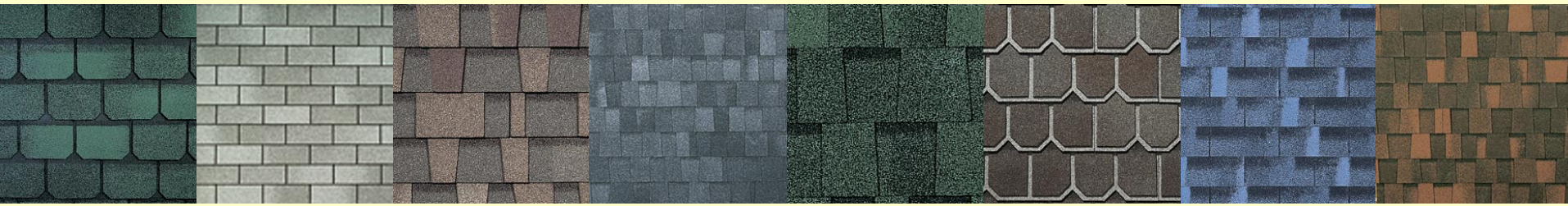
Florida Building Code Update



ARMA

Summer 2005 Committee Meetings

August 22 – 25, 2005

Toronto, Canada

2004 Florida Building Codes

- Effective date: October 1, 2005

- 2004 Florida Building Code
- 2004 Florida Building Code, Residential (New volume)
- 2004 Florida Existing Building Code (New code)

Important Info

- All 2004 Florida Codes are based on the 2003 versions of the corresponding International code.
  - Except: ASCE 7-98 is the reference standard for wind loads
- Many “glitches” have been found to date, especially in the Residential Code
  - Process to correct these is expected to be addressed at this week’s Florida Building Commission meeting

Expedited Amendments

- The Legislature directed the Commission to adopt amendments related to the 2004 hurricane investigations on an expedited basis.

- The Process:
  - Language enacting these amendments will be developed at this week's Commission meeting
  - The amendments will be finalized at the October Commission meeting
  - The amendments will take effect November 1, 2005

Expedited Amendments: Sealed Attics

- Provide an option in the Code for “ventless” attics
  - Language is proposed to be based on the IRC model
  - I intend to add the use of ventilated nail base (polyiso, spacers, OSB or plywood) as an alternate.

Proposed “ventless” attic language

R806.4 Conditioned attic assemblies: Unvented conditioned attic assemblies (spaces between the ceiling joists of the top story and the roof rafters) are permitted under the following conditions:

1. No interior vapor retarders are installed on the ceiling side (attic floor) of the unvented attic assembly.
2. An air-impermeable insulation is applied in direct contact to the underside/interior of the structural roof deck. “Air impermeable” shall be defined by ASTM E 283.
3. Shingles shall be installed as follows:
   a. For asphalt roofing shingles: A 1-perm (57.4 mg/s . m2.Pa) or less vapor retarder (determined using Procedure B of ASTM E 96) is placed to the exterior of the structural roof deck; i.e. just above the roof structural sheathing.
   b. For wood shingles and shakes: a minimum continuous ¼ inch (6 mm) vented air space separates the shingles/shakes and the roofing felt placed over the structural sheathing.

Expedited Amendments: Tile

- Require wood, metal or other structural support “ridge board” for tile attachment methods 1, 2 and 4A.of the FRSA Tile Manual.
- Require FBC approved pre-bagged mortar to attach hip and ridge tiles attachment methods 3 and 4B
- Prohibit component substitution without proper laboratory testing and FBC Product Approval
- Allow hip and ridge attachment systems with demonstrated performance equal or superior to that required by the identified systems.

Expedited Amendments: FEMA

- Require compliance with ANSI/SPRI ES-1 for edge flashings and copings.

