formed Steel Framing - Prescriptive Method for One- and Two-Family Dwellings (AISI S230).

ICC Standard on the Design and Construction of Log Structures (ICC 400).

1 **R301.1.2 Construction Systems**

2
3 The requirements of this code are based on platform and balloon-frame construction for light-frame
4 buildings. The requirements for concrete and masonry buildings are based on a balloon framing system.
5 Other framing systems must have equivalent detailing to ensure force transfer, continuity, and compatible
6 deformations.
7

8 **R301.1.3 Engineered Design**

9
10 Where a building of otherwise conventional construction contains structural elements exceeding the limits
11 of Section R301 or otherwise not conforming to this code, these elements shall be designed in accordance
12 with accepted engineering practice. The extent of such design need only demonstrate compliance of
13 nonconventional elements with other applicable provisions and shall be compatible with the performance
14 of the conventional framed system. Engineered design in accordance with the Florida Building Code,
15 Building is permitted for buildings and structures, and parts thereof, included in the scope of this code.
16

17 **R304 Minimum Room Areas**

18 **R304.1 Minimum Area**

19 Habitable rooms shall have a floor area of not less than 70 square feet (6.5 m²).
20
21

22 **Exception:** Kitchens.
23
24

25 **R304.2 Minimum Dimensions**

26 Habitable rooms shall be not less than 7 feet (2134 mm) in any horizontal dimension.
27
28

29 **Exception:** Kitchens.
30
31

32 **R304.3 Height Effect on Room Area**

33 Portions of a room with a sloping ceiling measuring less than 5 feet (1524 mm) or a furred ceiling
34 measuring less than 7 feet (2134 mm) from the finished floor to the finished ceiling shall not be
35 considered as contributing to the minimum required habitable area for that room.
36

37 **R305 Ceiling Height**

38 **R305.1 Minimum Height**

39 Habitable space, hallways, and portions of basements containing these spaces shall have a ceiling height
40 of not less than 7 feet (2134 mm). Bathrooms, toilet rooms, and laundry rooms shall have a ceiling height
41 of not less than 6 feet 8 inches (2032 mm).
42
43

44 **Exceptions:** For rooms with sloped ceilings, the required floor area of the room shall have a ceiling
45 height of not less than 5 feet (1524 mm) and not less than 50 percent of the required floor area shall have
46 a ceiling height of not less than 7 feet (2134 mm).
47
48

49 The ceiling height above bathroom and toilet room fixtures shall be such that the fixture is capable of
50 being used for its intended purpose. A shower or tub equipped with a showerhead shall have a ceiling
51 height of not less than 6 feet 8 inches (2032 mm) above an area of not less than 30 inches (762 mm) by
52 30 inches (762 mm) at the showerhead.

53 Beams, girders, ducts, or other obstructions in basements containing habitable space shall be permitted
54 to project within 6 feet 4 inches (1931 mm) of the finished floor.
55

1 **R305.1.1 Basements**

2
3 Portions of basements that do not contain habitable space or hallways shall have a ceiling height of not
4 less than 6 feet 8 inches (2032 mm).

5
6 **Exception:** At beams, girders, ducts, or other obstructions, the ceiling height shall be not less than 6 feet
7 4 inches (1931 mm) from the finished floor.
8

9 **R311 MEANS OF EGRESS**

10 **R311.7 Stairways**

11 **R311.7.1 Width**

12
13 Stairways shall be not less than 36 inches (914 mm) in clear width at all points above the permitted
14 handrail height and below the required headroom height. The clear width of the stairway at and below the
15 handrail height, including treads and landings, shall be not less than 31 1/2 inches (787 mm) where a
16 handrail is installed on one side and 27 inches (698 mm) where handrails are provided on both sides.
17
18

19
20 **Exception:** The width of spiral stairways shall be in accordance with Section R311.7.10.1.

- 21
22 • **Note:** The criteria for handrail projections into the stairway width has been relocated to new
23 Section R311.7.8.5.
24

25 **R311.7.2 Headroom**

26
27 The headroom in stairways shall be not less than 6 feet 8 inches (2032 mm) measured vertically from the
28 sloped line adjoining the tread nosing or from the floor surface of the landing or platform on that portion of
29 the stairway.
30

31 **Exceptions:** Where the nosings of treads at the side of a flight extend under the edge of a floor opening
32 through which the stair passes, the floor opening shall be allowed to project horizontally into the required
33 headroom not more than 4 3/4 inches (121 mm).
34

35 The headroom for spiral stairways shall be in accordance with Section R311.7.10.1.
36

37 **R311.7.3 Vertical Rise**

38
39 A flight of stairs shall not have a vertical rise larger than 151 inches (3835 mm) between floor levels or
40 landings.
41

- 42 • **Note:** The maximum vertical rise of a flight of stairs has been increased from 147 inches to 151
43 inches.
44

45 **R311.7.4 Walkline**

46
47 The walkline across winder treads shall be concentric to the curved direction of travel through the turn
48 and located 12 inches (305 mm) from the side where the winders are narrower. The 12-inch (305 mm)
49 dimension shall be measured from the widest point of the clear stair width at the walking surface of the
50 winder. If winders are adjacent within the flight, the point of the widest clear stair width of the adjacent
51 winders shall be used.
52

53 **R311.7.5 Stair Treads and Risers**

54
55 Stair treads and risers shall meet the requirements of this section. For the purposes of this section,
56 dimensions and dimensioned surfaces shall be exclusive of carpets, rugs, or runners.
57

R311.7.5.1 Risers

The riser height shall be not more than 7 3/4 inches (196 mm). The riser shall be measured vertically between leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm). Risers shall be vertical or sloped from the underside of the nosing of the tread above at an angle not more than 30 degrees (0.51 rad) from the vertical. Open risers are permitted provided that the openings located more than 30 inches (762 mm), as measured vertically, to the floor or grade below do not permit the passage of a 4-inch-diameter (102 mm) sphere.

Exceptions:

The opening between adjacent treads is not limited on spiral stairways
The riser height of spiral stairways shall be in accordance with Section R311.7.10.1

R311.7.5.2 Treads

The tread depth shall be not less than 10 inches (254 mm). The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm).

R311.7.5.2.1 Winder Treads

Winder treads shall have a tread depth of not less than 10 inches (254 mm) measured between the vertical planes of the foremost projection of adjacent treads at the intersections with the walkline. Winder treads shall have a tread depth of not less than 6 inches (152 mm) at any point within the clear width of the stair. Within any flight of stairs, the largest winder tread depth at the walkline shall not exceed the smallest winder tread by more than 3/8 inch (9.5 mm). Consistently shaped winders at the walkline shall be allowed within the same flight of stairs as rectangular treads and do not have to be within 3/8 inch (9.5 mm) of the rectangular tread depth.

Exception: The tread depth at spiral stairways shall be in accordance with Section R311.7.10.1

R311.7.5.3 Nosings

Nosing's at treads, landings and floors of stairways shall have a radius of curvature at the nosing not greater than 9/16 inch (14 mm) or a bevel not exceeding 1/2 inch (12.7 mm). A nosing projection not less than 3/4 inch (19 mm) and not more than 1 1/4 inches (32 mm) shall be provided on stairways. The greatest nosing projection shall not exceed the smallest nosing projection by more than 3/8 inch (9.5 mm) within a stairway.

Exception: A nosing projection is not required where the tread depth is not less than 11 inches (279 mm).

- **Note:** Section revised to clearly describe and emphasize consistent nosings and that nosing projections are required at every walking surface throughout the stairway.

R311.7.5.4 Exterior Plastic Composite Stair Treads

Plastic composite exterior stair treads shall comply with the provisions of this section and Section R507.3.

R311.7.6 Landings for Stairways

There shall be a floor or landing at the top and bottom of each stairway. The width perpendicular to the direction of travel shall be not less than the width of the flight served. Landings of shapes other than square or rectangular shall be permitted provided that the depth at the walk line and the total area is not less than that of a quarter circle with a radius equal to the required landing width. Where the stairway has a straight run, the depth in the direction of travel shall be not less than 36 inches (914 mm).

1 **Exceptions:** A floor or landing is not required at the top of an interior flight of stairs, including stairs in an
2 enclosed garage, provided that a door does not swing over the stairs.

3
4 See Section R311.3 for exterior doors where a step down is provided

6 **R311.7.7 Stairway Walking Surface**

7
8 The walking surface of treads and landings of stairways shall be sloped not steeper than one unit vertical
9 in 48 inches horizontal (2-percent slope).

11 **R311.7.8 Handrails**

12
13 Handrails shall be provided on not less than one side of each flight with four or more risers.

- 14 • **Note:** Section editorially revised to delete redundant language.

17 **R311.7.8.1 Height**

18
19 Handrail height measured vertically from the sloped plane adjoining the tread nosing, or finish surface of
20 ramp slope, shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm).

21
22 **Exceptions:** The use of a volute, turnout, or starting easing shall be allowed over the lowest tread.

23
24 Where handrail fittings or bandings are used to provide continuous transition between flights, transitions
25 at winder treads, the transition from handrail to guard, or used at the start of a flight, the handrail height at
26 the fittings or bandings shall be permitted to exceed 38 inches (956 mm).

28 **R311.7.8.2 Continuity**

29
30 Handrails for stairways shall be continuous for the full length of the flight, from a point directly above the
31 top riser of the flight to a point directly above the lowest riser of the flight. Handrail ends shall be returned
32 or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of
33 not less than 1 1/2 inches (38 mm) between the wall and the handrails.

34
35 **Exceptions:** Handrails shall be permitted to be interrupted by a newel post at the turn.
36 The use of a volute, turnout, started easing or starting newel shall be allowed over the lowest tread.

38 **R311.7.8.3 Grip-Size**

39
40 Required handrails shall be of one of the following types or provide equivalent grasp-ability.

41
42 **Type I.** Handrails with a circular cross section shall have an outside diameter of not less than 1 1/4 inches
43 (32 mm) and not greater than 2 inches (51 mm). If the handrail is not circular, it shall have a perimeter
44 dimension of not less than 4 inches (102 mm) and not greater than 6 1/4 inches (160 mm) with a cross
45 section of dimension of not more than 2 1/4 inches (57 mm). Edges shall have a radius of not less than
46 0.01 inch (0.25 mm).

47
48 **Type II.** Handrails with a perimeter greater than 6 1/4 inches (160 mm) shall have a graspable finger
49 recess area on both sides of the profile. The finger recess shall begin within a distance of 3/4 inch (19
50 mm) measured vertically from the tallest portion of the profile and achieve a depth of not less than 5/16
51 inch (8 mm) within 7/8 inch (22 mm) below the widest portion of the profile. This required depth shall
52 continue for not less than 3/8 inch (10 mm) to a level that is not less than 1 3/4 inches (45 mm) below the
53 tallest portion of the profile. The width of the handrail above the recess shall be not less than 1 1/4 inches
54 (32 mm) and not more than 2 3/4 inches (70 mm). Edges shall have a radius of not less than 0.01 inch
55 (0.25 mm).

57 **R311.7.8.5 Handrail projection.**

58
59 Handrails shall not project more than 4 1/2 inches (114 mm) on either side of the stairway.

1
2 **Exception:** Where nosing of landings, floors or passing flights project into the stairway reducing the
3 required clearance at passing handrails, the handrail shall project not more than 61/2 inches (165 mm)
4 into the stairway, provided the required stair width and required handrail clearance are not reduced.
5

- 6 • **Note:** Handrail projection limitations into the stairway width have been relocated from Section
7 R311.7.1 to new Section R311.7.8.5. A new exception has been added for instances where
8 handrails pass the projection of landing tread nosings and tread return nosings that project into
9 the stairway.

