

# TEXAS DEPARTMENT OF INSURANCE

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## PRODUCT EVALUATION RC-127

Effective July 1, 2005

*The following product has been evaluated for compliance with the wind loads specified in the **International Residential Code (IRC)** and the **International Building Code (IBC)**. This product shall be subject to reevaluation 3 years after the effective date.*

*This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.*

*This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads shall not exceed the allowable wind loads shown in this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code and the Texas Engineering Practice Act.*

### Concrete Roofing Tiles manufactured by

**Hanson Roof Tile**  
**1340 S.W. 34<sup>th</sup> Avenue**  
**Deerfield Beach, Florida 33442**  
**Telephone: (954) 421-6000**

will be accepted for use in designated catastrophe areas along the Texas Gulf Coast when installed in accordance with this product evaluation report, the building specifications adopted by the Texas Department of Insurance, and the manufacturer's installation instructions as referenced in the document entitled "Concrete and Clay Roof Tile Design Criteria Installation Manual for Moderate Climate Regions," September, 2002, except for the attachment methods, which are specified in Tables 3 through 13 of this evaluation report.

## PRODUCT DESCRIPTION

Hanson concrete roofing tiles are interlocking tiles that are manufactured from Portland cement. The tiles are available in a variety of colors.

**Mechanical Attachment Only:** The Hanson roofing tiles specified in this report are to be installed mechanically with fasteners. The roofing tiles may be secured either directly to the roof deck or over battens. Holes are provided at the top of each roofing tile for fastening as specified in this report.

**Roofing Tile Profile Classifications:** Roofing tile profiles shall be classified as one of the following:

**Flat/Low profile:** Flat/Low profile tiles are defined as tiles having a rise equal to or less than  $\frac{1}{2}$  inch.

**Medium profile:** Medium profile tiles are defined as tiles having a rise greater than  $\frac{1}{2}$  inch and a rise to width ratio of less than or equal to 1.5.

**High/Barrel profile:** High profile tiles are defined as those tiles having a rise to width ratio greater than 1.5.

**Roofing Tile Designations, Profile Classifications, and Dimensions:** The roofing tile designations, profile classifications, and dimensions for the Hanson roofing tiles that apply to this product evaluation report are specified in Table 1.

**Table 1**  
**Roofing Tile Designations, Profile Classifications, and Dimensions**

| Tile Designation   | Profile Classification | Tile Length (in.) | Tile Width (in.) |
|--------------------|------------------------|-------------------|------------------|
| Rustic Shake/Slate | Flat/Low               | 15-16             | 9 ½              |
| Nordic             | Flat/Low               | 16 ½              | 13               |
| Shake/Slate        | Flat/Low               | 17 ¼              | 13               |
| Traditional Flat   | Flat/Low               | 16                | 10               |
| Hacienda           | Medium                 | 17 ¼              | 13               |
| Palema             | Medium                 | 16 ½              | 13               |
| Spanish "S"        | High/Barrel            | 18                | 10               |
| Regal              | High/Barrel            | 17 ¼              | 13 ¼             |

**INSTALLATION INSTRUCTIONS and LIMITATIONS**

**Roof Framing and Roof Deck:** Roof framing members shall be in accordance with either the International Residential Code or the International Building Code. The roof framing members shall not be spaced greater than 24 inches on center. The roof deck shall be solidly sheathed with minimum  $\frac{15}{32}$ " plywood. Refer to Tables 3 through 13 for the required minimum thickness of the plywood deck. The roof deck shall be fastened to the roof framing members in accordance with either the International Residential Code or the International Building Code.

If the existing roof deck is a spaced board roof deck, then the spaced boards shall either be removed or covered with the minimum thickness of plywood deck specified in Tables 3 through 13. The plywood sheathing shall be installed over the spaced boards in accordance with either the International Residential Code or the International Building Code.

**Metal drip edge:** A metal drip edge shall be installed as specified in the manufacturer's installation instructions as referenced in the document entitled "Concrete and Clay Roof Tile Design Criteria Installation Manual for Moderate Climate Regions," September, 2002.

**Roof underlayment:**

**3:12 roof slope to under 4:12 roof slope:** Two layers of underlayment complying with ASTM D 226, Type II (No. 30 asphalt felt) or equivalent. The underlayment shall be installed as specified in either the International Residential Code or the International Building Code and in the manufacturer's installation instructions as referenced in the document entitled "Concrete and Clay Roof Tile Design Criteria Installation Manual for Moderate Climate Regions," September, 2002.

