



Advanced Florida Building Code 2023: Footings and Foundations Internet

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**Course Information**

Advanced Florida Building Code 2023: Footings and Foundations Internet

1 Hour Advanced Building Code Credit  
 Training Provider:  
 Florida Home Builders Association  
 1319 Thomaswood Dr. Tallahassee, FL 32308  
 Phone: (850)402-1849  
 FHBA.com  
 CILB & BCAIB Provider # 0000916  
 FBPE Provider # 0008653

CILB Approval # 0615375 | 1334.0 FBC  
 FBC Advanced Approval # 1334.0  
 Instructor: Shane Gerwig, [southeastcode@gmail.com](mailto:southeastcode@gmail.com)



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**Overview**

- Based on Chapter 4, FBC Residential
- Covers general foundation requirements
- Prescriptive foundation design
- Wind & flood considerations
- Contractor responsibilities: Ch. 489 F.S.



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## Eighth Edition Changes

- Snow and seismic references removed



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## R401 General

- Chapter 4 governs foundation design & construction
- Applies to one- and two-family dwellings & townhouses
- Flood hazard areas go to R322
- High Velocity Hurricane Zone per FBC-B



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## R401.2 Requirements

- Capable of resisting loads
  - Uplift (Table R401.1/Engineered Design)
  - Overturn
  - Gravity
- See R301



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### R401.3 Drainage

- Graded to drain away from foundation
- Fall 6" in first 10'
- Use drains and swales if within 10' from lot lines
- Impervious surfaces sloped 2% from building



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### R401.4 Soil Testing

- Building Official's discretion OR
- Use assumed capacities in T-R401.4.1

TABLE R401.4.1  
PRESUMPTIVE LOAD-BEARING  
VALUES OF FOUNDATION MATERIALS\*

CLASS OF MATERIAL	LOAD-BEARING PRESSURE (pounds per square foot)
Crystalline bedrock	12,000
Sedimentary and foliated rock	4,000
Sandy gravel and/or gravel (GW and GP)	3,000
Sand, silty sand, clayey sand, silty gravel and clayey gravel (SW, SP, SM, SC, GM and GC)	2,000
Clay, sandy, silty clay, clayey silt, silt and sandy silty clay (CL, ML, MH and CH)	1,500 <sup>b</sup>



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### R408.5

- Organic material shall be removed
  - Roots
  - Vegetation
  - Form boards removed prior to occupancy



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### R402.1 Materials

- Wood foundations
  - Fasteners
    - Stainless steel if underground
    - Stainless steel, hot dipped galvanized
    - Electro-galvanized not permitted
  - Pressure treated lumber and plywood



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### R402 Materials

- Concrete foundations
  - Compressive strength per T-R402.2 (2,500 psi)
  - For precast see R404.5 and R402.3.1



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### R402 Materials

- Masonry foundations
  - Compressive strength of 1,500 psi



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## R403 Footings

- Continuous footing/foundation for exterior walls
- Minimum size
  - Engineered design
  - ACI 332
  - Tables R403.1(1)-(3)
  - Resistant to uplift Table R403.1.2
  - 12" below grade regardless



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## R403 Footings

### Light Frame Construction

TABLE R403.1(1)  
MINIMUM WIDTH AND THICKNESS FOR CONCRETE FOOTINGS FOR LIGHT-FRAME CONSTRUCTION (inches)<sup>a, b</sup>

ROOF LIVE LOAD	STORY AND TYPE OF STRUCTURE WITH LIGHT FRAME	LOAD-BEARING VALUE OF SOIL (psf)					
		1500	2000	2500	3000	3500	4000
20 psf	1 story—slab-on-grade	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6
	1 story—with crawl space	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6
	1 story—plus basement	18 x 6	14 x 6	12 x 6	12 x 6	12 x 6	12 x 6
	2 story—slab-on-grade	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6
	2 story—with crawl space	16 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6
	2 story—plus basement	22 x 6	16 x 6	13 x 6	12 x 6	12 x 6	12 x 6
	3 story—slab-on-grade	14 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6
	3 story—with crawl space	19 x 6	14 x 6	12 x 6	12 x 6	12 x 6	12 x 6
	3 story—plus basement	25 x 8	19 x 6	15 x 6	13 x 6	12 x 6	12 x 6



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## R403 Footings

### Masonry and Concrete

TABLE R403.1(3)  
MINIMUM WIDTH AND THICKNESS FOR CONCRETE FOOTINGS WITH CAST-IN-PLACE CONCRETE OR FULLY GROUTED MASONRY WALL CONSTRUCTION (inches)<sup>a, b</sup>

ROOF LIVE LOAD	STORY AND TYPE OF STRUCTURE WITH CMU	LOAD-BEARING VALUE OF SOIL (psf)					
		1500	2000	2500	3000	3500	4000
20 psf	1 story—slab-on-grade	14 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6
	1 story—with crawl space	19 x 6	14 x 6	12 x 6	12 x 6	12 x 6	12 x 6
	1 story—plus basement	25 x 8	19 x 6	15 x 6	13 x 6	12 x 6	12 x 6
	2 story—slab-on-grade	23 x 7	18 x 6	14 x 6	12 x 6	12 x 6	12 x 6
	2 story—with crawl space	29 x 9	22 x 6	17 x 6	14 x 6	12 x 6	12 x 6
	2 story—plus basement	35 x 12	26 x 8	21 x 6	17 x 6	15 x 6	13 x 6
	3 story—slab-on-grade	32 x 11	24 x 7	19 x 6	16 x 6	14 x 6	12 x 6
	3 story—with crawl space	38 x 14	28 x 9	23 x 6	19 x 6	16 x 6	14 x 6
	3 story—plus basement	43 x 17	33 x 11	26 x 8	22 x 6	19 x 6	16 x 6



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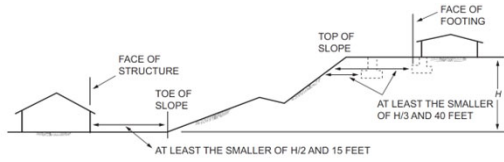
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### R403.1.7 Footings Near Slopes

- For area slopes steeper than 1:3
  - Sufficient distance from slope



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### R404 Foundation and Retaining Walls

- Engineered design
  - Subject to ground water
  - Supporting more than 48" of unbalanced backfill without lateral support



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### R404 Foundation and Retaining Walls

- Standards for construction
  - Masonry foundation walls: TMS 402/ACI 530/ASCE 5
  - Concrete foundation walls
    - ACI 318, ACI 332 or PCA 100 OR
    - Prescriptive code (See Tables R404.1.1)



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### 110.3 Required Inspections

- Foundation inspection
  - After excavation and forms installed
    - Stem-wall
    - Monolithic slab-on-grade
    - Piling/pile caps
    - Footers/grade beams



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### Contractor Responsibility

- Florida Statutes Chapter 489
- Work must comply with applicable codes
  - Willful building code violations
    - Deny
    - Suspend
    - Revoke



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### Common Violations

- Improper footing size
- Lack of soil bearing preparation
- Missing steel reinforcement
- Inadequate moisture protection
- Incorrect slab thickness
- Missing inspections



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