11 **R322 Flood-Resistant Construction**

13 **R322.1 General**

14 Buildings and structures constructed in whole or in part in flood hazard areas, including A or V Zones and
15 Coastal A Zones, as established in Table R301.2(1), and substantial improvement and repair of
16 substantial damage of buildings and structures in flood hazard areas, shall be designed and constructed
17 in accordance with the provisions contained in this section. Buildings and structures that are located in
18 more than one flood hazard area shall comply with the provisions associated with the most restrictive
19 flood hazard area. Buildings and structures located in whole or in part in identified floodways shall be
20 designed and constructed in accordance with ASCE 24.
21

- 22 • **Note:** Section editorially revised to clarify it applies to the repair of substantial damage not
23 restoration of substantial damage.

24 **R322.1.1 Alternative Provisions**

25 As an alternative to the requirements in Section R322, ASCE 24 is permitted subject to the limitations of
26 this code and the limitations therein.

27 **R322.1.2 Structural Systems**

28 Structural systems of buildings and structures shall be designed, connected, and anchored to resist
29 flotation, collapse, or permanent lateral movement due to structural loads and stresses from flooding
30 equal to the design flood elevation.
31

32 **R322.1.3 Flood-Resistant Construction**

33 Buildings and structures erected in areas prone to flooding shall be constructed by methods and practices
34 that minimize flood damage.
35

36 **R322.1.4 Establishing the Design Flood Elevation**

37 The design flood elevation shall be used to define flood hazard areas. At a minimum, the design flood
38 elevation shall be the higher of the following:

- 39 • The base flood elevation at the depth of peak elevation of flooding, including wave height, that
40 has a 1 percent (100-year flood) or greater chance of being equaled or exceeded in any given
41 year; or

42 The elevation of the design flood associated with the area designated on a flood hazard map adopted by
43 the community, or otherwise legally designated.
44

45 **R322.1.4.1 Determination of Design Flood Elevations**

46 If design flood elevations are not specified, the building official is authorized to require the applicant to
47 comply with either of the following:
48
49
50
51
52

1 Obtain and reasonably use data available from a federal, state, or other source; or
2 Determine the design flood elevation in accordance with accepted hydrologic and hydraulic engineering
3 practices used to define special flood hazard areas. Determinations shall be undertaken by a registered
4 design professional who shall document that the technical methods used reflect currently accepted
5 engineering practice. Studies, analyses, and computations shall be submitted in sufficient detail to allow
6 thorough review and approval.

8 **R322.1.4.2 Determination of Impacts**

9
10 In riverine flood hazard areas where design flood elevations are specified but floodways have not been
11 designated, the applicant shall demonstrate that the effect of the proposed buildings and structures on
12 design flood elevations, including fill, when combined with other existing and anticipated flood hazard
13 area encroachments, will not increase the design flood elevation more than 1 foot (305 mm) at any point
14 within the jurisdiction.

16 **R322.1.5 Lowest Floor**

17
18 The lowest floor shall be the lowest floor of the lowest enclosed area, including basement, and excluding
19 any unfinished flood-resistant enclosure that is useable solely for vehicle parking, building access or
20 limited storage provided that such enclosure is not built so as to render the building or structure in
21 violation of this section.

23 **R322.1.6 Protection of Mechanical, Plumbing, and Electrical Systems**

24
25 Electrical systems, equipment, and components; heating, ventilating, air conditioning; plumbing
26 appliances and plumbing fixtures; duct systems; and other service equipment shall be located at or above
27 the elevation required in Section R322.2 or R322.3. If replaced as part of a substantial improvement,
28 electrical systems, equipment, and components; heating, ventilating, air conditioning and plumbing
29 appliances and plumbing fixtures; duct systems; and other service equipment shall meet the requirements
30 of this section. Systems, fixtures, and equipment and components shall not be mounted on or penetrate
31 through walls intended to break away under flood loads.

32
33 **Exception:** Locating electrical systems, equipment and components; heating, ventilating, air conditioning;
34 plumbing appliances and plumbing fixtures; duct systems; and other service equipment is permitted
35 below the elevation required in Section R322.2 or R322.3 provided that they are designed and installed to
36 prevent water from entering or accumulating within the components and to resist hydrostatic and
37 hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to
38 the design flood elevation in accordance with ASCE 24. Equipment for pools, spas and water features
39 shall be permitted below the elevation required in Section R322.2 or R322.3 provided it is elevated to the
40 extent practical, is anchored to prevent flotation and resist flood forces, and is supplied by branch circuits
41 that have ground-fault circuit-interrupter protection. Electrical wiring systems are permitted to be located
42 below the required elevation provided that they conform to the provisions of the electrical part of this code
43 for wet locations.

- 44
45 • **Note:** New language added permitting equipment for pools, spas, and water features to be
46 located below the required base flood elevation provided the equipment is elevated to the extent
47 practical, is anchored to resist flotation and flood forces, and supported by branch circuits having
48 ground-fault circuit-interrupter protection.

50 **R322.1.7 Protection of Water Supply and Sanitary Sewage Systems**

51
52 New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood
53 waters into the systems in accordance with the plumbing provisions of this code. New and replacement
54 sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into
55 systems and discharges from systems into floodwaters in accordance with the plumbing provisions of this
56 code and in accordance with Chapter 64E-6, Florida Administrative Code, Standards for Onsite Sewage
57 Treatment and Disposal Systems.

R322.1.8 Flood-Resistant Materials

Building materials and installation methods used for flooring and interior and exterior walls and wall coverings below the elevation required in Section R322.2 or R322.3 shall be flood damage-resistant materials that conform to the provisions of FEMA TB-2.

R322.1.9 Manufactured Homes

In addition to the applicable requirements of the state agency with jurisdiction over installation of manufactured homes, installation of manufactured homes in flood hazard areas is subject to the applicable provisions of the local floodplain management ordinance.

R322.1.10 As-Built Elevation Documentation

A registered design professional shall prepare, and seal documentation of the elevations specified in Section R322.2 or R322.3.

R322.1.11 Structures Seaward of a Coastal Control Construction Line

In addition to the requirements of this section, structures located in flood hazard areas and seaward of the coastal construction line shall be designed to resist the predicted forces of a 100-year storm event in accordance with Section R3109 of the Florida Building Code, Building, and the more restrictive provisions shall govern.

R322.2 Flood Hazard Areas (Including A Zones)

Areas that have been determined to be prone to flooding and that are not subject to high-velocity wave action shall be designated as flood hazard areas. Flood hazard areas that have been delineated as subject to wave heights between 11/2 feet (457 mm) and 3 feet (914 mm) or otherwise designated by the jurisdiction shall be designated as Coastal A Zones and are subject to the requirements of Section R322.3. Buildings and structures constructed in whole or in part in flood hazard areas shall be designed and constructed in accordance with Sections R322.2.1 through R322.2.4.

R322.2.1 Elevation Requirements

Buildings and structures in flood hazard areas, including flood hazard areas designated as Coastal A Zones, shall have the lowest floors elevated to or above the base flood elevation plus 1 foot (305 mm), or the design flood elevation, whichever is higher.

In areas of shallow flooding (AO Zones), buildings and structures shall have the lowest floor (including basement) elevated to a height above the highest adjacent grade of not less than the depth number specified in feet (mm) on the FIRM plus 1 foot (305 mm), or not less than 3 feet (915 mm) if a depth number is not specified.

Basement floors that are below grade on all sides shall be elevated to or above base flood elevation plus 1 foot (305 mm), or the design flood elevation, whichever is higher.

Exception: Enclosed areas below the design flood elevation, including basements with floors that are not below grade on all sides, shall meet the requirements of Section R322.2.2.

R322.2.2 Enclosed Area Below Design Flood Elevation

Enclosed areas, including crawl spaces, that are below the design flood elevation shall:

Be used solely for parking of vehicles, building access or storage.

Be provided with flood openings that meet the following criteria and are installed in accordance with Section R322.2.2.1:

- 1 • The total net area of non-engineered openings shall be not less than 1 square inch (645 mm²) for
2 each square foot (0.093 m²) of enclosed area where the enclosed area is measured on the
3 exterior of the enclosure walls, or the openings shall be designed as engineered openings and
4 the construction documents shall include a statement by a registered design professional that the
5 design of the openings will provide for equalization of hydrostatic flood forces on exterior walls by
6 allowing for the automatic entry and exit of floodwaters as specified in Section 2.7.2.2 of ASCE
7 24.
8 • Openings shall be not less than 3 inches (76 mm) in any direction in the plane of the wall.
9 • The presence of louvers, blades, screens and faceplates or other covers and devices shall allow
10 the automatic flow of floodwater into and out of the enclosed areas and shall be accounted for in
11 the determination of the net open area.

13 **R322.2.2.1 Installation of Openings**

14
15 The walls of enclosed areas shall have openings installed such that:

16
17 There shall be not less than two openings on different sides of each enclosed area; if a building has more
18 than one enclosed area below the design flood elevation, each area shall have openings.

19 The bottom of each opening shall be not more than 1 foot (305 mm) above the higher of the final interior
20 grade or floor and the finished exterior grade immediately under each opening.

21 Openings shall be permitted to be installed in doors and windows; doors and windows without installed
22 openings do not meet the requirements of this section.
23
24

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5

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Chapter 8

KNOW YOUR BUILDING CODE!

EIGHTH EDITION (2023)

FBC-EXISTING BUILDING

INTRODUCTION

Existing Building Definition

When is a building considered “existing”? The FBC-Existing Building volume provides guidance with the following definition:

Chapter 2, Section 202 General Definitions

[A] Existing Building. A building erected prior to the date of adoption of the appropriate code, or one for which a legal building permit has been issued.

There are some stipulations to the interpretation of this rule. Just because a building exists does not make it legal. Just because a building exists does make it occupiable. Just because a building exists does not mean it is being used as intended.

Rules governing occupancy can be found in Chapter 1, Sections 101.4.1, .2, and 101.7 outlined later in this chapter.

CHAPTER 1 SCOPE AND ADMINISTRATION

101 General

101.1 Title

These regulations shall be known as the Florida Building Code, Existing Building, hereinafter referred to as “this code.” In addition to the provisions of this chapter, the provisions of Chapter 1, Florida Building Code, Building, shall govern the administration and enforcement of this code.

101.2 Scope

The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures.

Exceptions:

Detached one- and two-family dwellings and multiple single-family dwellings (town houses) not more than three stories above grade plane in height with a separate means of egress and their accessory structures shall comply with the Florida Building Code, Residential.

Existing buildings undergoing repair, alterations or additions and change of occupancy shall be permitted to comply with the Florida Building Code, Existing Building.

101.2.1 Appendices

Provisions in the appendices shall not apply unless specifically adopted. [FBC-Building]

[A] 101.4 Applicability

This code shall apply to the repair, alteration, change of occupancy, addition, and relocation of existing buildings, regardless of occupancy, subject to the criteria of Sections 101.4.1 and 101.4.2.

[A] 101.4.1 Buildings Not Previously Occupied

A building or portion of a building that has not been previously occupied or used for its intended purpose in accordance with the laws in existence at the time of its completion shall be permitted to comply with the provisions of the laws in existence at the time of its original permit unless such permit has expired. Subsequent permits shall comply with the Florida Building Code, Building or Florida Building Code, Residential, as applicable, for new construction.

Commentary: This section makes it clear that a building under construction when the code changes is permitted to continue under construction based on the approved plans and permits. Changes to the new code do not affect this construction as it is underway. A building that was not completed and has allowed the permit to expire is different.

If the building was not completed, the permit expired, and the building never received a Certificate of Occupancy, meaning it has not been used for the intended purpose, a new permit in compliance with the code in effect at the time of application is required. This section further makes it clear that a building not used for the intended purpose is also considered NOT previously occupied. This could be a building constructed as a mercantile, Group M, and then used for assembly purposes, Group A, as an example. It was not designed or constructed for that use.

[A] 101.4.2 Buildings Previously Occupied

The legal occupancy of any building existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code, the Florida Fire Prevention Code, or as is deemed necessary by the code official for the general safety and welfare of the occupants and the public.

Commentary: Buildings that are in use and being used as intended are permitted to continue in that use. This is the reason for the Existing Building volume. Just because the code has been updated, we do not go through communities and require that each building be reconstructed. This is not only unfair; it is unreasonable and costly.

