

# ROOFING DETAIL

## CONSTRUCTION

*This section does **NOT** contain all roofing regulations. See '21 IRC Chapter 9 for details. Manufacturer's installation instructions must be followed.*

### Wood Sheathing / Decking

- Roof covers shall **ONLY** be fastened to **solidly sheathed decks**.
- **EXISTING WOOD SHEATHING** may remain after tear off only if: not deteriorated, not warped, not cracked and not delaminated. Otherwise it is deemed “non-nailable”.
- Wood sheathing thickness of 3/8” inch is **ONLY** permitted if:
  - **RATED FOR THE SPAN** (24/0 minimum for 24” inch truss/joist centers)
  - Each panel spans **AT LEAST THREE (3)** supports (trusses or roof joists) and
  - Edges are blocked or edge support is provided (aka “H”-clips, tongue & groove, etc.).
- The maximum number of layers of wood sheathing is one (1) unless an engineering report for the load is approved.
- Sheathing nailing pattern is every 6” (See Fastening below)

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The sheathing stamp must be legible. Example:

[APA Plywood Trademark Explained \(link\)](#)

### Asphalt Shingles

- Matching is required of all roof coverings according to **City Code Section 500.330 (18)**. Matches must be approved by the Building Commissioner by submitting samples of existing and new materials for examination.
- Asphalt shingles may only be used on roof slopes of two units vertical in 12 units horizontal (2:12) or greater. Consult code section for lower slopes.
- **RECOVERING** without tear off is only allowed if sheathing and covering is still an adequate base for additional roofing (see IRC section R908), one (1) layer only. Wood shakes, slate, clay, cement or asbestos-cement coverings must be removed before recovering.

### Mineral-Surfaced Roll Roofing

- Not allowed on slopes under 1:12 (8% slope).
- Requires underlayment and ice barrier.
- Installed according to manufacturer instructions.

## Valleys

- Open Valleys Lined with Metal: 24" inches wide, only metals listed in IRC Table R905.2.8.2.
- Open valleys lined with 2 plies of mineral surfaced roll roofing: bottom layer 18" inches minimum and top layer 36" inches wide minimum.
- Closed valleys covered with shingles: one ply of smooth roll roofing 36" inches wide or valley lining above.

## Underlayment

- **Ice barrier** is required from the lower roof edge (the eave) to a point measured 24" inches inside the exterior wall line. Slopes 8:12 or greater also require ice barrier 36" inches measured along the roof slope from the eave edge of the building.
- For roof slopes of 4 units vertical to 12 units horizontal (4:12) or greater, underlayment shall be a minimum of one layer of #15 lb. applied parallel to and starting at the eave lapping 2 inches at the horizontal seams and 4 inches at the vertical seams.
- For roof slopes 2 units vertical in 12 units horizontal (2:12) up to 4 units vertical in 12 units horizontal (4:12), two (2) layers cemented together or self-adhering polymer-modified bitumen required. (Follow the manufacturer's installation guidelines.)

## Flashing / Drip Edge / Chimneys

- Flashing is required at any intersection of roof and vertical plane surface.
- A cricket is required at a wall or chimney greater than 30 inches wide. The dimensions of the cricket are based on the slope of the roof.
- Sidewall flashing (aka "kickout flashing") required, 4" inches high, 4" inches wide
- Spark arrestors required on chimneys.
- Metal drip edge is required at the eaves and rake edges of shingle roofs. Ends of the drip edge shall be lapped 2" inches minimum. The vertical leg of drip edges shall be a minimum of 1 ½ inches in width and shall extend a minimum of ¼ inch below the sheathing. The drip edge shall extend back on the roof a minimum of 2 inches. Drip edge shall be mechanically fastened not more than every 12" inches.

## Ventilation / Insulation

- Proper ventilation is required and calculated at a rate of 1 square foot of net free ventilation vent area for every 150 square feet of the vented space. There must be 2 cross ventilating gable vents or a soffit and ridge vent combination.
- A minimum 1" inch air gap is required between insulation and wood sheathing/ roof decking.
- Exhaust vents through the attic must terminate to the exterior (clothes dryers exhaust vents, bathroom exhaust vents, kitchen exhaust vents, etc.).

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- Replacement insulation must comply with '21 IRC Chapter 11, R-60 in attic spaces or R-30 if no attic space but must be full depth over the top plate of the exterior wall.

## Fastening

- Materials: galvanized steel, stainless steel, aluminum or copper.
- Fastening Shingles: 12-gage nail,  $\frac{3}{8}$ " inch diameter head.
- Length: Must penetrate through sheathing.
- Number: Asphalt shingles require 4 fasteners per strip or 2 per individual shingle tab.
- (Nails) Sheathing to Truss/Rafter: 8d common nail, 2  $\frac{1}{2}$ " inches long, spaced 6" inches on all support members.

## Helpful Information

### Online Links

- A permit application can be obtained at Florissant City Hall, Public Works Department or downloaded [HERE](#).
- [Matching Materials Letter 2021 \(PDF\)](#)
- [2021 International Residential Code, Chapter 9 - Roof Assemblies](#) (website free view)
- [2021 International Residential Code, Chapter 9 - Roof Assemblies \(PDF\)](#)
- [2021 IRC Section R602.3 Fastening Schedule](#) (website free view)
- [2021 IRC Section R602.3 Fastening Schedule \(PDF\)](#)
- [2021 IRC Section R503.2.1\(1\) Sheathing Table](#) (website free view)
- [2021 IRC Section R503.2.1\(1\) Sheathing Table \(PDF\)](#)
- [2021 IRC Section R806 – Roof Ventilation](#) (website free view)
- [2021 IRC Section R806 – Roof Ventilation \(PDF\)](#)
- [WWW.ECODE.COM/FL3301](http://WWW.ECODE.COM/FL3301)
- Requirement for Permit: City Code **Section 500.050, 500.070**
- City Code **Section 500.330 (18)** - Matching Materials Required
- [WWW.FLORISSANTMO.COM](http://WWW.FLORISSANTMO.COM)
- Send application and required documents to: [publicworks@florissantmo.com](mailto:publicworks@florissantmo.com)