

# ICC-ES Evaluation Report

**ESR-1022**

Reissued January 1, 2012

*This report is subject to renewal in two years.*
[www.icc-es.org](http://www.icc-es.org) | (800) 423-6587 | (562) 699-0543

A Subsidiary of the International Code Council®

**DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION**  
**Section: 07 46 33—Plastic Siding**

**REPORT HOLDER:**

**HEARTLAND SIDING**  
 300 INDUSTRIAL PARK ROAD  
 BOONEVILLE, MISSISSIPPI 38829  
[www.heartlandsiding.com](http://www.heartlandsiding.com)

**EVALUATION SUBJECT:**
**HEARTLAND VINYL SIDING**
**1.0 EVALUATION SCOPE**
**Compliance with the following codes:**

- 2006 *International Building Code*® (IBC)
- 2006 *International Residential Code*® (IRC)
- 1997 *Uniform Building Code*™ (UBC)
- BOCA® *National Building Code*/1999 (BNBC)
- 1999 *Standard Building Code*® (SBC)

**Properties evaluated:**

- Durability
- Exterior veneer
- Wind load resistance
- Fire-resistance-rated construction

**2.0 USES**

Heartland vinyl siding is used as an exterior wall covering over an approved sheathing capable of supporting the imposed loads, including but not limited to positive transverse wind load; and as a closure material on the underside of exterior roof eaves (soffits).

**3.0 DESCRIPTION**

Heartland vinyl siding is extruded from polyvinyl chloride (PVC) resins and conforms to the requirements of ASTM D 3679. The panels are available in different colors and with a smooth finish or embossed with a matte or wood grain texture. The siding and soffits have a minimum thickness of 0.040 inch (1.02 mm) and are produced in a variety of profiles. Refer to Table 1 and table 3 of this report for the profiles and related descriptive information. Accessory materials such as corners, starter strips, J-channels and trim are manufactured of the same materials.

**4.0 INSTALLATION**
**4.1 General:**

Installation of Heartland vinyl siding, including the panels, corners, starter strips, trim and other accessory items, must be in accordance with ASTM D 4756, the manufacturer's installation instructions, the applicable code and this report.

The siding must be installed over solid sheathing with an approved water-resistive barrier as required by the applicable code. Flashing in accordance with the applicable code must be installed at all openings, penetrations, abutments with dissimilar materials, and at terminations of the sidings and soffit, to maintain the weather tightness of the assembly.

In order to maintain the wind load resistance set forth in Table 2 of this report, the wood stud framing or wood furring strips must have a minimum specific gravity of 0.42. Additionally, such furring strips, wood stud framing materials and related fastenings must be of sufficient strength to resist the imposed loads as required by the applicable code. Fasteners for attaching the siding to framing or furring strips must be corrosion-resistant nails having minimum <sup>3</sup>/<sub>8</sub>-inch-diameter (9.5 mm) heads and <sup>1</sup>/<sub>8</sub>-inch-diameter (3.2 mm) smooth shanks, and must be long enough to penetrate a minimum of 1 inch (12.7 mm). Nails must be installed through the center of the nailing slots, a maximum of 16 inches (406 mm) on center, leaving a minimum <sup>1</sup>/<sub>32</sub>-inch (0.8 mm) space between the fastener head and the face of the vinyl nailing hem, so as not to restrict movement due to expansion and contraction. In areas utilizing the UBC, fastener spacing must comply with UBC Section 1404.2.

A gap of <sup>1</sup>/<sub>4</sub> inch (6.4 mm) must be provided at all openings and terminations for expansion and contraction. Joints between panels must be overlapped a minimum of <sup>1</sup>/<sub>2</sub> inch (12.6 mm). Accessory materials such as corners, starter strips, J-channels and trim must be installed in accordance with the manufacturer's installation instructions.

**4.2 One-hour Load-bearing Fire-resistance Assembly:**

The limited load-bearing, one-hour fire-resistance-rated wall assembly consists of nominally 2-by-4-inch, No. 2 Grade, Douglas fir-larch wood studs at 16 inches (406 mm) on center with two top plates, a single bottom plate and horizontal cross bracing at the midpoint. The lesser of 1918 pounds (870 kg) per stud or 78 percent of full design load is permitted to be superimposed, for axial and bearing perpendicular to the grain stresses. The National Design

Specification as referenced in the applicable code must be used as the basis for design of the assembly. One layer of  $\frac{5}{8}$ -inch-thick (16 mm), Type X gypsum wallboard, 48 inches (1.2 m) wide, must be applied vertically to the interior side of the studs and secured with minimum  $1\frac{7}{8}$ -inch-long (22 mm), 6d nails at 7 inches (178 mm) on center along all studs. The gypsum wallboard joints require treatment consisting of drywall compound and drywall tape. The nail heads require treatment with drywall compound. The stud cavities must be filled with  $3\frac{1}{2}$ -inch-thick (89 mm), R-11, paper-faced, fiberglass insulation complying with ASTM C 665, Type II, Class C. The insulation must be installed with the paper face toward the interior of the building, and must be held in place with  $\frac{3}{8}$ -inch (10 mm) steel staples at 12 inches (305 mm) on center. The exterior face of the wall must be faced with  $\frac{5}{8}$ -inch-thick (12.7 mm), Type X gypsum sheathing with panel dimensions of 2 feet by 8 feet (610 mm by 2.4 m). The gypsum sheathing must be installed with the 8-foot dimension horizontal, with joints staggered and fastened with  $1\frac{7}{8}$ -inch-long (22 mm), 6d nails at 8 inches (203 mm) on center along all studs. A water-resistive barrier and Heartland Building Products' Heart Tech double 4-inch dutchlap vinyl siding must be installed over the gypsum sheathing and secured, at each stud location, with one  $1\frac{1}{2}$ -inch-long (38.1 mm) roofing nail having a 0.4-inch-diameter (10 mm) head and a 0.23-inch-thick (6 mm) shank. All fasteners used to fasten the gypsum sheathing, the gypsum wallboard, the insulation and the siding must be corrosion-resistant. The assembly as described achieves a fire-resistance rating of one hour when exposed to fire from either wall surface.