[A] 101.5 Safeguards During Construction

Construction work covered in this code, including any related demolition, shall comply with the requirements of Chapter 15.

[A] 101.6 Appendices

Reserved.

[A] 101.7 Correction of Violations of Other Codes

Repairs or alterations mandated by any property, housing, or fire safety maintenance code or mandated by any licensing rule or ordinance adopted pursuant to law shall conform only to the requirements of that code, rule, or ordinance and shall not be required to conform to this code unless the code requiring such repair or alteration so provides.

1 **Commentary:** This and 101.4.2 that allows buildings to continue in use make several things clear. We do
2 not intend to apply the current edition of the code to existing buildings. A building being used as intended
3 can continue to operate in the capacity for which it was originally designed, this is true even if the current
4 edition of the code would require something different, such as the addition of fire sprinklers. If there are
5 items found in other codes, rules, or laws they are not required by this volume and are not to be applied
6 as if they were. Existing violations of life safety that may be present and discovered during alterations are
7 to be cited to the owner.
8

9 Often during an alteration or repair, existing violations of the codes are uncovered. Some of these may be
10 accidental or inadvertent. Some may have been caused by previous owners or tenants. The contractor
11 making the repairs or alterations may have been unaware of any issues. It may be outside of their
12 contract. Unless there is a life safety issue, those items found must be cited independently of any work
13 being performed.
14

15 **101.8 Existing Mechanical Equipment**

16
17 An agency or local government may not require that existing mechanical equipment located on or above
18 the surface of a roof be installed in compliance with the requirements of the Florida Building Code except
19 during reroofing when the equipment is being replaced or moved and is not in compliance with the
20 provisions of the Florida Building Code relating to roof-mounted mechanical units.
21

22 **CHAPTER 5 6 CLASSIFICATION OF WORK**

23 **Alterations**

24
25
26 An alteration can be defined as, any construction or renovation to an existing structure other than repair
27 or addition. Alterations are broken down into three categories, Levels 1, 2, and 3.
28

29 When doing an alteration, it is important to define the work area.
30

31 **Work Area.** A work area is that portion or portions of a building consisting of all reconfigured spaces as
32 indicated on the construction documents. A work area excludes other portions of the building where
33 incidental work entailed by the intended work must be performed and portions of the building where work
34 not initially intended by the owner is specifically required by this code.
35

36 **503602.1 Alteration – Level 1 Scope**

37
38 Level 1 alterations include the Removal and replacement, or covering of existing materials, elements
39 equipment, and or fixtures using new materials, elements, equipment, or fixtures that serve the same
40 purpose
41

42 Does not include reconfiguration of space

43 **Commentary:** Typically, the component (delegate) engineer (such as engineering companies who are
44 building component design engineers) serves as the only engineer for this level alteration and do not
45 need to provide host reactions for others or require shop drawing approval. Since there is typically no
46 architect or engineer above the component engineer, the component engineer produces work either at
47 the master plan sheet (non-site specific) level or addresses a site-specific condition with the assistance of
48 the permitting contractor to develop a code compliant solution.
49

50 **504603.1 Alteration – Level 2 Scope**

51
52 Level 2 alterations include the Reconfiguration of spaces, the addition or elimination of any door or
53 window, the reconfiguration or extension of any system, or the installation of additional system.

54 Reconfiguration of spaces (i.e., removal and addition of walls that could alter paths of egress

55 The addition or elimination of any door or window

56 Reconfiguration or extension of any system or installation of new equipment such as HVAC, electrical,
57 plumbing systems, etc.

1 Requirements for improvements or upgrade outside the scope of work exist in this category
2 Full compliance with the Code for new construction is not required
3 Applies where the work area is less than 50% of the aggregate area of the building

4
5 **Commentary:** Typically, there is an architect and/or engineer of record (AOR/EOR) on level 2 alterations
6 that receives the component engineers' information for approval and incorporation in their design.
7 Component engineers cannot make the final decisions on design work and are subject to AOR/EOR
8 review and approval. The contractor typically facilitates coordination between trades, but at times the
9 component engineers work directly with the AOR/EOR for approval. Notes and disclaimers exist on the
10 component engineers' plans to ensure compliance and limited liability that they are serving as component
11 engineers. In cases where there is no AOR/EOR, the commentary from level 1 applies.

12 13 **505 604.1 Alteration – Level 3 Scope**

14
15 Level 3 alterations apply Alteration Level 3 is just like level 2 alteration except where the work area
16 exceeds 50% of the aggregate building area of the building (total floors area).
17 Triggers in this classification are work that potentially affects the building's fire protections systems,
18 vertical openings, means of egress, accessibility, and structural system.

19
20 **Commentary:** The notes from level 2 commentary apply with the exception that there would nearly
21 always be an AOR/EOR at this alteration level. Building component engineers would not engage fully in a
22 project of this alteration level and serve exclusively as the component engineer.

23
24 So, essentially, Level 1 is replacement, Level 2 is replacement with changes, and Level 3 is a major
25 remodeling.

26 27 **CHAPTER 6 4 REPAIRS**

28
29 The concept of repairs is simple; an item is not working as originally intended, it is broken, and we want it
30 to work again

31
32 The definition of repair from Chapter 2, Section 202 is as follows:

33
34 **[A] Repair.** The reconstruction or renewal of any part of an existing building for the purpose of its
35 maintenance or to correct damage.

36
37 It is important to note this does not state "replace." A repair is intended to allow an existing portion of a
38 building or structure to perform as it was originally intended.

39
40 Chapter 6 4 of the Existing Building volume provides additional guidance. One of the important sections
41 for a repair is ~~601.2~~ 401.2.

42 43 **601.2 401.2 Conformance**

44
45 The work shall not make the building any less ~~compliant~~ conforming than it was before the repair was
46 ~~made~~ undertaken.

47
48 Section ~~602~~ 402 provides for the materials used for repairs.

49
50 **Note:** Chapter 6 Repairs has been relocated to Chapter 4. The provisions of the prescriptive compliance
51 method of Chapter 4 have been relocated to Chapter 5. Classification of work in Chapter 5 has been
52 relocated to Chapter 6. Criteria related to repairs in other chapters has been deleted.

53 54 **602.1 Existing Building Materials**

55
56 ~~Materials already in use in a building in compliance with requirements or approvals in effect at the time of~~
57 ~~their erection or installation shall be permitted to remain in use unless determined by the code official to~~

1 ~~render the building or structure unsafe or dangerous as defined in Chapter 2.~~

2
3 ~~**Dangerous:** Any building, structure, or portion thereof that meets any of the conditions described below~~
4 ~~shall be deemed dangerous:~~

5
6 The building or structure has collapsed, has partially collapsed, has moved off its foundation, or lacks the
7 necessary support of the ground.

8 There exists a significant risk of collapse, detachment or dislodgement of any portion, member,
9 appurtenance or ornamentation of the building or structure under service loads.

10
11 ~~Materials in the building may remain unless determined by the Building Official to render the building~~
12 ~~unsafe or dangerous.~~

- 13
14 • **Note:** Section deleted. Requirements are covered in Section 302.3

15 16 **602.2 402.2 New and Replacement Materials**

17
18 Except as otherwise required or permitted by this code, materials permitted by the applicable code for
19 new construction shall be used. Like materials shall be permitted for repairs and alterations, provided no
20 dangerous or unsafe condition, as defined in Chapter 2, is created. Hazardous materials, such as
21 asbestos and lead-based paint, shall not be used where the code for new construction would not permit
22 their use in buildings of similar occupancy, purpose, and location.

23
24 **Exception:** Repairs to a historic building shall be permitted using original or like materials. Materials shall
25 comply with Sections ~~602.2, 602.3 and 602.4~~ 402.1, 402.2 and 402.3

26 27 **602.3 402.2 Glazing in Hazardous Locations**

28
29 Replacement glazing in hazardous ~~areas~~ locations ~~must~~ shall comply with the safety glazing
30 requirements found in of the Florida Building Code, Building or Florida Building Code, Residential as
31 applicable.

32 33 **602.4 402.3 Replacement**

34
35 For repairs in an historic building, replacement, or partial replacement of existing or missing features that
36 match the original in configuration, height, size, and original methods of construction shall be permitted.

37
38 **Exception:** Glazing in hazardous locations shall comply with Section ~~602.3~~ 402.2.

39
40 Finally, the intent of a repair is to allow the building or structure to continue to the end of its useful life.
41 During repairs, the key is to not make the building any less safe than exists. For structural repairs, we
42 need to determine if it is "substantial" structural damage or repair through:

43
44 Evaluation

45 Extent of repair

46 If it involves load carrying components

47
48 One exception to the general rule regarding existing components is electrical modifications. Replacement
49 of electrical receptacles requires compliance with section 406.4(D) of the electrical code This portion of
50 the electrical code specifies how to handle replacement of receptacles. It also requires GFCI protection to
51 be provided if required and, if AFCI protection is required, it must be installed.

52

CHAPTER 10 CHANGE OF OCCUPANCY

1001.2 Certificate of Occupancy

A change of occupancy or a change of occupancy within a space where there is a different fire protection system threshold requirement in Chapter 9 of the Florida Building Code, Building shall not be made to any structure without the approval of the code official. A certificate of occupancy shall be issued where it has been determined that the requirements for the change of occupancy have been met.

1001.2.1 Change of Use

Any work undertaken in connection with a change in use that does not involve a change of occupancy classification or a change to another group within an occupancy classification shall conform to the applicable requirements for the work as classified in Chapter 5 and to the requirements of Sections 1002 through 1011.

Exception: As modified in Section 1205 for historic buildings. 1001.2.2 Change of occupancy classification or group. Where the occupancy classification of a building changes, the provisions of Sections 1002 through 1012 shall apply. This includes a change of occupancy classification and a change to another group within an occupancy classification.

1001.2.2.1 Partial Change of Occupancy

Where the occupancy classification or group of a portion of an existing building is changed, Section 1012 shall apply.

1001.3 Certificate of occupancy required

A certificate of occupancy shall be issued where a change of occupancy occurs that results in a different occupancy classification as determined by the Florida Building Code, Building.

1203 Standards and Guidelines for Rehabilitating Historic Buildings

1203.1 Historic Preservation Goal

The historic preservation goal of this code shall be to minimize damage to and loss of historic structures, their unique characteristics, and their contents as follows:

Maintain and preserve original space configurations of historic buildings
Minimize alteration, destruction or loss of historic fabric or design.

The six primary objectives for preserving these structures are listed below.

1203.2 Historic Preservation Objectives

Preservation of the original qualities or character of a building, structure, site, or environment shall be encouraged.

Removal or alteration of any historic material or distinctive architectural features shall be minimized.

Distinctive stylistic features or examples of skilled craftsmanship that characterize a building, structure or site shall be treated with sensitivity.

A compatible use for a property that requires minimal alteration of the building, structure or site and its environment shall be encouraged.

New additions or alterations shall be designed and constructed in such a manner that if such additions or alterations were to be removed in the future, the essential form and integrity of the structure would be

1 unimpaired to the greatest degree possible.

2 Repairs, alterations, restorations, changes of occupancy, additions, and relocations shall be guided by
3 the recommended approaches in rehabilitation set forth in the Secretary of the Interior's Standards for
4 Rehabilitation and Guidelines for Rehabilitating Historic Buildings (Appendix B).

5

6 **1205 Compliance**

7

8 **1205.1 Strict Compliance**

9

10 Historic structures or portions of such structures that do not strictly comply with this code shall be
11 considered to be in compliance if it can be shown to the satisfaction of the building code official that
12 equivalent protection has been provided or that no hazard will be created or continued through
13 noncompliance.

