



White Paper:
**Roof Sheathing Nailing Schedules
vs. Minimum Code Requirements**

Prepared by:

Bracken Engineering, Inc.
2701 W. Busch Blvd, Ste 200
Tampa, Florida 33618

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When using the RMS 11.0 modeling tool to estimate the cost of replacing an existing roof in Florida, the user has one of 4 options. These options include; 6d nails – Any Nail Schedule, 8d Nails – Minimum Nail Schedule, 8d Nails – High Wind Nail Schedule, and 10d Nails – High Wind Nail Schedule. Specifically, it is our understanding that these options represent the roof sheathing nailing schedules and uplift options that one can select from.

Therefore, in an effort to map or correlate these options with historical standards and/or building codes, we have reviewed Florida specific provisions going back to the 1994 *SBCCI* and offer the following. It should be noted however that there is not an exact (1 to 1) correlation between the RMS text and the text found within the historical standards and/or building codes. While the RMS text reflects that information found within the tables of the respective codes, variation resulted from footnotes and subsequent passages that served to further qualify or restrict the fastening patterns. When a correlation could not be established we worked to estimate an equivalency standard based on net uplift pressure / capacity requirements.

6d nails – Any Nail Schedule

RMS 11.0 Text: *Use this option for plywood/oriented strand board (OSB) roof sheathing attached to the roof truss/rafter (spaced a maximum of 24" o.c.) by staples or 6d nails spaced at 6" along the edge and 12" in the field or any system of screws, nails, adhesives, other deck fastening system or truss/rafter spacing that has an equivalent mean uplift resistance of 55 psf, (Uniform Mitigation Verification Inspection Form, OIR-B1-1802).*

Building Code Text: This text matches the requirement that was in effect in the **1994 Standard Building Code** (Table 2306.1 - Fastening Schedule) for roof sheathing ½" or less in thickness. However, 8d nails had to be used for panels 19/32" or greater in thickness.

NOTE: It should be noted that at this point in time staples were still allowed. For panels 5/16" – ½" thick spacing was 4" o.c. and 8" o.c. respectively. For panels 19/32" – ¾" thick the spacing was 2" o.c. and 5" o.c. edge and field respectively.

8d Nails – Minimum Nail Schedule

RMS 11.0 Text: *This option applies to plywood/OSB roof sheathing with a minimum thickness of 7/16" attached to the roof truss/rafter (spaced a maximum of 24" o.c.) by 8d common nails spaced 6" along the edge and 12" in the field or any system of screws, nails, adhesives, other deck fastening system or truss/rafter spacing that has an equivalent mean uplift resistance of 103 psf, (Uniform Mitigation Verification Inspection Form, OIR-B1-1802).*

Building Code Text: This text matches the requirement that was in effect in the **2001 Florida Building Code** (*Table 2306.1 – Fastening Schedule*).

NOTE: It should be noted that the use of 8d common nails became the minimum for roof sheathing in the 1999 Standard Building Code (*Table 2306.1 Fastening Schedule*). The spacing was the same as 1994 and staples could still be used but the staple length requirements were increased. However, Florida never adopted the 1999 Standard Building Code and instead incorporated these requirements into the minimum requirements of the 2001 Florida Building Code Table 2306.1.

8d Nails – High Wind Nail Schedule

RMS 11.0 Text: *Plywood/OSB roof sheathing with a minimum thickness of 7/16” attached to the roof truss/rafter (spaced a maximum of 24” o.c.) by 8d common nails spaced 6” along the edge and 6” in the field or any system of screws, nails, adhesives, other deck fastening system or truss/rafter spacing that has an equivalent mean uplift resistance of 182 psf, (Uniform Mitigation Verification Inspection Form, OIR-B1-1802).*

Building Code Text (Building Code): This text matches the requirement that was in effect in the **2004 Florida Building Code – Building** (*Table 2304.9.1 Fastening Schedule*). The **2007 Florida Building Code – Building** (*Table 2304.9.1 Fastening Schedule*) is similar to the 2004 with some added description based on panel thickness. The **2010 Florida Building Code – Building** (*Table 2304.9.1 Fastening Schedule*) maintains the same specifications as the 2007 Table. The foot notes indicate that 8d nails are the

minimum for any wood panel and that specific dimension nails require specific spacing of 6" o.c. edge and 6" o.c. intermediate field.

Building Code Text (Residential Code): This text also matches the requirement that was in effect in the **2004 Florida Building Code – Residential** (*Table R602.3(1) - Fastener Schedule for Structural Members*). The **2007 Florida Building Code – Residential** (*Table R602.2(1) Fastener Schedule for Structural Members*) is similar to the 2004 but reduces the spacing down to 6" on the intermediate field supports by footnote g based on windspeed being over or under 100 mph and within 48 inches from ridges, eaves and gable end walls. The **2010 Florida Building Code – Residential** moves these specifications into a new section, *Section R803 Roof Sheathing*. In *R803.2.3.1 Sheathing fastenings*, 8d ring shank nails are called to be spaced 6" o.c. on the edge and 6" o.c. intermediate is identified.

10d Nails – High Wind Nail Schedule

RMS 11.0 Text: *The roof sheathing is fastened to the roof framing elements with 10d nails (3" length, 0.148" diameter) or screws with at least a minimum nailing schedule.*

Building Code Text: This is not a requirement when using structural panels (**plywood or OSB**). 10d nails have only been called for as a minimum requirement when the roof sheathing thickness is 1 1/8" – 1 1/4" thick.