- Require compliance with ASTM E-1592 for testing the uplift resistance of metal panel roof systems. (Note: Require ASTM E – 1592 for structural metal panel roof systems and UL 580 for non-structural metal panel roof systems)

Expedited Amendments: FEMA

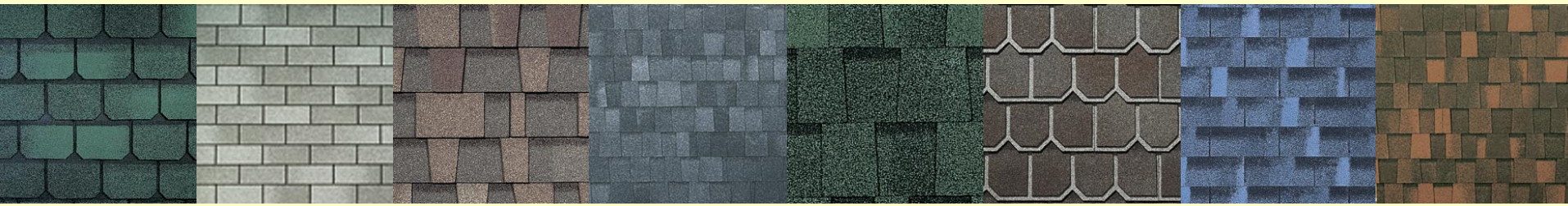
- Require asphalt shingles to comply with UL 2390.

- Require removal of existing roof covering down to the deck and replacement of deteriorated sheathing in areas where basic wind speed is 110mph or greater. If existing sheathing attachment does not comply with loads derived from Chapter 16, require installation of additional fasteners to meet the loads.

Commission Action

- Lorraine Ross will send a report by the end of this week on Commission decisions.
- Phone: 727-510-1941
- Email: intech@tampabay.rr.com

Chapter 15
Roof Assemblies
Rooftop Structures



2004 FBC Chapter 15: Significantly Re-Formatted

- §1501 General Requirements
  - Scope
- §1502 Definitions
- §1503 Weather Protection
- §1504 Performance Requirements
  - Wind resistance
  - Physical Properties – UV
- §1505 Fire Classification
- §1506 Materials
- §1507 Requirements for Roof Coverings
  - This was steep slope requirements in 2001 FBC
- §1508 Roof Insulation
  - This was low slope requirements in 2001 FBC
- §1509 Rooftop Structures
- §1510 Reroofing

1503.2 Flashing

- **1503.2.1 Locations.** Flashing shall be installed at wall and roof intersections, at gutters, wherever there is a change in roof slope or direction, this requirement does not apply to hip and ridge junctions and around roof openings. Where flashing is of metal, the metal shall be corrosion resistant with a thickness not less than provided in Table 1503.2.2.

Section 1503.2.1

§ 1503 Weather Protection: TABLE 1503.2.2 Metal Flashing Material

Material	Min Thickness (inches)	Gage	Weight (lbs per sq. ft.)
Copper			1 (16 oz)
Aluminum	0.024		
Stainless Steel		28	
Galvanized steel	0.0179	26 (zinc coated G90)	
Aluminum Zinc Coated Steel	0.0179	26 (zinc coated G90)	
Zinc Alloy	0.027		
Lead			2.5
Painted Terne	1.25		1.25 (20 oz.)

§ 1503.3 Coping

- **1503.3 Coping.** Parapet walls shall be properly coped or sealed with noncombustible, weatherproof materials of a width no less than the thickness of the parapet wall.

Roof Drainage: Scuppers

- The scupper locations in 2004 FBC have been separated into two sections:
  - Where required for roof drainage, scuppers to be placed in a wall or parapet at the roof surface level
  - Overflow scuppers location

Section 1503.4.2

§1503.4.2 Scupper for Roof Drainage

- **1503.4.2 Scupper.** Where required for roof drainage, a scupper shall be placed level with the roof surface in a wall or parapet. The scupper shall be located as determined by the slope and the contributing area of the roof. The exterior facing or lining of a scupper, if metal, shall be the same as flashing material required by 1503 through 1510 for the particular type of covering specified for the building. For other type materials, follow manufacturer's specifications.

