

ICC-ES Evaluation Report

ESR-1473

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DIVISION: 06—WOOD AND PLASTICS
Section: 06160—Sheathing**DIVISION: 07—THERMAL AND MOISTURE PROTECTION**
Section: 07305—Roofing Felt and Underlayment**REPORT HOLDER:****HUBER ENGINEERED WOODS, LLC**
ONE RESOURCE SQUARE
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CHARLOTTE, NORTH CAROLINA 28262
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www.huberwood.com**EVALUATION SUBJECT:****ZIP SYSTEM® AND ZIP SYSTEM+™ ROOF SHEATHING****1.0 EVALUATION SCOPE****Compliance with the following codes:**

- 2009 *International Building Code*® (2009 IBC)
- 2009 *International Residential Code*® (2009 IRC)
- 2006 *International Building Code*® (2006 IBC)
- 2006 *International Residential Code*® (2006 IRC)

Properties evaluated:

- Structural—wind uplift resistance
- Nonclassified roof covering
- Classified roof covering
- Weather resistance

2.0 USES

ZIP System® and ZIP System+™ roof sheathing panels are used as combination roof sheathing and roof underlayment.

3.0 DESCRIPTION**3.1 General:**

The ZIP System® and ZIP System+™ roof Sheathing panels are wood structural panels having a laminated facer. The ZIP System+™ panels are manufactured using a different resin than the Zip System® panels. The panels may also be laminated on the underside with an optional sheet radiant barrier complying with ICC-ES EG220. The panels are installed with a proprietary seam tape, which allows the systems to be used as an alternate to the underlayment required in Chapter 15 of the IBC and

Chapter 9 of the IRC. The OSB substrate complies with U.S. Doc PS-2 for wood structural panels and is overlaid on one side with a medium-density, phenol-impregnated, kraft paper overlay. The standard-size panels are nominally 4 feet by 8 feet (1220 mm by 2440 mm). Oversize panels, wider than 4 feet (1219 mm) or longer than 8 feet (2438 mm), or both, are also produced. The panels are available with either a square-finished-edge profile a tongue-and-groove edge profile or a machined edge profile. The proprietary seam tape is a self-adhering sheet-type membrane consisting of acrylic adhesive laminated to a polyolefin backing, and the face of the tape is labeled with ESR-1473. The tape is 0.012 inch thick (0.30 mm) with a minimum width of 3 inches (76.2 mm), and comes in rolls of varying length.

4.0 INSTALLATION**4.1 General:**

Installation of ZIP System® and ZIP System+™ roof sheathing must comply with the applicable code, this report and the manufacturer's published installation instructions. The installation instructions are to be available at the jobsite at all times during installation. The instructions within this report must govern if there are any conflicts between the manufacturer's published instructions and this report.

4.2 Application:

The ZIP System® and ZIP System+™ roof sheathing panels must be installed with the longer dimension perpendicular to the roof framing and fastened to the roof framing in accordance with the applicable code for wood structural panels. The panels must be installed in accordance with the panel span rating as shown on the panels. All corners are to be securely fastened. Tongue-and-groove and machined edge panels are designed to provide the correct gap size at the panel edges during installation. Squared-edged panels must be spaced apart a minimum of 1/8 inch (3.18 mm) at the time of installation. End joints of adjacent panel runs must be staggered. The panel must be installed with the laminated phenol-impregnated kraft paper facing to the exterior. All ZIP System® and ZIP System+™ roof sheathing seams must be sealed with the Zip System® tape. All overlay surfaces must be free of any significant presence of debris, particles or sawdust prior to installation of the ZIP System® tape. Overlay surfaces must be void of any free water prior to application of the ZIP System® tape. The ZIP System® tape edges must be sealed and the tape is to be centered within +/- 1/2 inch (12.7 mm) of all panel edge seam centers. All ZIP System® and ZIP System+™ roof sheathing surface defects, openings, cracks, etc., that completely penetrate

the overlay and substrate, and caused by handling or construction work, must be covered with the ZIP System[®] tape. The ZIP System[®] tape must extend a minimum of 1 inch (25.4 mm) past the panel edge T-joint intersections. The ZIP System[®] tape must be adhered to the ZIP System[®] and ZIP System+[™] roof sheathing. Wrinkles must not be present in the applied tape that extends to the panel seam.