14

15 **CHAPTER 15 CONSTRUCTION SAFEGUARDS**

16

17 **1504 Fire Extinguishers**

18

19 **[F] 1504.1 Where Required**

20

21 All structures under construction, alteration, or demolition shall be provided with not less than one
22 approved portable fire extinguisher in accordance with the Florida Fire Prevention Code and sized for not
23 less than ordinary hazard as follows:

24

25 At each stairway on all floor levels where combustible materials have accumulated

26 In every storage and construction shed

27 Additional portable fire extinguishers shall be provided where special hazards exist including, but not
28 limited to, the storage and use of flammable and combustible liquids

29

30 **SUMMARY**

31

32 As can be seen by these rules, existing buildings, which make up the majority of the built environment,
33 are permitted to remain in use and be maintained. The code is concerned for the ongoing safety of the
34 users of the buildings. Provided structures are maintained in a safe and free of danger status, the code
35 permits their ongoing use.

Chapter 8

KNOW YOUR BUILDING CODE!

EIGHTH EDITION (2023)

FBC-PLUMBING

CHAPTER 1 SCOPE AND ADMINISTRATION

101.2 Scope

The provisions of this code shall apply to the erection, installation, alteration, repairs, relocation, replacement, addition to, use or maintenance of plumbing systems within this jurisdiction. This code shall regulate nonflammable medical gas, inhalation anesthetic, vacuum piping, nonmedical oxygen systems and sanitary and condensate vacuum collection systems. The installation of fuel gas distribution piping and equipment, fuel-gas-fired water heaters, and water heater venting systems shall be regulated by the International Fuel Gas Code. Provisions in the appendices shall not apply unless specifically adopted.

Exception: Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high with separate means of egress and their accessory structures shall comply with the International Residential Code.

[A] 101.3 Intent

The purpose of this code is to establish minimum standards to provide a reasonable level of safety, health, property protection, and public welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation, and maintenance or use of plumbing equipment and systems.

[A] 101.4 Severability

If any section, subsection, sentence, clause, or phrase of this code is for any reason held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this code.

IDENTIFYING PARTS OF THE SYSTEM

Service Disconnects

Knowing how and where to turn off or reset an electric breaker or replace a fuse. All systems need a method of being shut off from the supply.

Every building was required to have a main water shut-off valve installed inside the home during initial construction. So, for most emergencies or repairs, shutting off the proper inside valve is as important as knowing how and where to shut off a buildings main water supply. There are also underground shut-off valves installed at the property line; if shutting off this valve is necessary.

1 Background

2
3 It is important to understand that different plumbing arrangements will dictate where the proper main
4 supply valve is located, such as the following:

5
6 Some buildings have the water meter located inside, while others are located outside, underground within
7 a "pit" at or near the property line or right-of-way. Some homes also have submeters that are typically
8 inside even if the main meter is outside/underground.

9 Newer homes have fire sprinkler systems, while older ones generally do not.

10 Home construction also differs greatly as in basements, crawlspaces, and slab-on-grade.

11 Water shut-off valves may have round "wheel" handles or lever handles.
12

13 Locating the Proper Valve

14
15 **Basements:** The shut-off valve is typically located near the front foundation wall. The main water may
16 have come through the concrete floor or through the wall. The valve is typically within 3-5 feet of where
17 the main water enters. In some cases, the main water may enter in a different area, like a mechanical
18 room, up through the floor, or near the water heater or furnace.
19

20 **Crawlspace with no basement:** The shut off valve will typically be located near the water heater or
21 under the kitchen sink, but anywhere is possible. As mentioned above, it may be inside the crawlspace; in
22 which case, you may want to consider a secondary valve located up in the living space (near the water
23 heater or under a sink).
24

25 **Slab-on-grade construction:** The shut-off valve will typically be located near the water heater or under
26 the kitchen sink, but anywhere is possible.
27

28 Choosing the Proper Valve to Operate

29
30 If a home has a fire sprinkler system, care is needed when selecting a shut-off valve. Unless it is a
31 sprinkler pipe that is leaking, you should only shut off the home's plumbing supply and leave the sprinkler
32 piping charged/live.
33

34 If the water shutdown is for a broken sprinkler line or sprinkler head, then locate the first valve (closest to
35 the main water line entry point) and operate that valve as described below.

36 For all other general plumbing shut offs, emergency, and non-emergency:
37

38 For homes with fire sprinklers and an inside main water meter, locate and operate the second valve, it will
39 be above the main meter and past (downstream) of the fire sprinkler system "tee." If you have a
40 submeter, its second valve will only isolate the irrigation and/or hose bibs.

41 For homes with fire sprinklers and an outside main water meter, locate and operate the second valve, it
42 will be past (downstream) of the fire sprinkler "tee."

43 For homes without fire sprinklers and with an inside main water meter, either valve will shut off the supply
44 to the home but operating the second valve is a good practice and a safeguard if you are unsure of
45 whether the home has fire sprinklers or not.

46 For homes without fire sprinklers and with an outside main water meter, there will likely only be one shut-
47 off valve that will shut down the entire home.

1 **Backflow**

2
3 A backflow preventer is a device that's installed on a home's water pipes that allows water to flow in one
4 direction but never in the opposite direction. Its sole job is to prevent drinking water from being
5 contaminated due to backflow.
6

7 **How Backflow Happens**

8
9 When water enters a home from the main water supply line, it should only ever flow in one direction - into
10 a home.

11
12 But sometimes, due to pressure changes in the pipes, that water can actually flow backwards and seep
13 back into the main water supply line.
14

15 For example, backflow can happen when there's a break in the main water line or when a fire hydrant is
16 opened for use. Because pressure is lost during these events, water is no longer being pushed forward
17 into the home and will flow backwards into the city water lines. When this happens, backflow can
18 contaminate the public drinking supply with:
19

- 20 • Fertilizers/pesticides
 - 21 • Human waste
 - 22 • Chlorine from pools/spas
 - 23 • Soap from sinks/dishwashers/showers
- 24

25 That's where a backflow prevention system comes in handy. Let's take a closer look at how a backflow
26 prevention system works.
27

28 **Backflow Prevention System**

29
30 Backflow prevention systems are devices installed onto a pipe that only allow water to flow in one
31 direction. Think of it as a one-way gate that allows water from the city's public water supply to flow into a
32 home's piping but stops water when it tries to flow backwards into the main water supply.
33

34 The parts you can't see are described below.
35

36 Every habitable dwelling, and most commercial buildings have at least two plumbing systems, a potable
37 water supply and a drainage waste system (also called a drain, waste, and vent system). The potable
38 water supply system is used to deliver water to a building and to the fixtures within that building.
39

40 Once that water is used, and sent down the drain, the drainage and waste system are in charge of
41 disposing it; usually via the municipal sewage treatment system, or a septic system.
42

43 **Supply lines:** Water supply lines are installed for the purpose of supplying fresh water into the building.
44 In a bathroom, water supply line means connecting plumbing fixtures with the main water distribution line
45 of the building with pipes, so that water can reach them.
46

47 Federal law enacted in January 2014, requires pipe, pipe fittings, joints, valves, faucets, and fixture
48 fittings that are used to supply water for drinking or cooking to have not more than 25% lead content and
49 must comply with NSF 372.
50

51 **Drains:** Drainage is the method of removing surface or sub-surface water from a given area. Drainage
52 systems include all of the piping within a private or public property that conveys sewage, rainwater, and
53 other liquid waste to a point of disposal. The main objective of a drainage system is to collect and remove
54 waste matter systematically to maintain healthy conditions in a building. Drainage systems are designed
55 to dispose of wastewater as quickly as possible and should prevent gases from sewers and septic tanks
56 from entering residential areas.
57

58 The drain system within a home, works entirely by gravity, allowing wastewater to flow downhill through a

1 series of large diameter pipes. These drainpipes are connected to a vent pipe system that bring fresh air
 2 to the drainpipes, preventing suction that would either stop or slow the free flow of wastewater. Vent pipes
 3 exit the building through one or more roof vents. Care must be taken to ensure that these roof vents do
 4 not become clogged. Leaves and bird nests are two ways in which these roof vents can become clogged.
 5

6 All wastewater flows to the main waste and vent stack. The main stack curves to become a sewer line
 7 that exits the building near the foundation. In a municipal system, this is a sewer line. Where sewer
 8 service is not available, the line runs to a septic system that is simply a mini-wastewater treatment facility.
 9

- 10 • **Traps:** A plumbing drain trap is designed to retain a small amount of water each time the sink
 11 drains, and this water standing in the bottom of the curved portion of the trap seals the drain and
 12 keeps sewer gasses from escaping the drain and entering the home. The following types of traps
 13 are prohibited:
 - 14 ○ Traps that depend on moving parts to maintain the seal
 - 15 ○ Bell traps
 - 16 ○ Crown-vented traps
 - 17 ○ Traps not integral with a fixture and that depend on interior partitions for the seal, except
 18 those traps constructed of an approved material that is resistant to corrosion and degradation
 - 19 ○ "S" traps
 - 20 ○ Drum traps
 - 21 ▪ **Exception:** Drum traps used as solids interceptors and drum traps serving
 22 chemical waste systems shall not be prohibited.
 - 23 ○ Each fixture trap shall have a liquid seal of not less than 2 inches (51 mm) and not more than
 24 4 inches (102 mm), or deeper for special designs relating to accessible fixtures.
 25

26 **Sewer:** Every building in which plumbing fixtures are installed and premises having drainage piping shall
 27 be connected to a publicly owned or investor-owned sewage system, where available, or an approved
 28 onsite sewage treatment and disposal system in accordance with F.A.C. 64E-6, Standards for Onsite
 29 Sewage Treatment and Disposal Systems.
 30

31 CHAPTER 2 DEFINITIONS

32
 33 **ACCESSIBLE.** Describes a site, building, facility or portion thereof that complies with Chapter 11 of the
 34 Florida Building Code, Building.
 35

- 36 • **Note:** New definition added for accessible which describes a site, building, facility, or portion
 37 thereof that complies with Chapter 11 of the FBCB.
 38

39 **[A] APPROVED AGENCY.** An established and recognized agency that is regularly engaged in
 40 conducting tests or furnishing inspection services or furnishing product certification where such agency
 41 has been approved by the code official.
 42

43 **Note:** New language added clarifying that approved agencies also furnish product certifications.
 44

45 **FIXTURE FITTING.**

- 46
 47 • **Supply fitting.** A fitting that controls the volume, direction of flow or both, of water and is either
 48 attached to or ~~accessible~~ is accessed from a fixture or is used with an open or atmospheric
 49 discharge.
- 50 • **Waste fitting.** A combination of components that conveys the sanitary waste from the outlet of a
 51 fixture to the connection to the sanitary drainage system.
 52
- 53 • **Note:** Definition revised to coordinate the use of the terms accessible and access in the code.
 54

55 **[A]FULL-OPEN VALVE.** A water control or shutoff component in the water supply system piping that,
 56 where adjusted for maximum flow, the flow path through the component's closure member is not a
 57 restriction in the component's through-flow area.
 58

- **Note:** New definition added to define a phrase that is used in various places in the code. The new definition encompasses all types of valves that do not appreciably restrict the flow of water.

PRESS-CONNECT JOINT. A permanent mechanical joint incorporating an elastomeric seal or an elastomeric seal and corrosion-resistant grip ring. The joint is made with a pressing tool and jaw or ring approved by the fitting manufacturer.

- **Note:** New definition of Press-Connect Joint has been added for consistency with other volumes of the FBC.

PUBLIC SWIMMING POOL. See Section 454 of the Florida Building Code, Building.

- **Note:** New definition referring to Section 454 of the FBCB.

STERILIZER.

- **Boiling type.** A boiling-type sterilizer is a fixture of a nonpressure type utilized for boiling instruments, utensils, or other equipment for disinfection. These devices are portable or are connected to the plumbing system.
- **Instrument.** A device for the sterilization of various instruments.
- **Pressure (autoclave).** A pressure vessel fixture designed to utilize steam under pressure for sterilizing.
- **Pressure instrument washer sterilizer.** A pressure vessel fixture designed to both wash and sterilize instruments during the operating cycle of the fixture.
- **Utensil.** A device for the sterilization of utensils as utilized in health care services.
- **Water.** A device for sterilizing water and storing water.