§1503.4.3 Overflow Scuppers

- **1503.4.3** When other means of drainage of overflow water is not provided, overflow scuppers shall be placed in walls or parapets not less than 2 inches (51 mm) nor more than 4 inches (102 mm) above the finished roof covering and shall be located as close as practical to required vertical leaders or downspouts or wall and parapet scuppers. An overflow scupper shall be sized in accordance with the *Florida Building Code, Plumbing*.

§1503.5 Roof Ventilation – New Section

- **1503.5 Roof ventilation.** Intake and exhaust vents shall be provided in accordance with Section 1203.2 and the manufacturer's installation instructions.
- Note: This is not marked as a new section in Chapter 15. SB 442 directs Commission to adopt ***option*** for "ventless" attics by November 1, 2005.

Wind Resistance of Asphalt Shingles

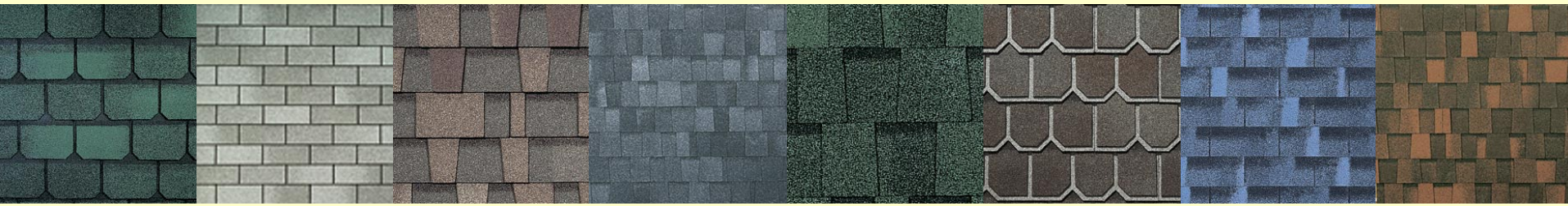
- **1504.1.1 Wind resistance of asphalt shingles.** Asphalt shingles shall be designed for wind speeds in accordance with Section 1507.2.7.
  - this is the attachment section that refers to number of nails per each shingle

Section 1504.1.1

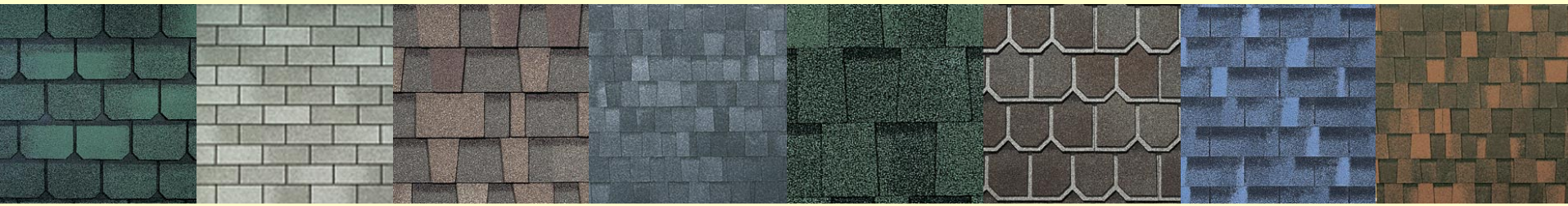
Fasteners – This section was deleted in the 2004 FBC – folded into specific roof covering section

- Provides uniform requirements for corrosion resistance of roofing fasteners
  - Nails (s.1506.5.1)
  - Wood screws (s.1506.5.2)
  - Clips (s.1506.5.3)

Section 1507
Requirements for Roof Coverings



Florida Building Code
§1507.2 Asphalt Shingles



Section 1507.2

Note: Table 1507.2

- This table attempts to summarize asphalt shingle requirements. There are some conflicts with the text – notably in attachment portion of the table.