4.3 Roof Assemblies

4.3.1 Classified Roof Coverings

4.3.1.1 Class A: Underlayment is not required for a minimum 1/2-inch thick Zip System+[™] roof sheathing with Class A asphalt glass fiber mat shingles.

4.3.1.2 Class B: Underlayment is not required for a minimum 1/2-inch thick Zip System[®] roof sheathing with Class A asphalt glass fiber mat shingles.

4.3.2 Nonclassified Roof Coverings: The ZIP System[®] and ZIP System+[™] roof sheathing panels are limited to installation on buildings permitted to have nonclassified roof coverings using code-complying asphalt-fiberglass shingles, metal shingles, metal panels, wood shakes, wood shingles, built-up roofing, slate and slate-type shingles, and clay and concrete tile roof coverings. Roof coverings may be applied directly to the taped ZIP System[®] and ZIP System+[™] Roof panels unless multi-layer underlayments are required.

4.4 Wind Uplift Resistance:

Wind uplift design loads and ZIP System[®] and ZIP System+[™] roof wood structural panel allowable uplift resistance shall be determined in accordance with Sections 1609 and 2304.7.2 of the IBC and Section R301.2.1 of the IRC. Roof coverings must be fastened to the sheathing with sufficient fasteners to resist the design uplift load.

5.0 CONDITIONS OF USE

The ZIP System[®] and ZIP System+[™] roof sheathing panels described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 This evaluation report and the manufacturer's published installation instructions, when required by the code official, must be submitted at the time of permit application.
- 5.2 The ZIP System[®] and ZIP System+[™] roof sheathing panels must be manufactured, identified and installed in accordance with this report and the manufacturer's installation instructions.
- 5.3 The ZIP System[®] and ZIP System+[™] roof sheathing panels are limited to code-approved structural use for wood structural panels with either a 24/16, 32/16 or 40/20 span rating.

5.4 In jurisdictions enforcing the IBC, the roof covering system incorporating the panels is limited to installations in the following construction types:

- Type III-B and Type V-B
- Type III-A or Type V-A under the conditions specified in footnote e of IBC Table 601
- Type III-A or Type V-A under the conditions specified in footnote c of IBC Table 601, for occupancies other than Group F-1, H, M and S-1

In jurisdictions enforcing the IRC, the roof covering system incorporating the panels may be installed on structures constructed in accordance with the IRC.

5.5 Enclosed attics and rafter spaces must be ventilated in accordance with the applicable code, except where conditioned attic assemblies are permitted by IRC Section R806.4.

5.6 An ice dam membrane must be provided as required by Section 1507.2.8.2 of the IBC and Section R905.2.7.1 of the IRC.

5.7 Installation is limited to roofs having a slope of 2:12 (16.67% slope) or greater.

5.8 ZIP System[®] and ZIP System+[™] roof sheathing panels are manufactured by Huber Engineered Woods, LLC, in Crystal Hill, Virginia; Commerce, Georgia; Broken Bow, Oklahoma; Easton, Maine; and Whites Creek (Spring City), Tennessee, under a quality control program with inspections by TECO (AA-654).

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Wood Structural Panel roof sheathing factory-laminated with an Alternative Roof Underlayment (AC266), dated May 2008.

7.0 IDENTIFICATION

Each ZIP System[®] and ZIP System+[™] roof sheathing panel covered by this report must bear a label that includes the manufacturer's name (Huber Engineered Woods, LLC) and address, the product name, the evaluation report number (ESR-1473), the grade and bond classification, the name of the inspection agency (TECO) and the name of the agency listing the panels for roof classification (Underwriters Laboratories Inc.).

The panel mill label and span rating label must be visible on the bottom face of panels, opposite the laminated facer. Panels laminated with an optional sheet radiant barrier on the underside of the panels must allow access to the grade stamp of the substrate below or must be relabeled with a screen printing onto the radiant panel or a label (sticker type) on the finished product showing the mill label and span rating

The ZIP System[®] tape roll is labeled with the product name and the evaluation report number (ESR-1473).