STERILIZER VENT. A separate pipe or stack, indirectly connected to the building drainage system at the lower terminal, that receives the vapors from nonpressure sterilizers, or the exhaust vapors from pressure sterilizers, and conducts the vapors directly to the open air. Also called vapor, steam, atmospheric or exhaust vent.

- **Note:** Both definitions have been deleted.

[A] STRUCTURE. That which is built or constructed ~~or a portion thereof~~.

- **Note:** Definition editorially revised for consistency with other volumes of the FBC.

SWIMMING POOL. Any structure, basin, chamber, or tank containing an artificial body of water for swimming, diving or recreational bathing having a depth of 2 feet (610 mm) or more at any point.

- **Note:** Definition deleted.

CHAPTER 4 FIXTURES, FAUCETS, AND FIXTURE FITTINGS

Devices and Appliances

The following are permanently installed and required:

- Dishwasher
- Disposal
- Water Heater (required)
- Washer
- Sinks and faucets
- Bathtub/Shower (required)

Whirlpool Bathtubs

Whirlpool bathtubs need special care when installing them. The following is the updated code related to this issue.

421.1 Approval

Whirlpool bathtubs shall comply with ASME A112.19.7/CSA B45.10 and shall be listed and labeled in accordance with UL 1795.

421.2 Installation

Whirlpool bathtubs shall be installed and tested in accordance with the manufacturer's instructions. The pump shall be located above the weir of the fixture trap.

421.3 Drain

The pump drain and circulation piping shall be sloped to drain the water in the volute and the circulation piping when the whirlpool bathtub is empty.

421.4 Suction Fittings

Suction fittings for whirlpool bathtubs shall comply with ASME A112.19.7/CSA B45.10.

421.5 Access to Pump

Access shall be provided to circulation pumps in accordance with the fixture or pump manufacturer's installation instructions. Where the manufacturer's instructions do not specify the location and minimum size of field-fabricated access openings, an opening not less than 12 inches by 12 inches (305 mm by 305 mm) shall be installed to provide access to the circulation pump. Where pumps are located more than 2 feet (609 mm) from the access opening, an opening not less than 18 inches by 18 inches (457 mm by 457 mm) shall be installed. A door or panel shall be permitted to close the opening. In all cases, the access opening shall be unobstructed and of the size necessary to permit the removal and replacement of the circulation pump.

421.6 Whirlpool Enclosure

Doors within a whirlpool enclosure shall conform to ASME A112.19.15.

FLOOD ZONES**An Important Note**

No matter what system is being installed, pay attention to flood zone requirements. Many things have changed, and this impacts all systems. Check the community flood maps to see if you are dealing with an SFHA (Special Flood Hazard Area). Many communities have a local flood zone ordinance.

Chapter 3 General Regulations**309.1 General**

Plumbing systems and equipment in structures erected in flood hazard areas shall be constructed in accordance with the requirements of this section and the Florida Building Code, Building.

[BS] 309.2 Flood Hazard

For structures located in flood hazard areas, the following systems and equipment shall be located and installed as required by Section 1612 of the Florida Building Code, Building.

- 1 Water service pipes
- 2 Pump seals in individual water supply systems where the pump is located below the design flood
- 3 elevation
- 4 Covers on potable water wells shall be sealed, except where the top of the casing well or pipe sleeve is
- 5 elevated to not less than 1 foot (305 mm) above the design flood elevation
- 6 Sanitary drainage piping
- 7 Storm drainage piping
- 8 Manhole covers shall be sealed, except where elevated to or above the design flood elevation
- 9 Other plumbing fixtures, faucets, fixture fittings, piping systems and equipment
- 10 Water heaters
- 11 Vents and vent systems

12
13 **Exception:** The systems listed in this section are permitted to be located below the elevation required by
14 Section 1612 of the Florida Building Code, Building for utilities and attendant equipment, provided that the
15 systems are designed and installed to prevent water from entering or accumulating within their
16 components and the systems are constructed to resist hydrostatic and hydrodynamic loads and stresses,
17 including the effects of buoyancy, during the occurrence of flooding up to such elevation.

18 19 **[BS] 309.3 Coastal High-Hazard Areas and Coastal A Zones**

20
21 Structures located in coastal high-hazard areas and coastal A zones shall meet the requirements of
22 Section 309.2. The plumbing systems, pipes and fixtures shall not be mounted on or penetrate through
23 walls intended to break away under flood loads.

24 25 **WATER CONSERVATION**

26 27 **Water Conservation Defined**

28 29 **401.3 Water Conservation**

30
31 The maximum water flow rates and flush volume for plumbing fixtures and fixture fittings shall comply with
32 Section 604.4.

33
34 Water is one of our most important resources, as every living thing needs water to survive. Water
35 conservation means using less water or recycling used water so that it can be used again. This type of
36 program is important because water conservation helps save energy, protect wild animals, and prevent
37 people from using so much water that it cannot be replaced with rain. Water conservation also helps
38 people and governments save money.

39 40 **Water Conservation Requirements**

41 42 **604.4 Maximum Flow and Water Consumption**

43
44 The maximum water consumption flow rates and quantities for all plumbing fixtures and fixture fittings
45 shall be in accordance with Table 604.4.

46 47 **Exceptions:**

48
49 Blowout design water closets having a water consumption not greater than 3 1/2 gallons (13 L) per
50 flushing cycle

51 Vegetable sprays

- 1 Clinical sinks having a water consumption not greater than 4 1/2 gallons (17 L) per flushing cycle
- 2 Service sinks
- 3 Emergency showers
- 4

**TABLE 604.4
MAXIMUM FLOW RATES AND CONSUMPTION FOR PLUMBING FIXTURES AND FIXTURE FITTINGS**

PLUMBING FIXTURE OR FIXTURE FITTING	MAXIMUM FLOW RATE OR QUANTITY ^b
Lavatory, private	2.2 gpm at 60 psi
Lavatory, public (metering)	0.25 gallon per metering cycle
Lavatory, public (other than metering)	0.5 gpm at 60 psi
Shower head ^a	2.5 gpm at 80 psi
Sink faucet	2.2 gpm at 60 psi
Urinal	1.0 gallon per flushing cycle
Water closet	1.6 gallons per flushing cycle

5
6

F.S. 553.963(3) Standards for Showerheads

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- (a) The initial minimum standards for showerheads manufactured on or after January 1, 1988, shall require the limiting of maximum water discharge to 3.00 gallons per minute when tested according to ANSI A112.18.1M-1979.
- (b) Showerheads manufactured for use in safety spray installations shall be exempt.

Water Conservation during Alterations

14

15

16

17

18

When water conservation alterations are performed under Level 2, the codes that apply are found in FBC-Existing Building, Chapter 8 Alterations Level 2, Sections 810 and 1010, as outlined below.

19

810.1 Minimum Fixtures

20

21

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Where the occupant load of the story is increased by more than 20 percent, plumbing fixtures for the story shall be provided in quantities specified in the Florida Building Code, Plumbing based on the increased occupant load.

25

810.2 Separate Facilities

26

27

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Separate facilities shall not be required for single-user facilities that are or will be provided in places of public accommodation or commercial facilities (as defined in 28 C.F.R. 36.104). Two single-user facilities that are not identified for exclusive use by either sex shall be permitted to serve as required separate facilities and shall count toward the minimum number of required plumbing fixtures. Signage identifying these facilities shall be provided as set forth in the Florida Building Code, Accessibility.

33

1010.1 Increased Demand

34

35

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37

38

39

Where the occupancy of an existing building or part of an existing building is changed such that the new occupancy is subject to increased or different plumbing fixture requirements or to increased water supply requirements in accordance with the Florida Building Code, Plumbing, the new occupancy shall comply with the intent of the respective Florida Building Code.

40

1010.2 Food-Handling Occupancies

41

42

43

44

45

If the new occupancy is a food-handling establishment, all existing sanitary waste lines above the food or drink preparation or storage areas shall be panned or otherwise protected to prevent leaking pipes or condensation on pipes from contaminating food or drink. New drainage lines shall not be installed above such areas and shall be protected in accordance with the Florida Building Code, Plumbing.

1010.3 Interceptor Required

If the new occupancy will produce grease or oil-laden wastes, interceptors shall be provided as required in the Florida Building Code, Plumbing.

1010.4 Chemical Wastes

If the new occupancy will produce chemical wastes, the following shall apply:

If the existing piping is not compatible with the chemical waste, the waste shall be neutralized prior to entering the drainage system, or the piping shall be changed to a compatible material.
No chemical waste shall discharge to a public sewer system without the approval of the sewage authority.

1010.5 Group I-2

If the occupancy group is changed to Group I-2, the plumbing system shall comply with the applicable requirements of the Florida Building Code, Plumbing.

1010.6 Separate Facilities

Where the occupancy or group of an existing building or part of an existing building is changed, single-user facilities that are or will be provided shall be permitted to comply with Section 810.2.

THE EVOLUTION OF PLUMBING SYSTEMS

The Roman Empire first used lead and clay pipes for portable water that serviced private homes, amphitheaters, and bathhouses throughout their empire. Lead was used throughout the United States for water services that serviced homes and businesses up until the beginning of WWII. The fact that lead was very flexible and extremely durable made it an ideal piping material. The use of lead for potable water declined after WWII because of the dangers of lead poisoning. Lead pipes are no longer used and are still being replaced to this day in some of our larger older cities across the U.S.

Federal law enacted in January 2014, requires pipes, pipe fittings, joints, valves, faucets, and fixture fittings that are used to supply water for drinking or cooking have not more than 25% lead content.

Common Plumbing Materials

The following materials are commonly used in the plumbing trade.

Polyvinyl chloride (PVC): Of the different types of plastic pipe used for water supply, PVC has a wide variety of plumbing uses, from drainage pipe to water mains. It is most commonly used for irrigation piping, home and building supply piping, and pool and spa systems. PVC is often white, but it can also come in other colors. You can often tell what it is used for by the colors and mark on the pipe. For example, purple pipe with black lettering is used for reclaimed water. PVC also comes in a variety of thicknesses called schedules. Schedule 40 is the most common for water distribution.

Chlorinated polyvinyl chloride (CPVC): It is often (but not always) a cream-colored or off-white plastic. This type of pipe can stand temperatures up to about 180 degrees F or so (this depends on the schedule), so it can be used for hot and cold water inside of a house or mobile home. Since CPVC is the same outside diameter as copper and PEX, the same push-fit fittings, such as SharkBite, will fit the CPVC piping.

As with PVC, you should use primer and glue when making a CPVC joint. Also, make sure the glue you are using says that it can be used on CPVC. This glue is usually a different color, such as orange, so you know that it is used for CPVC. There are also "universal" pipe glues that are designed to work with many different types of plastic pipe.

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Cross-linked polyethylene (PEX): PEX is commonly used for hot and cold water in homes, and for hydronic heating systems, such as radiant under-floor systems due to its resistance to hot and cold temperatures. PEX is widely used for its competitive pricing, ease of use, and the long rolls of piping that it can come in. PEX can be joined in many different ways including push-fit fittings and specialty PEX tools used with crimp rings to secure the joints.

This type of pipe is mostly used for hot and cold-water distribution, as well as being regularly used in HVAC systems for refrigerant lines. Although once used in gas piping, this is no longer allowed in most jurisdictions.

Copper: Copper piping works in both underground and above-ground applications, but copper can be affected by some soils and should be sleeved if used underground. Due to the price of copper and longer labor needed to install it, many builders are switching to alternative water distributions piping, such as PEX.

Copper comes in different thicknesses that are labeled M, L, and K, with M being the thinnest. Copper pipes can be connected in different ways, including compression fittings or with a torch so you can sweat solder it.

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Chapter 8

KNOW YOUR BUILDING CODE!

EIGHTH EDITION (2023)

FBC-MECHANICAL

CHAPTER 2 DEFINITIONS

Section 201 General

201.1 Scope

Unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, have the meanings indicated in this chapter.

