

## *The most often heard contractor phrase:*

*No one else makes me do that, so why do I have to ...*

*... follow the wrapper installation instructions for nail pattern when laying roof shingles?*

Violation : Asphalt composition shingles not being nailed/attached per manufacturer's instructions  
 Code Section : 2010 FBC-R R905.1 and 2010 FBC-B 1507.1 – not per manufacturer's installation instructions  
 Comments : Contractor shall attach the roof shingles in accordance with the installation instructions.

It seems that roofing contractors do not read the manufacturer's installation instructions – which are printed on the wrapper of each bundle of shingles – and which shows the required nail pattern for those shingles.

Asphalt composition shingles are tested and approved assemblies which must be attached in accordance with their manufacturer's installation instructions, and the following code requirements, for proper wind and water resistance:

- Florida Building Code – Residential, *Chapter 9 Assemblies (Roof Assemblies)* – underlining is mine for highlighting
  - *SECTION R901 GENERAL*
    - *R901.1 Scope.*
      - ◆ *The provisions of this chapter shall govern the design, materials, construction and quality of roof assemblies.*
        - Exception: Buildings and structures located within the High-Velocity Hurricane Zone shall comply with the provisions of Chapter 44.
  - *Section R905 Requirements For Roof Coverings.*
    - *R905.1 Roof covering application.*
      - ◆ *Roof coverings shall be applied in accordance with the applicable provisions of this section and the manufacturer's installation instructions. Unless otherwise specified in this section, roof coverings shall be installed to resist the component and cladding loads specified in Table R301.2(2), adjusted for height and exposure in accordance with Table R301.2(3).*
- Florida Building Code – Building, *Chapter 15 – Roof Assemblies and Rooftop Structures* – underlining is mine for highlighting
  - *SECTION 1501 GENERAL.*
    - *1501.1 Scope.*
      - ◆ *The provisions of this chapter shall govern the design, materials, construction and quality of roof assemblies, and rooftop structures.*
        - Exception: Buildings and structures located within the high-velocity hurricane zone shall comply with the provisions of Section 1503.6 and Sections 1512 through 1525.
  - *SECTION 1507 REQUIREMENTS FOR ROOF COVERINGS*
    - *1507.1 Scope.*
      - ◆ *Roof coverings shall be applied in accordance with the applicable provisions of this section and the manufacturer's installation instructions.*

Most asphalt shingles, whether 3-tab or architectural style, use the same nail pattern; that nail pattern is the same as the 3-tab shingle nail pattern.

The typical nail pattern for six nails per shingle and which meets the nail pattern approved for the most shingles:

- 3-tab shingles:
  - one nail 1" in from each end, then two nails approximately 2" apart at the slot between the tabs,
- most architectural shingles:
  - one nail 1" in from each end and two nails approximately 2" apart approximately 12" to 13" in from each end