**4:12 roof slope and greater:** One layer of underlayment complying with ASTM D 226, Type II (No. 30 asphalt felt) or equivalent. The underlayment shall be lapped a minimum of 2" at the head laps and a minimum of 6" at the side laps. The underlayment shall be installed as specified in either the International Residential Code or the International Building Code and in the manufacturer's installation instructions as referenced in the document entitled "Concrete and Clay Roof Tile Design Criteria Installation Manual for Moderate Climate Regions," September, 2002.

**Battens:** The roofing tiles may be installed over battens. For roof slopes greater than 7:12, battens are required. The roof deck shall be solidly sheathed with minimum  $\frac{15}{32}$ " plywood when battens are used. As a minimum, the battens shall be nominal 1x2 wood members. The battens shall be spaced to allow for a minimum 3" headlap. The battens shall be fastened to the roof deck with minimum 8d common wire or box nails or equivalent size nail. The nails shall be spaced a maximum of 24" on center. As an

alternative, battens may be fastened to the roof deck with No. 16 gauge by  $\frac{7}{16}$ " crown by  $1\frac{1}{2}$ " long staples. The staples shall be spaced a maximum of 12" on center. Batten ends shall be separated a minimum of  $\frac{1}{2}$ " every 4 feet to allow for drainage. Refer to Tables 11 through 13 for tiles installed over battens.

**Roofing Tile Installation:** The limitations on mean roof height and roof slope for installing the roofing tiles shall be in accordance with the following guidelines:

**Roof Slope Limitations:** The roofing tiles shall only be installed on buildings with a roof slope greater than or equal to 3:12 but not exceeding 12:12. Specific roof slope limitations are specified in Tables 3 through 13. **Note:** Battens are required when the roof slope exceeds 7:12.

**Mean Roof Height Limitations:** The mean roof height limitations shall be as specified in Tables 3 through 13. The roofing tiles shall not be installed on structures with a mean roof height greater than 60 feet.

**General:** The roofing tiles and the underlayment system shall be clean and dry at the time of their application.

The roofing tiles shall be installed in accordance with this product evaluation report and the manufacturer's installation instructions.

The roofing tiles shall be laid out from the right to the left, starting at the right rake. The Spanish "S" roofing tiles shall be installed with a minimum  $2\frac{1}{2}$  inch headlap. All other roofing tile profiles shall be installed with a minimum 3 inch headlap.

**NOTE:** If battens are used, then the fasteners shall penetrate through the batten and into the roof deck.

**Fasteners:** The roofing tiles shall be mechanically fastened to the roof deck. Fasteners must be long enough to penetrate a minimum of  $\frac{3}{4}$ " into or through the roof deck. The following types of fasteners may be required, depending on the installation method used as specified in Tables 3 through 13:

**Screws:** No. 8 x  $2\frac{1}{2}$ " long steel wood screws.

**Nails:** 10d ring shank nails (3" long and a shank diameter of 0.121").

**Rake Tiles:** Rake tiles shall be secured to minimum Spruce-Pine-Fir lumber framing with minimum two (2) 10d box nails (3" long, 0.128" shank diameter).

**Hip and Ridge Tiles:** The hip and ridge tiles shall be fastened to hip and ridge boards (Dimension lumber of sufficient height to support the hip and ridge tiles) in accordance with one of the following options:

- (1) Drill a  $\frac{3}{16}$ " hole in the lower 1/3 of the starter tile. Use a fastener as specified in Table 2 and secure the starter tile at both the drilled hole in the lower 1/3 and at the head of the tile. Seal the head of the fastener with a UV resistant sealant.
- (2) Prior to installing the starter tile, apply a roof tile adhesive along the entire length of the starter tile. Secure the head of the starter tile with a fastener as specified in Table 2.

The remaining hip and ridge tiles are to be installed with a minimum 1" headlap. Place the toe of the tile into a 4" to 5" bead of roof tile adhesive along the head of the lower tile. The head of the hip or ridge tile is to be secured using a fastener as specified in Table 2.

**Table 2**  
**Hip and Ridge Tile Fastener Requirements**

| Dimension lumber     | Fasteners per Tile                         |
|----------------------|--|
| Spruce-Pine-Fir      | One (1) No. 8 screw                        |
| Southern Yellow Pine | One (1) No. 8 screw or<br>One 10d box nail |

**Note:** A copy of the manufacturer's installation instructions as referenced in the document entitled "Concrete and Clay Roof Tile Design Criteria Installation Manual for Moderate Climate Regions," September, 2002 shall be available at the job site. All fasteners shall be corrosion resistant as specified in the International Residential Code (IRC), the International Building Code (IBC), and the Texas Revisions.