201.2 Interchangeability

Words used in the present tense include the future; words in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

201.3 Terms Defined in Other Codes

Where terms are not defined in this code and are defined in the Florida Building Code, Building; Florida Fire Prevention Code; Florida Building Code, Fuel Gas, or the Florida Building Code, Plumbing such terms shall have meanings ascribed to them as in those codes.

201.4 Terms not Defined

Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings, such as the context implies.

Section 202 General Definitions

BALANCED VENTILATION. Any combination of concurrently operating mechanical exhaust and mechanical supply whereby the total mechanical exhaust flow rate is within 10% of the total mechanical supply airflow rate.

- **Note:** New definition added defining balanced ventilation as any combination of concurrently operating mechanical and exhaust and supply where the total mechanical exhaust flow rate is within 10% of the total mechanical supply airflow rate. See Section 403.3.2.1.

LARGE-DIAMETER CEILING FAN. A ceiling fan that is greater than 7 feet (2134 mm) in diameter. These fans are sometimes referred to as high-volume, low-speed (HVLS) fans.

- **Note:** New definition added referring to ceiling fans that have a diameter greater than 7 feet.

POLLUTION CONTROL UNIT (PCU). Manufactured equipment that is installed in a grease exhaust duct system for the purpose of extracting smoke, grease particles and odors from the exhaust flow by means of a series of filters.

- **Note:** New definition added addressing equipment installed in a grease exhaust duct system for the purpose of extracting smoke, grease particles, and odors from the exhaust flow by means of a series of filters. See Section 506.5.2.

IDENTIFYING PARTS OF THE SYSTEM

HVAC

Heating, ventilation, and air conditioning (HVAC): refers to the different systems used for moving air between indoor and outdoor areas, along with heating and cooling both residential and commercial buildings. They are the systems that keep you warm and cozy in the winter and feeling cool and fresh in the summer. They also filter and clean indoor air to keep you healthy and maintain humidity levels at optimal comfort levels.

HVAC is a common term that people use, and most have a general idea of what it's referring to. On the other hand, how does HVAC work?

Air Handlers

An air handler's main function is to circulate the air in the system, and the components surrounding it alter the functionalities of heating, cooling, and air quality.

Although there are multiple ways and places you can install an air handler, the unit connects to the rest of the home through a series of supply and return ventilation ducts that recirculate the air in each room.

Air handlers can be paired with an air conditioner, heat pump, and sometimes even a mini split system for both heating and cooling functions. Additionally, air handlers can also be equipped with a heating coil to provide supplementary heat.

Components of an Air Handler

Just like a furnace, air handlers contain a blower (fan), controls, and an evaporator coil that conditions and recirculates the air in a home. The air handler works with the outdoor unit (a condenser or heat pump) in a typical split system by using refrigerant lines that connect the two systems.

Depending on where you live, the parts that make up the system will change. The components listed below are found in the typical heat-pump/air conditioning setups.

Blower motor: Moves air through the connected ductwork to circulate throughout the home.

- Single and multi-speed motors will run at set revolutions per minute (RPM) and are capable of moving consistent amounts of air, measured in cubic feet per minute.
- Variable speed motors, sometimes known as an electronically commutated motor (ECM), monitor changing conditions and adjust those outputs for maximized efficiency.

Plenum connectors: These are air-collection boxes that connect the supply and return ductwork throughout the home to the air handler.

Air filter: Air filters protect the internal components by capturing particulates from the incoming air.

Condensers

A condenser is a device or unit used to condense a gaseous substance into a liquid state through cooling. In so doing, the latent heat is released by the substance and transferred to the surrounding environment.

The four main parts of refrigerating and air conditioning systems are the compressor, condenser, throttling or expansion valve, and the evaporator. The refrigerant leaving the compressor is in the gaseous state, and at a high pressure and temperature. This refrigerant then enters the condenser where

1 it loses the heat to the coolant that can be air or water. After passing through the condenser, the
2 refrigerant is condensed but still remains at high pressure. It comes out in a partially liquid and gaseous
3 state, then enters the throttling or expansion valve.
4

5 The three types of condensers are air cooled, water cooled, and evaporative. These are described below.
6

7 **Air cooled condensers:** Air cooled condensers are used in small units like household refrigerators, deep
8 freezers, water coolers, window air conditioners, split air conditioners, small-packaged air conditioners,
9 etc. These are used in plants where the cooling load is small and the total quantity of the refrigerant in the
10 refrigeration cycle is small. Air cooled condensers are also called coil condensers as they are usually
11 made of copper or aluminum coil. They occupy a comparatively larger space than water cooled
12 condensers. The two types of air-cooled condensers are natural convection and forced convection.

- 13 • In the natural convection type, the air flows over it in natural a way depending upon the
14 temperature of the condenser coil.
- 15 • In the forced air type, a fan operated by a motor blows air over the condenser coil.
16

17 **Water cooled condensers:** Water cooled condensers are used for large refrigerating plants, big,
18 packaged air conditioners, central air conditioning plants, etc. These are used in plants where cooling
19 loads are excessively high and a large quantity of refrigerant flows through the condenser. The three
20 types of water-cooled condensers are tube-in-tube or double pipe type, shell and coil type and shell and
21 tube type. In all these condensers the refrigerant flows through one side of the piping while the water
22 flows through the other side, cooling and condensing the refrigerant.
23

24 **Evaporative condensers:** Evaporative condensers are usually used in ice plants. They are a
25 combination of water cooled and air-cooled condensers. In these condensers, the hot refrigerant flows
26 through the coils. Water is sprayed over these coils. At the same time, the fan draws air from the bottom
27 side of the condenser and discharges it from the top side of the condenser. The spray water that comes
28 in contact with the condenser coil is evaporated, absorbs the heat from the condenser, and cools and
29 condenses the refrigerant. Evaporative condensers have the benefits of both water cooled and air-cooled
30 condensers, so they occupy less space. However, keeping the evaporative condensers clean and free of
31 scale is difficult and requires lots of maintenance. For this reason, they are not favored by HVAC
32 designers.
33

34 Ductwork

35
36 Ductwork channels conditioned air to vents, takes return air back into the system, and transports exhaust
37 air and waste heat to the exterior of a home. Ducts serve a triple purpose: They carry warmth in winter,
38 hold cool air in summer, and provide ventilation for better indoor air quality throughout the year. Because
39 they're in use almost every day, the ducts need occasional maintenance to improve the longevity of the
40 heating and air conditioning equipment.
41

42 How it Works

43
44 The air conditioner (AC) processes two air sources: return air and supply air. Depending on the building's
45 construction, there may also be exhaust air ducts in the home, especially if the home is a multi-story
46 building, but most single-family homes use only supply and return ducts. Supply air comes from outside
47 the building via the ventilation system. Return air goes through the filter and into ducts that mix it with
48 supply air in a space called the plenum. The air in the plenum cools slightly as it combines external air
49 and recirculated air, but it is not until the air moves over the evaporator coils that it loses most of its heat.
50

51 The ducts that carry air to vents are separate from the return air ducts that bring air to the plenum and
52 through the main blower. The filters that remove smoke, dust, and other particulate matter from return air
53 serve a vital purpose and help keep the AC system's coils clean. Clean coils are efficient coils, because
54 the evaporator coils carry coolant ready for its freight of excess heat, the coils' fins must be free of soil
55 that could hamper thermal transfer.
56

Types of Air Ducts

The two major types of air ducts are defined below.

Rigid ducts: Rigid ducts are typically more expensive to install, but they are durable and quiet if the home has the space for them. Rigid materials are also easy to seal and clean. For forced-air systems, rigid materials maintain air pressure better than flexible options, which is why many homes use them for main trunk ductwork and use flexible materials for offshoots. The most common material for rigid ducting is galvanized steel, but polyurethane panels with additional insulation are becoming increasingly popular for new construction. Fiberglass panels are another possibility for rigid duct systems; they are well insulated and lightweight.

Flexible ducts: Flexible ducting, or flex, allows the AC installation specialist to fit ducts into smaller spaces and around existing architectural elements. Flex ducts are economical and compact, making them a good choice for reaching vents near corners or close to the house's eaves. Today, most flexible ducts are made from metal coils wrapped with insulating materials and polyethylene plastic, but older ducts may incorporate other plastics and metal films. When installing flexible ducts, ventilation technicians should avoid bending or kinking the wire within the tubing. Over short distances of under 15 feet and with no sharp bends, flexible ducts can approach the efficiency of rigid duct materials.

OTHER SYSTEMS

Exhaust Systems

An exhaust system is defined as, an assembly of connected ducts, plenums, fittings, registers, grilles, and hoods through which air is conducted from the space or spaces and exhausted to the outdoor atmosphere. It also serves to extract water and greasy vapor, smoke, fumes, toxic gases, obnoxious odors, heat, and aerosols out of the building. An exhaust system is found in kitchens, bathrooms, or any area that has a combustible energy source.

Section 501 General

501.1 Scope

This chapter shall govern the design, construction, and installation of mechanical exhaust systems, including exhaust systems serving clothes dryers and cooking appliances; hazardous exhaust systems; dust, stock, and refuse conveyor systems; sub slab soil exhaust systems; smoke control systems; energy recovery ventilation systems, and other systems specified in Section 502.

Section 502 Exhaust Systems

502.1 General

An exhaust system shall be provided, maintained, and operated as specifically required by this section and for all occupied areas where machines, vats, tanks, furnaces, forges, salamanders and other appliances, equipment, and processes in such areas produce or throw off dust or particles sufficiently light to float in the air, or which emit heat, odors, fumes, spray, gas, or smoke, in such quantities so as to be irritating or injurious to health or safety.

502.1.1 Exhaust Location

The inlet to an exhaust system shall be located in the area of heaviest concentration of contaminants.

[F] 502.1.2 Fuel-Dispensing Areas

The bottom of an air inlet or exhaust opening in fuel-dispensing areas shall be located not more than 18 inches (457 mm) above the floor.

502.1.3 Equipment, Appliance, and Service Rooms

Equipment, appliance, and system service rooms that house sources of odors, fumes, noxious gases, smoke, steam, dust, spray, or other contaminants shall be designed and constructed so as to prevent spreading of such contaminants to other occupied parts of the building.

[F] 502.1.4 Hazardous Exhaust

The mechanical exhaust of high concentrations of dust or hazardous vapors shall conform to the requirements of Section 510.

Ventilation**Section 401 General****401.2 Ventilation Required**

Every occupied space shall be ventilated by natural means in accordance with Section 402 or by mechanical means in accordance with Section 403. Where the air infiltration rate in a dwelling unit is less than 3 air changes per hour when tested with a blower door at a pressure of 0.2-inch water column (50 Pa) in accordance with Section R402.4.1.2 of the Florida Building Code, Energy Conservation, the dwelling unit shall be ventilated by mechanical means in accordance with Section 403. Ambulatory care facilities and Group I-2 occupancies shall be ventilated by mechanical means in accordance with Section 407.

401.3 When Required

Ventilation shall be provided during the periods that the room or space is occupied.

401.4 Intake Opening Location

Air intake openings shall comply with all of the following:

Intake openings shall be located not less than 10 feet (3048 mm) from lot lines or buildings on the same lot.

Mechanical and gravity outdoor air intake openings shall be located not less than 10 feet (3048 mm) horizontally from any hazardous or noxious contaminant source, such as vents, streets, alleys, parking lots, and loading docks, except as specified in Item 3 or Section 501.3.1. Outdoor air intake openings shall be permitted to be located less than 10 feet (3048 mm) horizontally from streets, alleys, parking lots, and loading docks provided that the openings are located not less than 25 feet (7620 mm) vertically above such locations. Where openings front on a street or public way, the distance shall be measured from the closest edge of the street or public way.

Intake openings shall be located not less than 3 feet (914 mm) below contaminant sources where such sources are located within 10 feet (3048 mm) of the opening.

Intake openings on structures in flood hazard areas shall be at or above the elevation required by Section 1612 of the Florida Building Code, Building for utilities and attendant equipment.