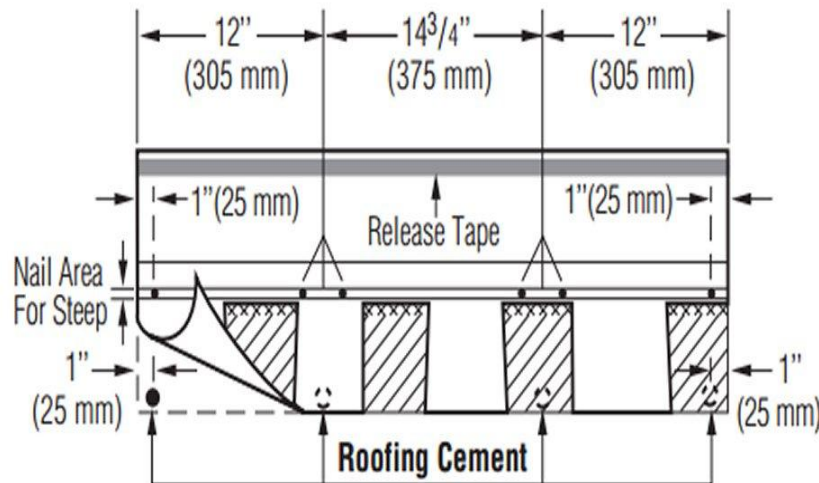
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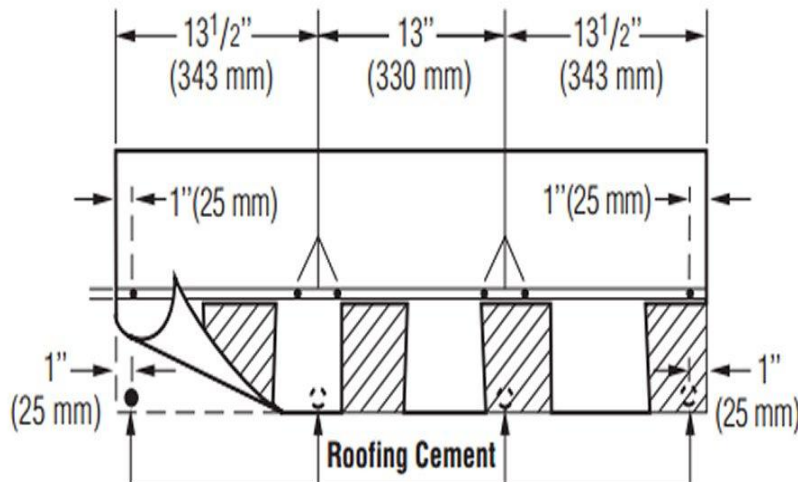
*... follow the wrapper installation instructions for nail pattern when laying roof shingles?*

Below is one example of the 3-tab six nail pattern for architectural shingles: [Certainteed Landmark installation instructions](#) (see nail patterns on 2<sup>nd</sup> page of linked document, six nail pattern is also shown below).

**LANDMARK**



**LANDMARK TL**



*Figure 12-5: Use six nails and four spots of asphalt roofing cement on steep slopes.*

**CAUTION:** Excessive use of roofing cement can cause shingles to blister.

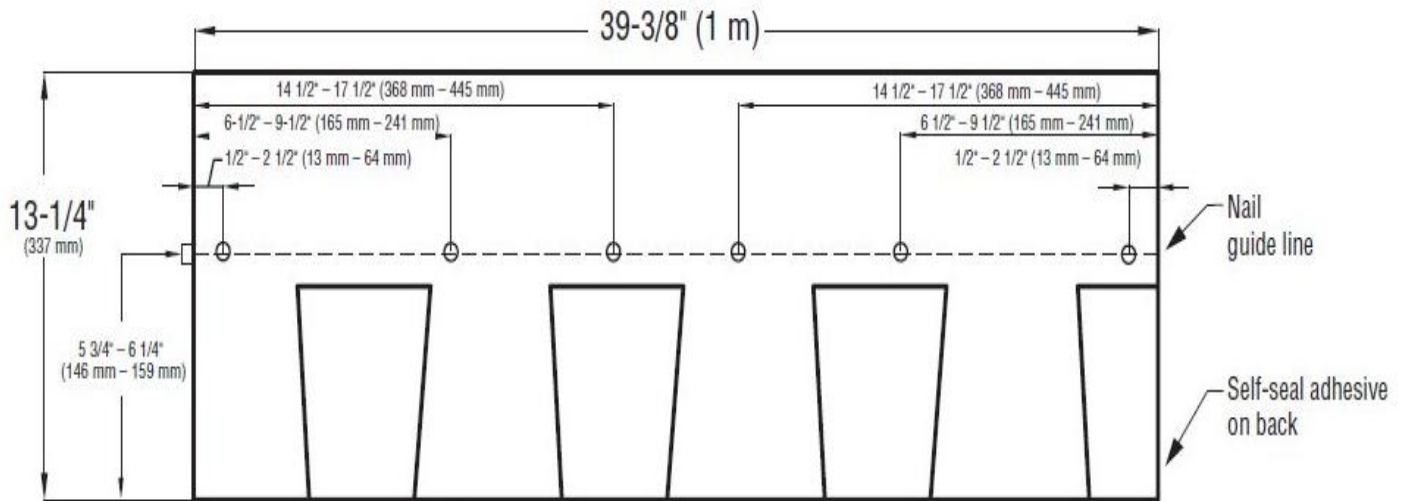
Note: There is one brand which specifies a different nail pattern for their architectural shingles.

