

# TEXAS DEPARTMENT OF INSURANCE

Engineering Services Program / MC 103-3A 333 Guadalupe Street P.O. Box 149104 Austin, Texas 78714-9104  
Phone No. (512) 322-2212 Fax No. (512) 463-6693

---

## PRODUCT EVALUATION RC-177

Effective February 1, 2014

*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 **March 2018**.*

*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 determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of 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.*

**26 Gauge PBR Metal Roofing Panels Installed Over Wood Purlins** manufactured by

**Triple S Steel Supply Co.**  
**6000 Jensen Drive**  
**Houston, Texas 77026**  
**Telephone: (800) 231-1034**

will be accepted for use in areas along the Texas Gulf Coast when installed in accordance with the manufacturer's installation instructions and this product evaluation.

## PRODUCT DESCRIPTION

The PBR metal roofing panels are minimum 26 gauge galvalume steel with an optional paint finish. The 26 gauge metal roofing panels have an actual coverage of 36". Each metal roofing panel has ribs that are 1 1/4" deep. The metal roofing panels conform to ASTM A792, with an 80,000 psi yield point. The metal roofing panels can be painted with CERAM-A-STAR 950 by Akzo Nobel.

## LIMITATIONS

**Roof Framing and Roof Deck:** The PBR metal roofing panels shall be installed over minimum 1x4 No. 2 Southern Yellow Pine wood purlins that are secured to minimum 1 5/32" plywood decking.

**New Roof Framing Attachment:** The roof framing and roof deck shall meet or exceed the uplift requirements of the International Residential Code or International Building Code and shall be installed as required for resistance to wind loads.

**Installation Over an Existing Roof Covering:** Installation over an existing roof covering is limited to a maximum of one existing layer of composition shingles, wood shingles or shakes, built-up roofing, or roll roofing applied over an existing, solid roof deck of minimum 1 5/32" plywood. Note: Inspection of the existing roof deck must be made prior to the installation of the roof panels. The condition of the existing roof deck must be acceptable to receive the wood purlins before the metal roofing panel installation proceeds. NOTE: Underlayment is not required to be installed.

**Design Wind Pressures:** The design pressure uplift load resistance shall be as specified in Table 1.

**Table 1**

Attachment of minimum 26 gauge PBR metal roofing panels to minimum 1x4 wood purlins that are attached to minimum  $1\frac{5}{32}$ " plywood decking

| <b>Design Wind Pressure (psf)</b> | <b>Fastener Pattern</b> | <b>Fastener Spacing</b> | <b>1x4 Wood Purlin Spacing</b> | <b>1x4 Screw Spacing Into Plywood Deck</b> |
|-----------------------------------|-------------------------|-------------------------|--------------------------------|--|
| -86.0                             | 12"-12"-12"             | 24"                     | 24"                            | 12"  |
| -131.0                            | 7"-5"-7"-5"-7"          | 18"                     | 18"                            | 6"   |

**Roof Slope:** The metal roofing panels may be installed on roofs with a roof slope as low as  $\frac{1}{2}$ :12 if sealant is used on the panel side laps. If sealant is not used on the panel side laps, then the minimum roof slope is 3:12.

### INSTALLATION INSTRUCTIONS

**General:** The PBR metal roofing panels shall be installed in accordance with the manufacturer's recommended installation instructions and this evaluation report.

**Wood Purlins:** The wood purlins shall be secured to the plywood deck using minimum No. 8 x 2  $\frac{1}{2}$ " wood screws spaced as specified in Table 1. If installation is over an existing roof covering, then the fasteners shall be long enough to ensure a minimum penetration of  $\frac{1}{4}$ " below the existing plywood roof decking.

**Panels:** The PBR metal roofing panels shall be secured to the wood purlins as specified in Table 1 and in accordance with this section. Refer to Figure 1 and Figure 2 for an illustration of the required fastener patterns.

**Underlayment:** A minimum of one layer of No. 30 (Type II) asphalt felt shall be used. The underlayment used shall comply with one or more of the following: ASTM D 226, ASTM D 4869, or ASTM D 1970. The underlayment shall be installed with 6-inch side laps and 3-inch end laps. The underlayment shall be applied with corrosion-resistant fasteners in accordance with the manufacturer's installation instructions. Fasteners shall be applied along the overlaps not farther apart than 36 inches on center. The underlayment shall be installed prior to the installation of the 1x4 purlins.

**Attachment of Metal Roof Panels to the Wood Purlins:** The PBR metal roofing panels shall be secured to the roof framing as follows:

**Roofing Panels to the Wood Purlins:** Minimum No. 9-15 x 1  $\frac{1}{2}$ " long, HWH Woodgrip screws with a sealing washer. A line of fasteners are to be installed as specified in Table 1. The spacing of the line of fasteners along the length of the panel (wood purlin spacing) shall be as specified in Table 1. Refer to Figure 1 and Figure 2 of this evaluation report for illustrations of the fastener patterns.