- *Rely on text*

Table 1507.2

Asphalt Shingles: Underlayments

- 1507.2.3 Underlayment
  - #15 (ASTM D 226 Type I **or Type II**)
  - #15 (Organic Felt ASTM D 4869 **Type I or Type II**)
- 1507.2.4 Self-adhering polymer modified bitumen sheet – ASTM D 1970

Section 1507.2.3 & 1507.2.4

Asphalt Shingles: Fasteners

- Fasteners
  - ASTM F 1667 (corrosion resistance)
  - Galvanized, stainless steel, **aluminum** or copper roofing nails
  - Minimum 12 gauge (.015 inch) shank, minimum 3/8” diameter head
  - Penetration: ¾” into roof sheathing; if sheathing is less than ¾”, nails shall penetrate through the sheathing

Section 1507.2.6

§1507.2 Asphalt Shingles - Fasteners

- **New section addressing plastic cap nails:**

- **1507.2.6.1 The nail component of plastic cap nails shall meet the corrosion resistance requirements of 1507.2.6.**

§1507.2.8 Underlayment Application

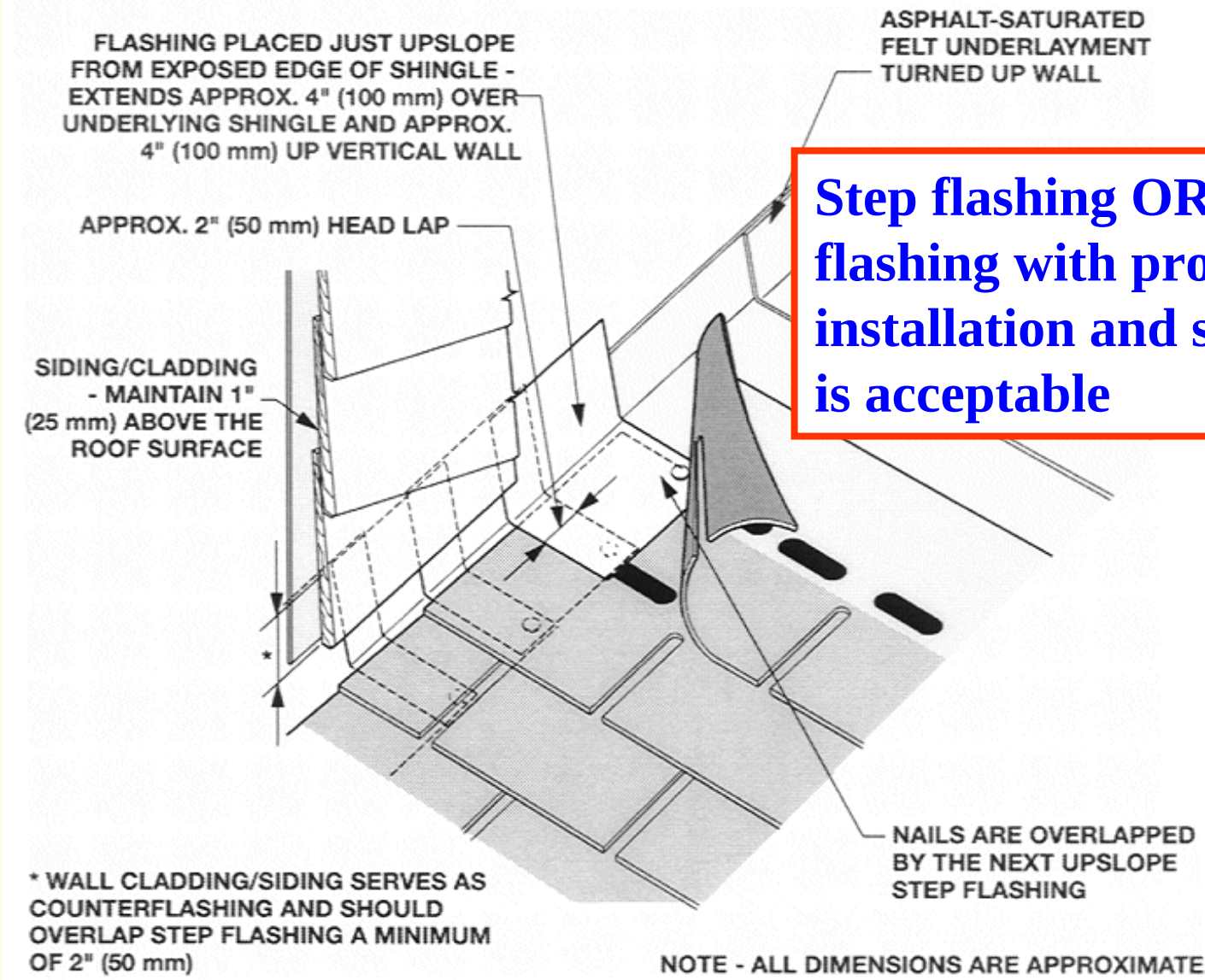
- Number of layers depends on roof slope
- Fastened sufficiently to remain in place