**Table 3**  
**Palema, Nordic, Rustic Shake/Slate, Traditional Flat**  
**(Roof Deck: Minimum 15/32" Plywood Deck without Battens)**

| <b>Gable/Hip Roofs</b>   |  |                         |                         |                         |                         |                         |
|--|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 30 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 30 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Hip Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Gable Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>&gt; 6:12</math> and <math>\leq 7:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Monoslope Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>&lt; 7:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 50 ft                   | 60 ft                   | 25 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 50 ft                   | 60 ft                   | 25 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |

Note: <sup>1</sup> The Exposure category for the structure location shall be as defined in either the International Residential Code or the International Building Code.

<sup>2</sup> Table is based on an Importance factor of 1.0

**Table 4**  
**Hacienda, Shake/Slate**  
**(Roof Deck: Minimum 15/32" Plywood Deck without Battens)**

| <b>Gable/Hip Roofs</b>   |  |                         |                         |                         |                         |                         |
|--|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 30 ft                   | 60 ft                   | 15 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 50 ft                   | 60 ft                   | 25 ft                   | 50 ft                   | N/A                     |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Hip Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 40 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Gable Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>&gt; 6:12</math> and <math>\leq 7:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Monoslope Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>&lt; 7:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 25 ft                   | 50 ft                   | N/A                     |
| One (1) No. 8 screw  | 60 ft                                    | 40 ft                   | 60 ft                   | 15 ft                   | 60 ft                   | N/A                     |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |

Note: <sup>1</sup> The Exposure category for the structure location shall be as defined in either the International Residential Code or the International Building Code.

<sup>2</sup> Table is based on an Importance factor of 1.0

**Table 5**  
**Spanish "S"**  
**(Roof Deck: Minimum 15/32" Plywood Deck without Battens)**

| <b>Gable/Hip Roofs</b>   |  |                         |                         |                         |                         |                         |
|--|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 40 ft                   | 60 ft                   | 20 ft                   | 40 ft                   | N/A                     |
| One (1) No. 8 screw  | 60 ft                                    | 40 ft                   | 60 ft                   | 20 ft                   | 40 ft                   | N/A                     |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Hip Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 30 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 30 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Gable Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>&gt; 6:12</math> and <math>\leq 7:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Monoslope Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>&lt; 7:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 30 ft                   | 50 ft                   | N/A                     | 30 ft                   | N/A                     |
| One (1) No. 8 screw  | 60 ft                                    | 30 ft                   | 50 ft                   | N/A                     | 30 ft                   | N/A                     |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |

Note: <sup>1</sup> The Exposure category for the structure location shall be as defined in either the International Residential Code or the International Building Code.

<sup>2</sup> Table is based on an Importance factor of 1.0

**Table 6**  
**Regal**  
**(Roof Deck: Minimum 15/32" Plywood Deck without Battens)**

| <b>Gable/Hip Roofs</b>   |  |                         |                         |                         |                         |                         |
|--|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 50 ft                   | 60 ft                   | 25 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 50 ft                   | 60 ft                   | 25 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Hip Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Gable Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>&gt; 6:12</math> and <math>\leq 7:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Monoslope Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>&lt; 7:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 30 ft                   | 30 ft                   | 15 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 30 ft                   | 30 ft                   | 15 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 50 ft                   |

Note: <sup>1</sup> The Exposure category for the structure location shall be as defined in either the International Residential Code or the International Building Code.

<sup>2</sup> Table is based on an Importance factor of 1.0

**Table 7**  
**Palema, Nordic, Rustic Shake/Slate, Traditional Flat**  
**(Roof Deck: Minimum 5/8" Plywood Deck without Battens)**

| <b>Gable/Hip Roofs</b>   |  |                         |                         |                         |                         |                         |
|--|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 40 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Hip Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Gable Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>&gt; 6:12</math> and <math>\leq 7:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Monoslope Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>&lt; 7:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 50 ft                   | 60 ft                   | 25 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |

Note: <sup>1</sup> The Exposure category for the structure location shall be as defined in either the International Residential Code or the International Building Code.

<sup>2</sup> Table is based on an Importance factor of 1.0

**Table 8**  
**Hacienda, Shake/Slate**  
**(Roof Deck: Minimum 5/8" Plywood Deck without Battens)**

| <b>Gable/Hip Roofs</b>   |  |                         |                         |                         |                         |                         |
|--|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 50 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 50 ft                   | 60 ft                   | 25 ft                   | 50 ft                   | N/A                     |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Hip Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 40 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Gable Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>&gt; 6:12</math> and <math>\leq 7:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Monoslope Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>&lt; 7:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 40 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 40 ft                   | 60 ft                   | 15 ft                   | 30 ft                   | N/A                     |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |

Note: <sup>1</sup> The Exposure category for the structure location shall be as defined in either the International Residential Code or the International Building Code.