**Panel Side Laps:** Minimum  $\frac{1}{4}$ -14 x  $\frac{7}{8}$ " Lap Tek screws with a sealing washer. The fasteners shall be spaced 20 inches on center along the length of the side lap.

**Panel Ends and End Laps to the Wood Purlins:** Minimum No. 9-15 x 1  $\frac{1}{2}$ " long HWH Woodgrip screws with a sealing washer. A line of fasteners in a 7"-5"-7"-5"-7" pattern are to be installed. Refer to Figure 1 of this evaluation report for an illustration of the fastener pattern.

**Panel Edges to the Wood Purlins:** Minimum No. 9-15 x 1  $\frac{1}{2}$ " long HWH Woodgrip screws with a sealing washer. Along the edge of a panel, the fasteners shall be spaced the same spacing as for the line of fasteners in Table 1.

**Trims, Closures, and Accessories:** Components, such as the eave trim, rake trim, ridge trim, hip trim, and valley trim shall be installed as required by the manufacturer.

**Alternative Fasteners:** Substitution of equivalent fasteners shall meet the following requirements:

No. 9-15 Woodgrip screws with a sealing washer, manufactured by SFS

- Ultimate withdrawal (pullout)  $\geq$  542 lbs. in nominal 1" Spruce Pine Fir

**Note:** The manufacturer's installation instructions shall be available on the job site during the installation. All fasteners shall be corrosion resistant as specified in the International Residential Code (IRC), the International Building Code (IBC), and the Texas Revisions.

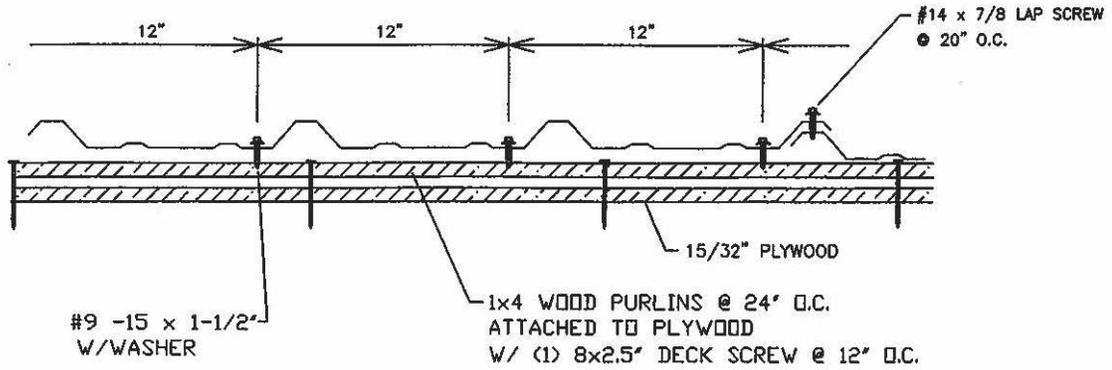


Figure 1. PBR Panel Detail (12-12-12 Fastener Pattern)

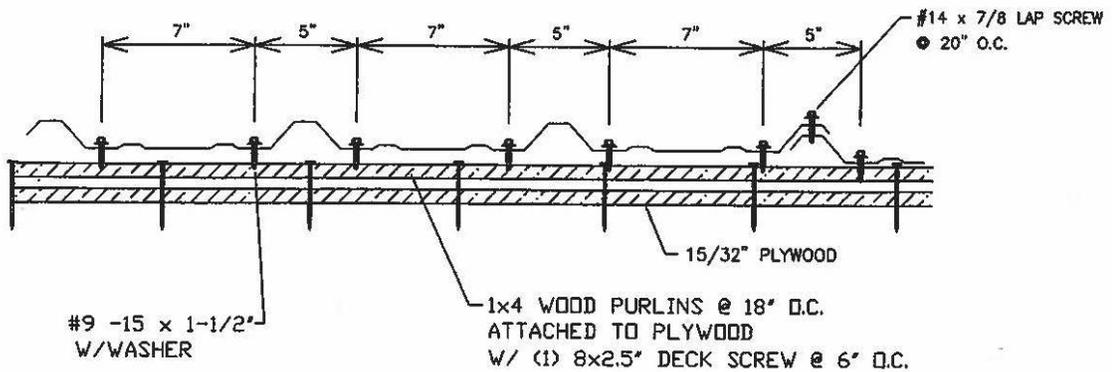


Figure 2. PBR Panel Detail (7-5-7-5-7 Fastener Pattern)