

Wall Construction


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Course Information

Wall Construction

1 Hour General 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 # 0615149
 BCAIB Approval # Reciprocal
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Overview

- Based on Chapter 6, FBC Residential
- Wall system design and compliance
- Framing, bracing, materials, finishes, and resistance requirements



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Eighth Edition Changes

- Snow and seismic references removed
- Adds AAMA 2502 for window and door wind design



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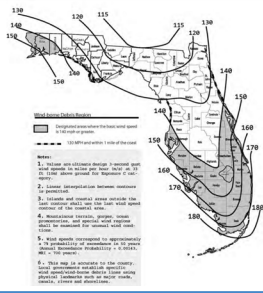
R601 General

- Chapter 6 governs wall construction
- Applies to one- and two-family dwellings & townhouses
- High Velocity Hurricane Zone use Florida Building Code, Building



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Existing Roofing Provisions of Florida Building Code-Residential



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R602 Wood Wall Framing

- Each material meets adopted standards.
- Grade: Studs
 - No. 3 or better for bearing
 - Utility grade for nonbearing construction or not supporting floors.



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R602 Wood Wall Framing

- Design and construction
 - ANSI AWC NDS
 - AWC Wood Frame Construction Manual
 - ASCE Minimum Design Loads for Buildings and Other Structures
 - AISI Standards for Cold-Formed Steel Framing
 - MAF Guide to Concrete Masonry Residential Construction in High Wind Areas



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R606 General Masonry Construction

- Engineered design
- R301.2.1.1
- The Masonry Society (TMS)
 - TMS 402 (Building Code Requirements)
 - TMS 403 (Direct Design Handbook)
 - TMS 404 (Design of Architectural Cast Stone)



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R606.3 Construction Requirements

- Head and bead joints shall be 3/8" thick
 - 1/4" to 3/4" for starting course over foundation.
 - Bed joint tolerance: +1/8"
 - Head and collar joint tolerance: -1/4" to +3/8"
 - Filled solidly not less than the face shell



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R606.3 Construction Requirements

- Reinforcement
 - Embedded in mortar or grout (5/8" coverage)
 - Where exposed to weather or soil, 2" coverage



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R606.3 Construction Requirements

- Grouting
 - Mortar removed if it projects more than 1/2" into the cell
 - Cleanouts required for pour heights greater than 64"
 - Per engineered drawings
 - If it contains reinforcement, it must be filled.



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R606.3 Construction Requirements

- Bonding pattern
 - Running bond head joints shall be offset by at least ¼ unit length.
 - Stack bond requires additional reinforcement.



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R606.3 Construction Requirements

- Support conditions
 - Masonry bearing on support is 2/3 of wall thickness.
 - Beam, girders, or other concentrated loads shall have at least 3" bearing.
 - Joists shall have minimum 1 ½" bearing.



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R606.3 Construction Requirements

- Piers
 - Unsupported height limited to 10 times the least dimension.
 - Filled solid
 - Height of hollow limited to 4 times the least dimension



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R608 Exterior Concrete Walls

- Design and construction
 - Prescriptive provisions of R608
 - Engineered design
 - PCA100 (American Concrete Association)
 - ACI 318 (American Concrete Institute)
 - ACI 332 (American Concrete Institute)



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R608 Exterior Concrete Walls

- Design and construction
 - Prescriptive provisions of R608
 - Engineered design
 - PCA100 (American Concrete Association)
 - ACI 318 (American Concrete Institute)
 - ACI 332 (American Concrete Institute)



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R609 Exterior Windows and Doors

- Installed in accordance with manufacturer instructions
- Flashed as required by R703.4



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R609 Exterior Windows and Doors

- Performance tested
 - AAMA/WDMA/CSA 101/I.S.2/A440
 - ASTM E330
 - TAS 202
 - ANSI/WMA 100
 - Doors with 1:1 overhang may not need water intrusion test.



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R702 Interior Covering

- Interior plaster
- Gypsum board

TABLE R702.3.5
MINIMUM THICKNESS AND APPLICATION OF GYPSUM BOARD AND GYPSUM PANEL PRODUCTS

THICKNESS OF GYPSUM BOARD OR GYPSUM PANEL PRODUCTS (inches)	APPLICATION	ORIENTATION OF GYPSUM BOARD OR GYPSUM PANEL PRODUCTS TO FRAMING	MAXIMUM SPACING OF FASTENERS (inches)		SIZE OF NAILS FOR APPLICATION TO WOOD FRAMING ^a	
			Nails ^b	Screws ^c		
Application without adhesive						
1/8	Ceiling ^d	Perpendicular	16	7	12	13 gage, 1 1/2" long, 1/16" head, 0.098" diameter.
	Wall	Either direction	16	8	16	1 1/2" long, ring shank, or 4d cooler nail, 0.080" diameter, 1 1/2" long, 1/16" head.
1/2	Ceiling ^d	Either direction	16	7	12	13 gage, 1 1/2" long, 1/16" head, 0.098" diameter.
	Wall	Perpendicular	24	7	12	1 1/2" long, ring shank, 5d cooler nail, 0.086" diameter, 1 1/2" long, 1/16" head, or gypsum board nail, 0.086" diameter, 1 1/2" long, 1/16" head, or gypsum board nail, 0.086" diameter, 1 1/2" long, 1/16" head.



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R702 Interior Covering

- Ceramic tile
- Wood veneer paneling (may require backer)
- Hardboard paneling (may require backer)



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R703 Exterior Covering

- Protect from water intrusion with barrier
 - Separate barrier may not be required for concrete or masonry walls if flashed correctly.
 - Separate barrier may not be required if system is tested per ASTM E331 in certain conditions.
 - Wall covering components shall be tested in most cases.



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R703 Exterior Covering

- Protect from water intrusion with barrier
 - Cover all walls and flashed per R703.4
 - Barrier options
 - No. 15 felt
 - ASTM E2568 Type 1 or 2
 - ASTM E331 tested
 - Approved method per manufacturer's instructions



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R703 Exterior Covering

- Protect from water intrusion with barrier
 - Separate barrier may not be required for concrete or masonry walls if flashed correctly.
 - Separate barrier may not be required if system is tested per ASTM E331 in certain conditions.
 - Wall covering components shall be tested in most cases.



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110.3 Required Inspections

- Framing inspection
 - Roof, framing, fireblocking is in place
 - Window/door framing
 - Vertical cells/columns
 - Framing/trusses/bracing/connectors
 - Draftstopping/fireblocking



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110.3 Required Inspections

- Framing inspection
 - Curtain wall framing
 - Energy insulation
 - Wall sheathing inspection including fasteners



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Contractor Responsibility

- Work must comply with applicable codes
- Willful building code violations
 - Deny
 - Suspend
 - Revoke



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Common Violations

- Improper sill plate anchorage
- Inadequate wall bracing
- Incorrect stud spacing or size
- Missing or improper fire blocking
- Improper nailing of sheathing
- Top plate joint issues
- Missing continuous load path
- Door/window opening framing



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