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GAF Timberline specifies a different nail pattern for their architectural shingles, still the six nails, and still one nail approximately 1" in from each end, however, the other four nails are approximately evenly spaced across the length shingle: [GAF Timberline installation instructions](#) (see nail patterns on page 2 of linked document, six nail pattern is shown below).



### ENHANCED NAILING PATTERN - six nails per shingle\*

\* required by some local codes and required for enhanced wind coverage on certain products.

See limited warranty for details.

However, whether the nail pattern specified is the 3-tab pattern of one nail near each end and two nails about a foot in from each end, or one nail near each end with the other four nails approximately equally spaced across the length of the shingle ... roofing contractors do not follow either nail pattern.

The reason roofing contractors give for not nailing in accordance with the manufacturers' nail pattern, especially the 3-tab six nail pattern, is that nailing in those patterns cause leaks. If those nail patterns caused leak, the manufacturers would not have passed the testing and the nail pattern would be different.

According to the roofing contractors, the joint where two shingles meet will land at or close to the second nail in from the end of the shingle below.

The problem with that thinking is:

- for the Landmark 3-tab six nail pattern above:
  - With the shingles overlapped the specified 6", the closest nails will be 5" from the joint (one nail 1" in from the end and another nail 12"-13" in from the end)
- for the Timberline six nail pattern above:
  - With the shingles overlapped the specified 6", the closest nail will be 1/2" from the joint (based on the manufacturer's specified shingle lap and nail location), and if that 1/2" passed the testing by the manufacturer, then that nail location should be a warranty item for the manufacturer if that location did actually cause a leak (one nail 1/2" to 2-1/2" from the end and another nail 6-1/2" to 9-1/2" from the end)

If the manufacturer's nail pattern will cause leaks, the roofers need to take that up with the manufacturers and have the nail pattern revised and the shingles retested, the roofers would then need to follow the revised nail pattern.



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The best way to explain the nail pattern that roofers typically use is to show an example of it:



Approximately half of the shingle has one nail in it while the other half of the shingle has the other five nails in it.



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While the first nail is approximately 1" from the end, the second nail is 19" from the first nail. This is typical of nail patterns for architectural shingles, 16" to 20" seems to be about the space roofers leave between the first two nails.



Of course, if one notices, most of the nails are way overdriven ... picky, picky, picky ...

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The intent of this newsletter is to help level the playing field between inspectors/plan reviewers and contractors, possibly even tilting the playing field in favor of the inspectors/plan reviewers by keeping inspectors/plan reviewers abreast of what other inspectors/plan reviewers encounter.

Many contractors say "No one else makes me do that ... " as though that is reason enough not to have to meet code.

The reality is that many inspectors/plan reviewers are making contractors "do that" ... you are not alone on your inspections/plan reviews as other inspectors/plan reviewers are making those same calls.

**Please, if you have any items, issues or tips you would like to share** with other inspectors/plan reviewers, send them to the following email address for inclusion in future newsletters: [jerry@jerrypeck.com](mailto:jerry@jerrypeck.com) Editor/Publisher, *Inspectors' Field Comments Newsletter*©.

All contributors will be acknowledged and given credit for their contributions ... please help others by sharing items/issues you have found in the field or during plan reviews.

I look forward to all contributions.

Respectfully submitted,



Jerry Peck  
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