- Note new section –not marked as such: §1507.2.8.1 High wind attachment
  - 110 mph or greater (most of FL)
    - Corrosion resistant fasteners
    - At overlap: maximum spacing of 36” o.c.

Asphalt Shingles – Flashing

- **1507.2.9.1 Base and counter flashing.** Base and counter flashing shall be installed as follows:
- 1. In accordance with manufacturer's installation instructions, or
- 2. A continuous metal "L" flashing shall be set in approved flashing cement and set flush to base of wall and over the underlayment. Both horizontal and vertical metal flanges shall be fastened 6 inches on center with approved fasteners. All laps shall be a minimum of 4 inches fully sealed in approved flashing cement. Flashing shall start at the lower portion of roof to insure water-shedding capabilities of all metal laps. The entire edge of the horizontal flange shall be sealed covering all nail penetrations with approved flashing cement and membrane. Shingles will overlap the horizontal flange and shall be set in approved flashing cement.

Metal Flashing



Step flashing OR "L" flashing with proper installation and sealing is acceptable

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§1507.2.9 Asphalt Shingles – Flashing (cont.)

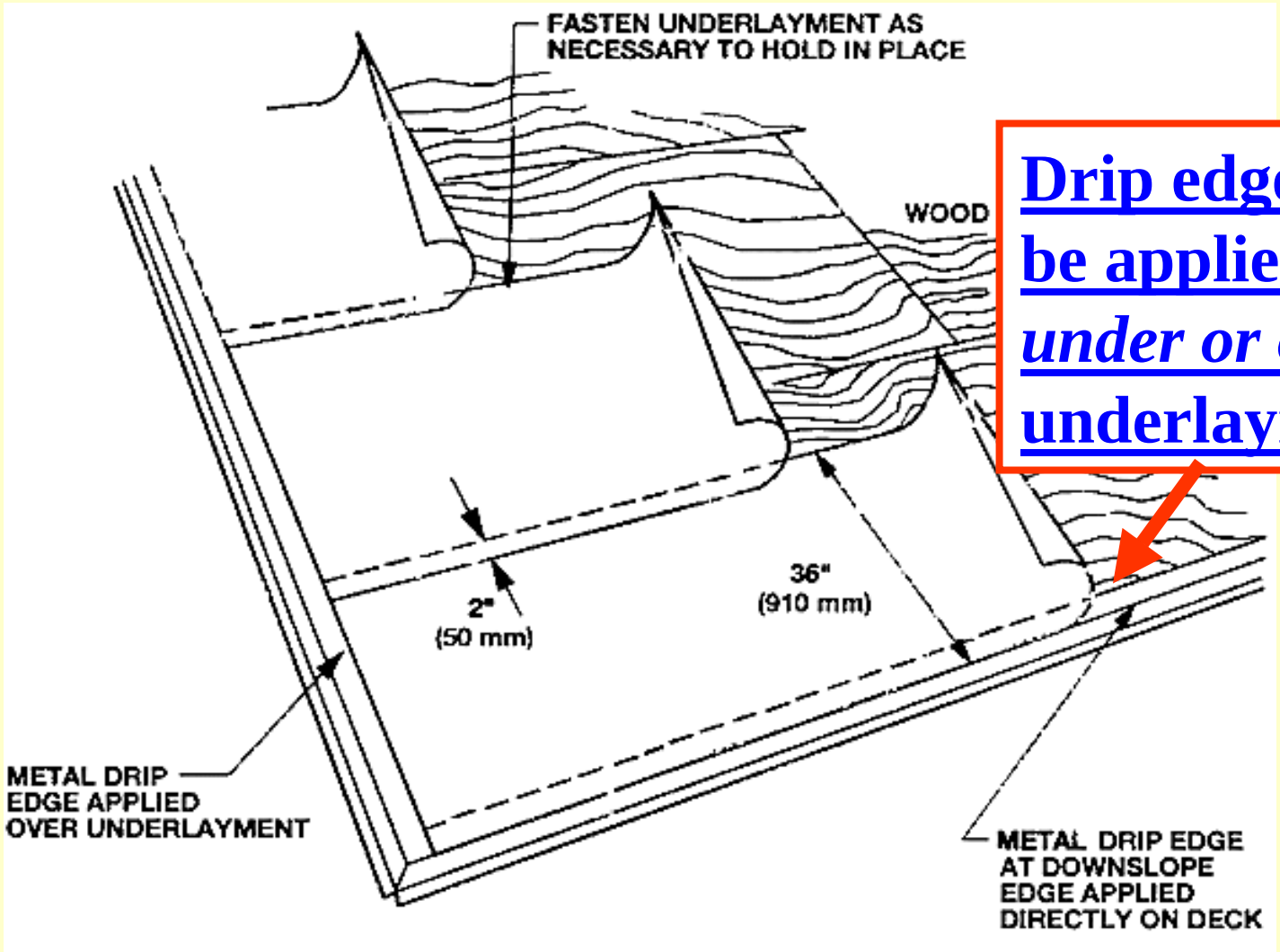
- **1507.2.9.1 Base and counter flashing.** Base and counter flashing shall be installed as follows:

- Base flashing shall be of either corrosion resistant metal with a minimum thickness provided in section 1503.2.2 or mineral surface roll roofing weighing a minimum of 77 lb per 100 sq ft (3.76 kg/m2). Counter flashing shall be corrosion resistant metal with a minimum thickness provided in Table 1503.2.2.

§1507 Asphalt Shingles – Drip Edge

- **1507.2.9.3 Drip edge.** Provide drip edge at eaves and gables of shingle roofs. Overlap to be a minimum of 2 inches (51 mm). Eave drip edges shall extend 0.25 inch (6.4 mm) below sheathing and extend back on the roof a minimum of 2 inches (51 mm). Drip edge shall be mechanically fastened a maximum of 12 inches (305 mm) o.c. Drip edge at eaves shall be permitted to be installed either over or under the underlayment. If installed over the underlayment, there shall be a minimum 2 inch width of roof cement installed over the drip edge flange.