Section 402 Natural Ventilation**[BG] 402.1 Natural Ventilation**

Natural ventilation of an occupied space shall be through windows, doors, louvers, or other openings to the outdoors. The operating mechanism for such openings shall be provided with ready access so that the openings are readily controllable by the building occupants.

[BG] 402.2 Ventilation Area Required

1
2 The minimum openable area to the outdoors shall be 4 percent of the floor area being ventilated.

3 4 **[BG] 402.3 Adjoining Spaces**

5
6 Where rooms and spaces without openings to the outdoors are ventilated through an adjoining room, the
7 opening to the adjoining rooms shall be unobstructed and shall have an area not less than 8 percent of
8 the floor area of the interior room or space, but not less than 25 square feet (2.3 m²). The minimum
9 openable area to the outdoors shall be based on the total floor area being ventilated.

10
11 **Exception:** Exterior openings required for ventilation shall be permitted to open into a thermally isolated
12 sunroom addition or patio cover, provided that the openable area between the sunroom addition or patio
13 cover and the interior room has an area of not less than 8 percent of the floor area of the interior room or
14 space, but not less than 20 square feet (1.86 m²). The minimum openable area to the outdoors shall be
15 based on the total floor area being ventilated.

16 17 **[BG] 402.4 Openings Below Grade**

18
19 Where openings below grade provide required natural ventilation, the outside horizontal clear space
20 measured perpendicular to the opening shall be one and one-half times the depth of the opening. The
21 depth of the opening shall be measured from the average adjoining ground level to the bottom of the
22 opening.

23 24 **Section 403 Mechanical Ventilation**

25 26 **403.1 Ventilation System**

27
28 Mechanical ventilation shall be provided by a method of supply air and return or exhaust air except that
29 mechanical ventilation air requirements for Group R-2, R-3, and R-4 occupancies three stories and less in
30 height above grade plane shall be provided by an exhaust system, supply system, or combination thereof.
31 The amount of supply air shall be approximately equal to the amount of return and exhaust air. The
32 system shall not be prohibited from producing negative or positive pressure. The system to convey
33 ventilation air shall be designed and installed in accordance with Chapter 6.

34 35 **403.2 Outdoor Air Required**

36
37 The minimum outdoor airflow rate shall be determined in accordance with Section 403.3.

38
39 **Exception:** Where the registered design professional demonstrates that an engineered ventilation
40 system design will prevent the maximum concentration of contaminants from exceeding that obtainable
41 by the rate of outdoor air ventilation determined in accordance with Section 403.3, the minimum required
42 rate of outdoor air shall be reduced in accordance with such engineered system design.

43 44 **403.2.1 Recirculation of Air**

45
46 The outdoor air required by Section 403.3 shall not be recirculated. Air in excess of that required by
47 Section 403.3 shall not be prohibited from being recirculated as a component of supply air to building
48 spaces, except that:

49
50 Ventilation air shall not be recirculated from one dwelling to another or to dissimilar occupancies.

51 Supply air to a swimming pool and associated deck areas shall not be recirculated unless such air is
52 dehumidified to maintain the relative humidity of the area at 60 percent or less. Air from this area shall not
53 be recirculated to other spaces where more than 10 percent of the resulting supply airstream consists of
54 air recirculated from these spaces.

55 Where mechanical exhaust is required by Note b in Table 403.3.1.1, recirculation of air from such spaces
56 shall be prohibited. Recirculation of air that is contained completely within such spaces shall not be
57 prohibited. Where recirculation of air is prohibited, all air supplied to such spaces shall be exhausted,
58 including any air in excess of that required by Table 403.3.1.1.

1 Where mechanical exhaust is required by Note g in Table 403.3.1.1, mechanical exhaust is required and
2 recirculation from such spaces is prohibited where more than 10 percent of the resulting supply airstream
3 consists of air recirculated from these spaces. Recirculation of air that is contained completely within such
4 spaces shall not be prohibited.

5 6 **403.2.2 Transfer Air**

7
8 Except where recirculation from such spaces is prohibited by Table 403.3.1.1, air transferred from
9 occupiable spaces is not prohibited from serving as makeup air for required exhaust systems in such
10 spaces as kitchens, baths, toilet rooms, elevators, and smoking lounges. The amount of transfer air and
11 exhaust air shall be sufficient to provide the flow rates as specified in Section 403.3.1.1. The required
12 outdoor airflow rates specified in Table 403.3.1.1 shall be introduced directly into such spaces or into the
13 occupied spaces from which air is transferred or a combination of both.

14 15 **403.3 Outdoor air and local exhaust airflow rates.**

16
17 Group R-2, R-3, and R-4 occupancies three stories and less in height above grade plane shall be
18 provided with outdoor air and local exhaust in accordance with Section 403.3.2. All other buildings
19 intended to be occupied shall be provided with outdoor air and local exhaust in accordance with Section
20 403.3.1.

21 22 **403.3.1 Other Buildings Intended to be Occupied**

23
24 The design of local exhaust systems and ventilation systems for outdoor air for occupancies other than
25 Group R-2, R-3, and R-4 three stories and less above grade plane shall comply with Sections 403.3.1.1
26 through 403.3.1.5.

27 28 **403.3.1.1 Outdoor Airflow Rate**

29
30 Ventilation systems shall be designed to have the capacity to supply the minimum outdoor airflow rate,
31 determined in accordance with this section. In each occupiable space, the ventilation system shall be
32 designed to deliver the required rate of outdoor airflow to the breathing zone. The occupant load utilized
33 for design of the ventilation system shall be not less than the number determined from the estimated
34 maximum occupant load rate indicated in Table 403.3.1.1. Ventilation rates for occupancies not
35 represented in Table 403.3.1.1 shall be those for a listed occupancy classification that is most similar in
36 terms of occupant density, activities and building construction; or shall be determined by an approved
37 engineering analysis. The ventilation system shall be designed to supply the required rate of ventilation
38 air continuously during the period the building is occupied, except as otherwise stated in other provisions
39 of the code.

40
41 With the exception of smoking lounges, the ventilation rates in Table 403.3.1.1 are based on the absence
42 of smoking in occupiable spaces. Where smoking is anticipated in a space other than a smoking lounge,
43 the ventilation system serving the space shall be designed to provide ventilation over and above that
44 required by Table 403.3.1.1 in accordance with accepted engineering practice.

45
46 **Exception:** The occupant load is not required to be determined based on the estimated maximum
47 occupant load rate indicated in Table 403.3.1.1 where approved statistical data document the accuracy of
48 an alternate anticipated occupant density.

49 50 **Exhaust Hoods**

51
52 An exhaust hood is a device containing a mechanical fan that hangs above the stove or cooktop in the
53 kitchen. It removes airborne grease, combustion products, fumes, smoke, heat, and steam from the air by
54 evacuation of the air and filtration. In commercial kitchens, exhaust hoods are often used in combination
55 with fire suppression devices so that fumes from a grease fire are properly vented and the fire is put out
56 quickly. Commercial vent hoods may also be combined with a fresh air fan that draws in exterior air,
57 circulating it with the cooking fumes that are then drawn out by the hood.

58

1 In most exhaust hoods, a filtration system removes grease (the grease trap) and other particles. Although
2 many vents hoods exhaust air to the outside, some recirculate the air to the kitchen. In a recirculating
3 system, filters may be used to remove odors in addition to the grease.
4

5 **SPLIT AIR CONDITIONING SYSTEMS**

7 **How does a Typical Split System Work?**

8
9 A split air condition system is named as such because it has components that are located inside and
10 outside the home. It's literally split into two pieces. It is as referred to as "central air."

11
12 Consisting of an outdoor unit with a condenser and compressor, and an indoor unit with a fan and an
13 evaporator coil, a split air conditioning system works by removing warm air from a home and cycling it
14 back as cooler air through a system of supply and return ducts. Powered by electricity, the compressor
15 pumps refrigerant through the system to collect heat and moisture inside the home. That heat and
16 moisture is removed from the home when the warm air collected inside is blown over the cooled indoor
17 coil that cools the air. The heat transferred into the coil during this process is pumped outside the home,
18 while the cool air is cycled back inside.
19

20 A split air conditioning system is particularly effective in warmer climates, as it effectively keeps homes
21 cool and reduces humidity levels. It also features a lower indoor noise level compared to free-standing air
22 conditioning units, since its compressor-bearing unit is outside of the home. Central air conditioning
23 systems, such as a split system, provide the added benefit of air filtration because, as a "forced air"
24 system, air is drawn out of rooms through air returns and pulled through an air filter. This removes
25 airborne particles and results in cleaner, filtered air being redistributed to the home through air supply
26 ductwork.
27

28 **Transfer the Heat**

29
30 Heat is the amount of energy transferred due to temperature difference between two bodies. HVAC
31 equipment transfers thermal (heat) energy from one location to another.
32

33 Heat flows from areas of high temperature to areas of low temperature, according to the Second Law of
34 Thermodynamics. The HVAC system is responsible for reversing this natural flow, removing hot air from
35 buildings in the hot summers and placing it in buildings in the cold winters.
36

37 How does that happen? It's all about the heat exchanger. A heat exchanger is a device that transfers
38 thermal energy from one medium to another.
39

40 **How does a freon system work?**

41
42 Refrigerant is a general term that refers to a chemical blend inside an electro-mechanical air conditioner
43 that can shift easily between liquid and gaseous states. The earliest refrigerants were toxic or
44 combustible, which made air conditioning impractical outside of industrial buildings. But the invention of
45 the first non-toxic refrigerant blend, known by the trademarked name Freon, allowed air conditioners to
46 enter home use and spread across the country. The current standard refrigerant blend for residential air
47 conditioners is R-410A, sometimes called Puron, which produces fewer greenhouse gas emissions than
48 the previous blend, R-22.
49

50 As refrigerant transmutes from liquid to gas and back, it absorbs and releases heat. This is how it is
51 capable of cooling down a home. The compressor changes liquid refrigerant into a high-pressure, high-
52 temperature gas. The refrigerant moves to the outside coil of the air conditioner and releases its heat
53 there through condensation, cooling down. By the time it reaches the indoor coil, it has cooled down to
54 the point that it causes evaporation when it meets the warmer indoor air. This siphons heat from the air,
55 cooling it down. The refrigerant, once again a liquid, returns to the compressor to restart the cycle.
56

57 The refrigerant will remain at the same level for the life of the air conditioner unless leaks occur. If the
58 refrigerant level (its charge) starts to drop, professionals need to repair the system as soon as possible.

1 Low refrigerant will not only lower the cooling ability of the AC, but it can also severely damage the
2 compressor.
3

4 **Section 1401 General**

5 **1401.1 Scope**

6
7
8 This chapter shall govern the design, construction, installation, alteration, and repair of systems,
9 equipment, and appliances intended to utilize solar energy for space heating or cooling, domestic hot
10 water heating, swimming pool heating, or process heating.
11

12 **1401.2 Potable Water Supply**

13
14 Potable water supplies to solar systems shall be protected against contamination in accordance with the
15 Florida Building Code, Plumbing.
16

17 **Exception:** Where all solar system piping is a part of the potable water distribution system, in accordance
18 with the requirements of the Florida Building Code, Plumbing, and all components of the piping system
19 are listed for potable water use, cross-connection protection measures shall not be required.
20

21 **1401.3 Heat Exchangers**

22
23 Heat exchangers used in domestic water-heating systems shall be approved for the intended use. The
24 system shall have adequate protection to ensure that the potability of the water supply and distribution
25 system is properly safeguarded.
26

27 A heat exchanger is a device that transfers thermal energy from one medium to another.
28

29 **1401.4 Solar Energy Equipment and Appliances**

30
31 Solar energy equipment and appliances shall conform to the requirements of this chapter and shall be
32 installed in accordance with the manufacturer's instructions.
33

34 Solar energy can be defined as, the transformation of heat energy that comes from the sun to electricity.
35

36 **THE EVOLUTION OF MECHANICAL SYSTEMS**

37 38 **The Original - Ice on the Roof**

39
40 In the 1830s, at the Florida hospital where he worked, Dr. John Gorrie built an ice-making machine that
41 used compression to make buckets of ice and then blew air over them. He patented the idea in 1851,
42 imagining his invention cooling buildings all over the world. But without any financial backing, his dream
43 melted away.
44

45 In 1881, after an assassin shot President James Garfield on July 2nd, naval engineers built a boxy
46 makeshift cooling unit to keep him cool and comfortable. The device was filled with water-soaked cloth
47 and a fan that blew hot air overhead and kept the cool air closer to the ground. The good news: This
48 device could lower room temperature by up to 20 degrees F. The bad news: It used a half-million pounds
49 of ice in two months ... and President Garfield still died.
50

51 **Systems Through Time**

52
53 The Romans and Greeks used similar tactics to keep themselves cool. Though it was not until technology
54 accommodated advancements that the heating and air conditioning, we know today began taking shape.
55 **1830s** - Dr. John Gorrie of Florida wanted to provide a way to shorten recovery time for patients.
56 Believing that bad air was the root of illness, Gorrie used buckets of ice then blew air over them, resulting
57 in a cooling effect.