<sup>2</sup> Table is based on an Importance factor of 1.0

**Table 9**  
**Spanish "S"**  
**(Roof Deck: Minimum 5/8" Plywood Deck without Battens)**

| <b>Gable/Hip Roofs</b><br><b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b> |  |                         |                         |                         |                         |                         |
|--|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 40 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 50 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 40 ft                   | 60 ft                   | 20 ft                   | 40 ft                   | N/A                     |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Hip Roofs</b><br><b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b>       |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 30 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 30 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Gable Roofs</b><br><b>Roof Slope: <math>&gt; 6:12</math> and <math>\leq 7:12</math></b>     |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Monoslope Roofs</b><br><b>Roof Slope: <math>\geq 3:12</math> and <math>&lt; 7:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 30 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 30 ft                   | 50 ft                   | N/A                     | 30 ft                   | N/A                     |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |

Note: <sup>1</sup> The Exposure category for the structure location shall be as defined in either the International Residential Code or the International Building Code.

<sup>2</sup> Table is based on an Importance factor of 1.0

**Table 10**  
**Regal**  
**(Roof Deck: Minimum 5/8" Plywood Deck without Battens)**

| <b>Gable/Hip Roofs</b>   |  |                         |                         |                         |                         |                         |
|--|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 40 ft                   | 50 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 50 ft                   | 40 ft                   | 25 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Hip Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Gable Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>&gt; 6:12</math> and <math>\leq 7:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Monoslope Roofs</b>   |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>&lt; 7:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements  | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|  | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|  | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 40 ft                   |
| One (1) No. 8 screw  | 60 ft                                    | 60 ft                   | 60 ft                   | 30 ft                   | 60 ft                   | 15 ft                   |
| Two (2) No. 8 screws   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 50 ft                   |

Note: <sup>1</sup> The Exposure category for the structure location shall be as defined in either the International Residential Code or the International Building Code.

<sup>2</sup> Table is based on an Importance factor of 1.0

**Table 11**  
**Palema, Nordic, Rustic Shake/Slate, Traditional Flat**  
**(Roof Deck: Minimum 1<sup>5</sup>/<sub>32</sub>” Plywood Deck with Battens)**

| <b>Gable/Hip Roofs</b>  |  |                         |                         |                         |                         |                         |
|---|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b>  |  |                         |                         |                         |                         |                         |
| Fastener Requirements   | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|   | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|   | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails  | 60 ft                                    | 20 ft                   | 40 ft                   | N/A                     | N/A                     | N/A                     |
| One (1) No. 8 screw   | 60 ft                                    | 25 ft                   | 50 ft                   | N/A                     | N/A                     | N/A                     |
| Two (2) No. 8 screws  | 60 ft                                    | 60 ft                   | 60 ft                   | 50 ft                   | 60 ft                   | 25 ft                   |
| <b>Hip Roofs</b>  |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b>  |  |                         |                         |                         |                         |                         |
| Fastener Requirements   | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|   | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|   | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails  | 60 ft                                    | 60 ft                   | 60 ft                   | 40 ft                   | 60 ft                   | 15 ft                   |
| One (1) No. 8 screw   | 60 ft                                    | 60 ft                   | 60 ft                   | 50 ft                   | 60 ft                   | 20 ft                   |
| Two (2) No. 8 screws  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Gable Roofs</b>  |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>&gt; 6:12</math> and <math>\leq 12:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements   | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|   | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|   | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 50 ft                   |
| One (1) No. 8 screw   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| Two (2) No. 8 screws  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Monoslope Roofs</b>  |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>&lt; 7:12</math></b>  |  |                         |                         |                         |                         |                         |
| Fastener Requirements   | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|   | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|   | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails  | 60 ft                                    | 15 ft                   | 30 ft                   | N/A                     | N/A                     | N/A                     |
| One (1) No. 8 screw   | 60 ft                                    | 15 ft                   | 30 ft                   | N/A                     | N/A                     | N/A                     |
| Two (2) No. 8 screws  | 60 ft                                    | 60 ft                   | 60 ft                   | 40 ft                   | 60 ft                   | 15 ft                   |

Note: <sup>1</sup> The Exposure category for the structure location shall be as defined in either the International Residential Code or the International Building Code.