Underlayment – Single Layer
(Slopes 4:12 and greater)



Drip edge can be applied *under or over* underlayment

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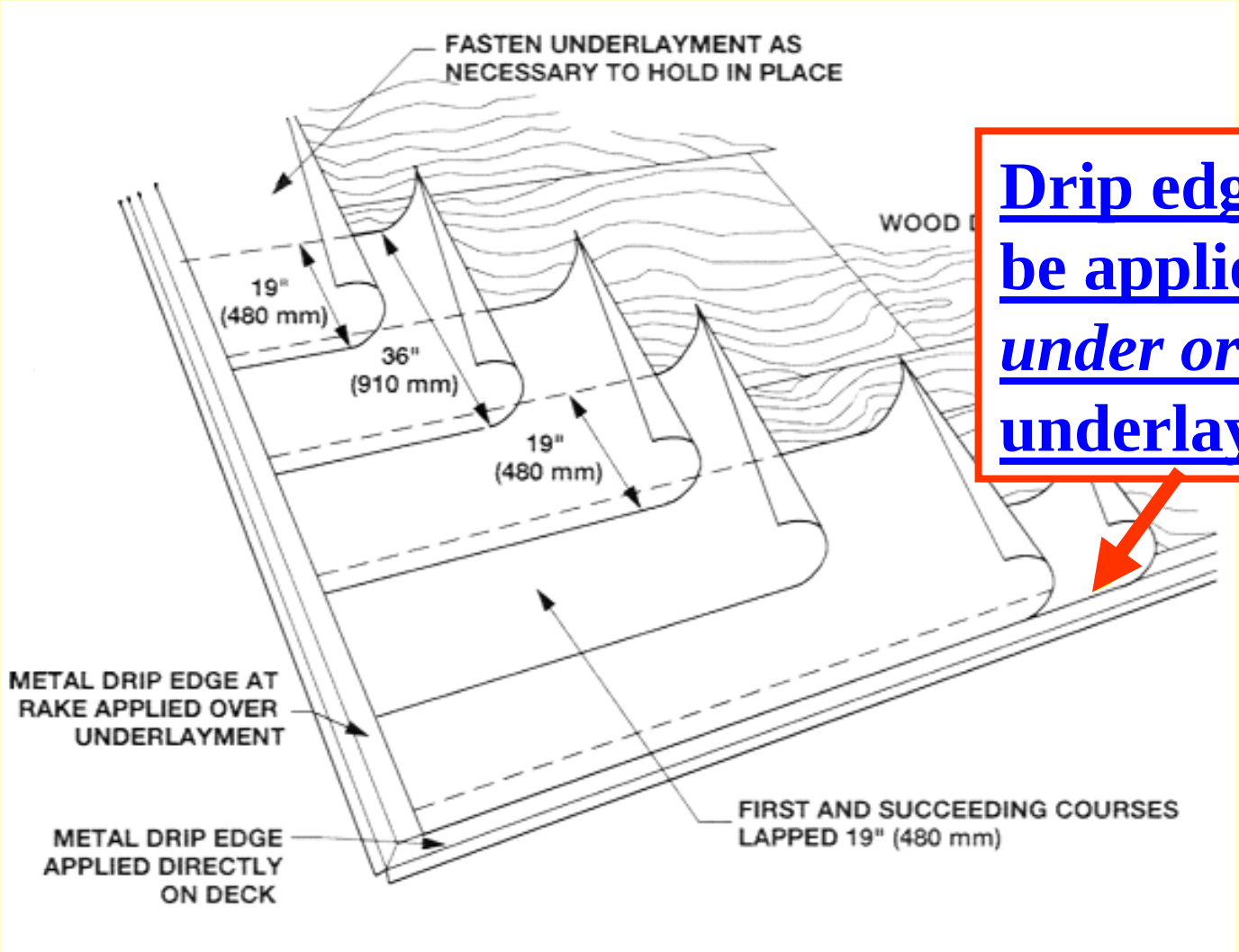
Underlayment – Double Layer

(slope 2:12 up to 4:12)