1 **1861** - William Siemens learned how to super heat coils with electricity. He installed a fan to blow air
2 through it, inventing the first electric furnace.

3 **1881** – After President James Garfield was shot, to provide him relief, naval engineers soaked pieces of
4 cloth in cold water and ice, then spun a fan over them.

5 **1902** - Willis Carrier of New York invented an apparatus of chilled coils to control the temperature and
6 humidity of a room. This machine was primarily utilized in businesses where high temperature and
7 humidity levels ruined products, like ink and paper.

- 8 • Carrier's first air conditioning units were large, costly, and dangerous as they used significant
9 amounts of ammonia. These units are used only in sizeable buildings like hotels, textile mills, and
10 hospitals.

11 **1914** - The first air-conditioned home was in Minneapolis, MN. Unfortunately, the HVAC unit was still
12 enormous. It towered at 7 feet and ran 20 feet along the room.

- 13 • For the next fifteen years, movie theaters were outfitted with heating and cooling systems. Being
14 able to provide a cool environment increased sales and attendance dramatically during the
15 summer, allowing businesses to boom all year round.

16 **1922** - Willis Carrier made two huge upgrades to his heating and cooling unit system. First, he replaced
17 ammonia with dyeline, a safer coolant for heating and air conditioning. Then, he reduced the size of the
18 unit. This allowed for HVAC to be available in more places like office suites, shopping malls, and railroad
19 cars.

- 20 • Within the next few years, central buildings like the House of Representatives, White House, and
21 Executive Office Building were fitted with HVAC.
- 22 • Unfortunately, rapid advancements for heating and air conditioning stopped. With the start of
23 World War II, commerce shifted toward producing military equipment. However, once the war was
24 over, Americans found that the economy was stronger than ever. There was an enormous surge
25 of sales in home heating and air conditioning.

26 **1942** - The U.S. built a power plant specifically to keep up with the growing load of electricity demanded
27 from heating and air conditioning.

28 **1953** - Over one million HVAC units were sold.

29 **1950s** - Improvements to the heating and cooling systems continued to be made. By the late 1950s,
30 motors were made to work more quietly, refrigeration was more efficient, and the HVAC unit was
31 relatively compact.

32 **1970s** - The central air system took over single heating and cooling units.

33 **2011** - Up to 100 million American homes had heating and air conditioning. Experts and engineers in the
34 HVAC industry continued to make improvements, making it safer, smarter, and easier to heat and cool
35 buildings.

37 **IMPACT OF THE ENERGY CODE**

38
39 Building energy codes represent a significant savings opportunity for U.S. home and business owners.
40 Model energy codes for residential and commercial buildings are projected to save (cumulative 2010-
41 2040):

42
43 \$126 billion energy cost savings
44 841 MMT of avoided CO2 emissions
45 12.82 quads of primary energy

46
47 These savings equate to the annual emissions of:

48
49 177 million passenger vehicles
50 245 coal power plants
51 89 million homes

Florida CLB 14-Hour CE Bundle

Exam #2024-1

This exam expires
on June 29, 2025.
It cannot be graded
after that date.

- Which one of the following Florida Statutes regulate the Department of Business and Professional Regulations?
 - F.S. 489
 - F.S. 455
 - F.S. 440
 - F.S. 713
- What was the year in which the Senate and House of Representatives of the United States of America in congress assembled enacted the Occupational Safety and Health Act?
 - 1969
 - 1970
 - 1974
 - 1976
- Which is the Department within the Florida Building Commission that is in charge of Product Approval?
 - Program Oversight Committee
 - Technical Advisory Committee
 - Workgroups comprised of Subject Experts and Interested Parties
 - TAC Chairpersons
- According to FBC, to be considered a pool, what is the minimum depth it must be?
 - 18 inches
 - 24 inches
 - 30 inches
 - 36 inches
- What Use & Occupancy Group regulates buildings or tenant spaces used for assembly purposes with an occupant load of less than 50 persons?
 - Group A
 - Group B
 - Group G-1
 - Group H-1
- According to F.S. 489.1425 – It is the duty of the contractor to notify the residential property owner of the existence of the Recovery Fund, unless the value of the contract does not exceed, which of the amount below?
 - \$3,000
 - \$2,500
 - \$2,000
 - \$1,500
- What is the penalty amount for filing a claim, that is 15-21 days late?
 - \$200
 - \$300
 - \$400
 - \$500
- What are the maximum and minimum interior design temperatures used for heating and cooling load calculations?
 - 75°F heating/72°F cooling
 - 72°F heating/75°F cooling
 - 78°F heating/68°F cooling
 - 75°F heating/68°F cooling
- What is the maximum distance above the surface of an occupied roof that elements or structures enclosing shall be allowed?
 - 24 inches
 - 36 inches
 - 48 inches
 - 60 inches
- As per the FBC-Mechanical – Flexible ducts over short distances of under which of the following length and with no sharp bend, can approach the efficiency of rigid duct materials?
 - 15 feet
 - 20 feet
 - 25 feet
 - None of the above
- The provisions of the Fla Building Code – Residential shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of which of the following structures?
 - Detached one- and two-family dwellings and townhouses not more than 3 stories
 - Accessory structures not more than 3 stories in height
 - Both A and B
 - Neither A nor B
- A qualifying engineer for engineering firm who leaves the company must notify the Board within, how many hours?
 - 72
 - 48
 - 24
 - None of the above

13. Access shall be provided to circulation pumps in accordance with the fixture or pump manufacturer's installation instructions. Where the manufacturer's instructions do not specify the location and minimum size of field-fabricated access openings, an opening not less than which of the following dimensions shall be installed to provide access to the circulation pump?
- 20 inches by 20 inches
 - 18 inches by 18 inches
 - 16 inches by 16 inches
 - 12 inches by 12 inches
14. What is the workers' compensation insurance rate increase that took effect on December 1, 2016, to affect 2017, per the Florida Office of Insurance Regulation?
- 10%
 - 14.5%
 - 12.5%
 - 15%
15. According to the FBC – Existing, all structures under construction, alteration, or demolition shall be provided with not less than one approved portable fire extinguishers in accordance with the Florida Fire Prevention Code and sized for not less than ordinary hazard at which of the following locations in the building?
- At each stairway on all floor levels where combustible materials have accumulated
 - In every storage and construction shed
 - Where special hazards exist including, but not limited to, the storage and use of flammable and combustible liquids
 - All of the above
16. There are four (4) methods of State Product Approval and which of the following are the Approving Authorities in the approval process?
- Department of Business and Professional Regulations
 - Florida Building Commission
 - Both A. and B
 - Neither A. nor B
17. How much is the amount of the OSHA Penalty for the year 2021 for a "Posting Requirement" violation?
- \$12,450
 - \$13,653
 - \$124,503
 - \$136,532
18. What does the performance path provide?
- Proven techniques
 - Mandatory Items
 - Versatility in design and application, usually modeled using computer software
 - Requirements from the Building Official
19. According to Successful Business Practices when evaluating risks management, which of the following are not an identified risk?
- Personnel lack the skills to perform the work assigned
 - Hardware not delivered on time
 - Infractions of Florida Statutes that will cause delays and downtime
 - Unlicensed contracting
20. Which of the following is true about the following statement "When boards adopt Rules, they are published, and if not challenged become part of the?"
- Florida Statutes
 - Florida Building Code
 - Florida Administrative Code
 - All of the above
21. According to the FBC Mechanical – which of the following is not a component of an air handler?
- Blower motor
 - Condenser
 - Plenum connectors
 - Air filter
22. In basements, at beams, girders, ducts, or other obstructions, what is the minimum ceiling height from the finished floor permitted by the Fla Building Code Residential?
- 6 feet 4 inches
 - 6 feet 8 inches
 - Both A and B
 - Neither A nor B
23. Double insulated means the pump has an extra layer of protection and all the electrical parts are located within a non-conductive housing. This means you cannot touch any of the electrical parts. Where do you find the symbol for this feature?
- Circuit breaker box
 - Specifications documents
 - Pump nameplate
 - All of the above

-
24. According to OSHA statistics In the year 2019, what percentage of the total fatalities in the private sector were in the construction industry?
- A. 15%
 - B. 20%
 - C. 25%
 - D. 27%
25. How long is an employer required to retain records of all workplace injuries?
- A. 2 ½ years
 - B. 3 years
 - C. 3 ½ years
 - D. 4 years
26. Which Florida Statute establishes the Florida Building Commission which guides the Florida Building Code and provides the overall guidance?
- A. F.S. 550
 - B. F.S. 553
 - C. F.S. 455
 - D. F.S. 489
27. Alteration Level 3 is just like level 2 alteration except where the work area exceeds what percentage of the aggregate building area of the building (total floor area)?
- A. 40%
 - B. 50%
 - C. 25%
 - D. 20%
28. According to the FBC-Plumbing - A permanent mechanical joint incorporating an elastomeric seal or an elastomeric seal and corrosion-resistant grip ring and where the joint is made with a pressing tool and jaw or ring approved by the fitting manufacturer, is known as?
- A. Press Joint
 - B. Press-Connect Joint
 - C. Regular Joint
 - D. Grip-Joint
29. The greater diversity that your workers have in performing company tasks, the easier time that you will experience in which of the following?
- A. Leisure
 - B. Better reputation
 - C. Scheduling
 - D. All of the above
30. A renovated building is one where the work exceeds what percentage of the assessed value of the structure?
- A. 30
 - B. 40
 - C. 50
 - D. 60

**Florida CILB 14-Hour Bundle
Continuing Education
Answer Sheet**

Course Approval #0613125; Provider #000983

**EXAM #
2024-1**

FL CILB 14-Hr CE

EXAM #2024-1

Exam expires:

June 19, 2025

Example:

(A) ● (C) (D)

Student Information

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I hereby certify that I personally (and without assistance) completed this CE course.

Signature: _____ Date: _____

Please note this exam cannot be graded after its expiration date.

1. (A) (B) (C) (D)
2. (A) (B) (C) (D)
3. (A) (B) (C) (D)
4. (A) (B) (C) (D)
5. (A) (B) (C) (D)
6. (A) (B) (C) (D)
7. (A) (B) (C) (D)
8. (A) (B) (C) (D)
9. (A) (B) (C) (D)
10. (A) (B) (C) (D)
11. (A) (B) (C) (D)
12. (A) (B) (C) (D)
13. (A) (B) (C) (D)
14. (A) (B) (C) (D)
15. (A) (B) (C) (D)
16. (A) (B) (C) (D)
17. (A) (B) (C) (D)
18. (A) (B) (C) (D)
19. (A) (B) (C) (D)
20. (A) (B) (C) (D)
21. (A) (B) (C) (D)
22. (A) (B) (C) (D)
23. (A) (B) (C) (D)
24. (A) (B) (C) (D)
25. (A) (B) (C) (D)
26. (A) (B) (C) (D)
27. (A) (B) (C) (D)
28. (A) (B) (C) (D)
29. (A) (B) (C) (D)
30. (A) (B) (C) (D)



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