<sup>2</sup> Table is based on an Importance factor of 1.0

**Table 12**  
**Hacienda Tile, Shake/Slate Tile**  
**(Roof Deck: Minimum 1<sup>5</sup>/<sub>32</sub>” Plywood Deck with Battens)**

| <b>Gable/Hip Roofs</b>  |  |                         |                         |                         |                         |                         |
|---|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b>  |  |                         |                         |                         |                         |                         |
| Fastener Requirements   | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|   | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|   | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails  | 60 ft                                    | 60 ft                   | 60 ft                   | 30 ft                   | 60 ft                   | 15 ft                   |
| One (1) No. 8 screw   | 60 ft                                    | 30 ft                   | 60 ft                   | 15 ft                   | 30 ft                   | N/A                     |
| Two (2) No. 8 screws  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 30 ft                   |
| <b>Hip Roofs</b>  |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b>  |  |                         |                         |                         |                         |                         |
| Fastener Requirements   | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|   | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|   | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| One (1) No. 8 screw   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 30 ft                   |
| Two (2) No. 8 screws  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Gable Roofs</b>  |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>&gt; 6:12</math> and <math>\leq 12:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements   | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|   | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|   | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| One (1) No. 8 screw   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| Two (2) No. 8 screws  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Monoslope Roofs</b>  |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>&lt; 7:12</math></b>  |  |                         |                         |                         |                         |                         |
| Fastener Requirements   | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|   | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|   | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails  | 60 ft                                    | 60 ft                   | 60 ft                   | 25 ft                   | 50 ft                   | N/A                     |
| One (1) No. 8 screw   | 60 ft                                    | 25 ft                   | 40 ft                   | N/A                     | N/A                     | N/A                     |
| Two (2) No. 8 screws  | 60 ft                                    | 60 ft                   | 60 ft                   | 50 ft                   | 60 ft                   | 25 ft                   |

Note: <sup>1</sup> The Exposure category for the structure location shall be as defined in either the International Residential Code or the International Building Code.

<sup>2</sup> Table is based on an Importance factor of 1.0

**Table 13**  
**Regal**  
**(Roof Deck: Minimum  $\frac{15}{32}$  " Plywood Deck with Battens)**

| <b>Gable/Hip Roofs</b>  |  |                         |                         |                         |                         |                         |
|---|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b>  |  |                         |                         |                         |                         |                         |
| Fastener Requirements   | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|   | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|   | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails  | 60 ft                                    | 15 ft                   | 30 ft                   | N/A                     | N/A                     | N/A                     |
| One (1) No. 8 screw   | 60 ft                                    | 15 ft                   | 30 ft                   | N/A                     | N/A                     | N/A                     |
| Two (2) No. 8 screws  | 60 ft                                    | 60 ft                   | 60 ft                   | 30 ft                   | 60 ft                   | 15 ft                   |
| <b>Hip Roofs</b>  |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>\leq 6:12</math></b>  |  |                         |                         |                         |                         |                         |
| Fastener Requirements   | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|   | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|   | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails  | 60 ft                                    | 60 ft                   | 60 ft                   | 25 ft                   | 50 ft                   | N/A                     |
| One (1) No. 8 screw   | 60 ft                                    | 60 ft                   | 60 ft                   | 30 ft                   | 50 ft                   | 15 ft                   |
| Two (2) No. 8 screws  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Gable Roofs</b>  |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>&gt; 6:12</math> and <math>\leq 12:12</math></b> |  |                         |                         |                         |                         |                         |
| Fastener Requirements   | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|   | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|   | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 30 ft                   |
| One (1) No. 8 screw   | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 40 ft                   |
| Two (2) No. 8 screws  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   |
| <b>Monoslope Roofs</b>  |  |                         |                         |                         |                         |                         |
| <b>Roof Slope: <math>\geq 3:12</math> and <math>&lt; 7:12</math></b>  |  |                         |                         |                         |                         |                         |
| Fastener Requirements   | Mean Roof Height Limitation <sup>2</sup> |                         |                         |                         |                         |                         |
|   | Inland II                                |                         | Inland I                |                         | Seaward                 |                         |
|   | Exposure B <sup>1</sup>                  | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> | Exposure B <sup>1</sup> | Exposure C <sup>1</sup> |
| Two (2) 10d ring shank nails  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 30 ft                   |
| One (1) No. 8 screw   | 60 ft                                    | 25 ft                   | 40 ft                   | N/A                     | N/A                     | N/A                     |
| Two (2) No. 8 screws  | 60 ft                                    | 60 ft                   | 60 ft                   | 60 ft                   | 60 ft                   | 50 ft                   |

Note: <sup>1</sup> The Exposure category for the structure location shall be as defined in either the International Residential Code or the International Building Code.

<sup>2</sup> Table is based on an Importance factor of 1.0