Drip edge can be applied *under or over* underlayment

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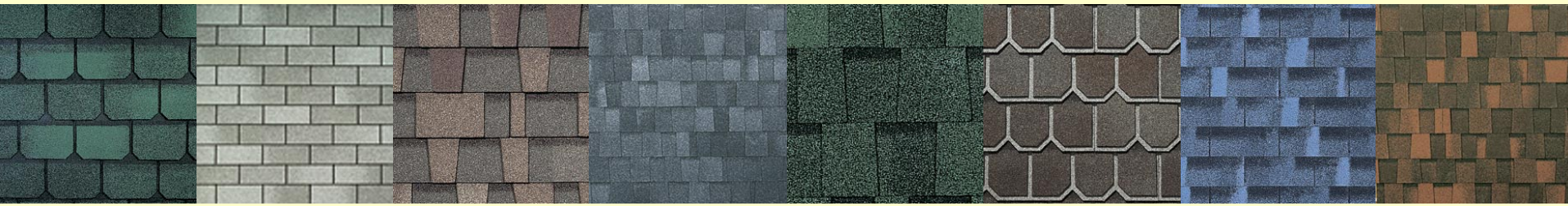
§1507 Asphalt Shingles – Crickets or Saddles – this is marked new but it isn't

- **1507.2.9.10 Crickets or Saddles.** Crickets or saddles shall be installed on the ridge side of any chimney greater than 30 inches (762 mm) wide. Cricket or saddle coverings shall be sheet metal or of the same material as the roof covering.

§1510 Reroofing



Reroofing: Recovering vs Replacement

- **1510.3 Recovering versus replacement.** New roof coverings shall not be installed without first removing all existing roof coverings where any of the following conditions occur:
  - Water soaked or deteriorated surface
  - Wood shake, slate, clay, cement or asbestos cement tile
  - Two or more applications of any type of roof materials
  - When blisters exist in any roofing, unless blisters are cut or scraped open and remaining materials secured down before applying additional roofing.
- **Exceptions on next page**

Reroofing: Recovering vs Replacement

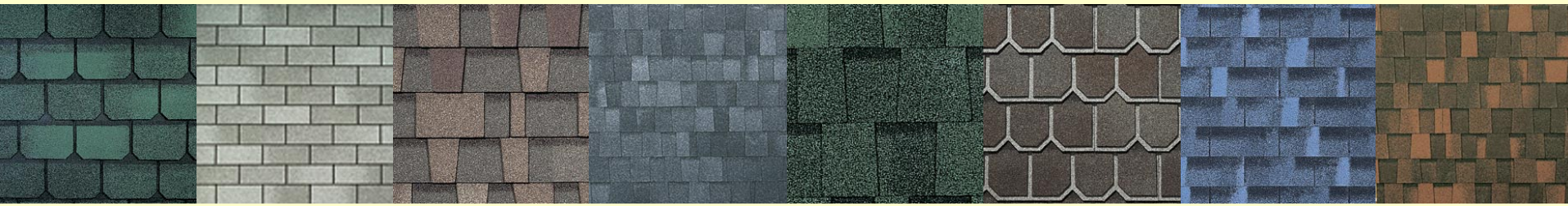
- **1510.3 Recovering versus replacement.** New roof coverings shall not be installed without first removing all existing roof coverings where any of the following conditions occur:

Exceptions

1. Complete and separate roofing systems, such as standing-seam metal roof systems, that are designed to transmit the roof loads directly to the building's structural system and that do not rely on existing roofs and roof coverings for support, shall not require the removal of existing roof coverings.

2. Metal panel, metal shingle, and concrete and clay tile roof coverings shall be permitted to be installed over existing wood shake roofs when applied in accordance with Section 1510.4.

2004 Florida Building Code, Residential



Chapter 9 in Residential Code mirrors Florida Building Code Chapter 15 -

§ 101.2 Scope

- **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 multiple single-family dwellings (townhouses) not more than three stories in height with a separate means of egress and their accessory structures.*
  - **Exception:** Existing buildings undergoing repair, alteration or additions, and change of occupancy shall be permitted to comply with the *Florida Existing Building Code.*

- **R101.2.1** "The provisions of Chapter 1, Florida Building Code, Building shall govern the administration and enforcement of the Florida Residential Code for One-and Two-Family Dwellings".