#### 4.3 Wind Resistance:

The design wind pressure must be determined in accordance with the applicable code (Chapter 16 of the IBC, UBC, BNBC, or SBC, or Section R301.2.1.1 of the IRC) and must not exceed the values shown in Table 2 of this report.

## 5.0 CONDITIONS OF USE

The Heartland Vinyl Siding described in this report complies with those codes specifically listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 Installation complies with this report, the manufacturer's published installation instructions and the applicable code. In the event of a conflict between the manufacturer's published installation instructions and this report, this report governs.
- 5.2 Heartland Vinyl Siding is limited to buildings of Type V-B (IBC), Type 5B (BNBC), Type VI (SBC), and Type V-N (UBC) construction, and to construction permitted by the IRC.
- 5.3 Exterior walls must be braced or sheathed to resist racking loads with approved materials in accordance with the requirements of the applicable code.
- 5.4 The siding must be installed only on exterior walls covered by solid sheathing capable of independently resisting design wind pressures, both positive and negative.
- 5.5 The siding is manufactured in Booneville, Mississippi, under a quality control program with inspections by Architectural Testing Inc. (AA-676).

## 6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with the ICC-ES Acceptance Criteria for Vinyl Siding (AC37), dated June 2009.
- 6.2 Testing in accordance with ASTM E 119.

## 7.0 IDENTIFICATION

The Heartland vinyl siding described in this report is identified by a stamp bearing the Heartland name, the product type, the statement "Conforms to ASTM specification D 3679," the statement "Conforms to UBC Standard 14-2" and the evaluation report number (ESR-1022).

**TABLE 1—HEARTLAND VINYL SIDING AND SOFFIT**

PRODUCT NAME	PRODUCT DESCRIPTION	EXPOSURE (inches)	PRODUCT LENGTH (feet-inches)	NOMINAL THICKNESS (inch)
<b>Siding Profiles</b>				
Cedar Peaks	A double 4.5-inch horizontal siding or a double 4.5-inch horizontal dutchlap siding with double nail hem	9	12-1, 16-8	0.046
Cedar Peaks Beaded 6.5	A single 6.5-inch horizontal beaded siding	6 <sup>1</sup> / <sub>2</sub>	12-4	0.048
D6 CedarMax	A double 6-inch horizontal siding with double nail hem	12	12-6, 16-2.5	0.050
T4DL Cedar Max	A triple 4-inch dutch lap horizontal siding	12	12-6, 16-2.5	0.046
Traditional	A single 8-inch horizontal siding	8	12-6	.046
Board and Batten	A single 7-inch vertical siding	7	10-0	0.046
Heart Tech	A double 4-inch, double 5-inch, or a double 4-inch or double 5-inch dutchlap with double nail hem horizontal siding	8 10	12-6 12-0	0.044 0.044
Arbor Glen	A double 4.5-inch horizontal siding or a double 4.5-inch horizontal dutchlap siding	9	12-1 and 16-0	0.042
Autumnwood Collection	A double 4-inch or double 5-inch horizontal siding, or a double 4-inch or double 5-inch dutchlap, or a single 6 <sup>1</sup> / <sub>2</sub> -inch or triple 3-inch horizontal siding	8 10 6 <sup>1</sup> / <sub>2</sub> 9	12-6 12-0 12-4 12-1	0.042 0.042 0.046 0.042
Ultra Premium	A double 4-inch or double 5-inch horizontal siding, or a double 4-inch or double 5-inch dutchlap horizontal siding	8 10 8	12-6 12-0	0.040 0.040 0.040
<b>Soffit Profiles</b>				
Heart Tech Soffit	Double 6-inch soffit panel	11.5	12-0	0.046
Woodhaven	Triple 3 <sup>1</sup> / <sub>3</sub> -inch soffit panel	10	12-0	0.044
Universal Soffit	Triple 4-inch or a double 5-inch soffit panel	10 12	12-0	0.040
Heartland Select	Triple 4-inch or double 5-inch soffit panel	10 12	12-0 12-0	0.040 0.040
Beaded Soffit	Triple 1 <sup>3</sup> / <sub>4</sub> -inch soffit panel	6	12-0	0.042

For **SI**: 1 inch = 25.4 mm.

**TABLE 2—ALLOWABLE NEGATIVE WIND LOADS**

SIDING1	NOMINAL THICKNESS (inches)	ALLOWABLE NEGATIVE WIND LOAD (psf)	
		SBC/IBC/BNBC	UBC
Triple 4 Soffit	0.040	47	29
Double 5	0.040	63	39
Double 5	0.044	57	36
Double 4.5 (double hem)	0.046	99	62
Double 4.5 (single hem)	0.042	54	33
Double 4	0.040	46	28

For **SI**: 1 psf = 0.0479 kPa, 1 foot = 304.8 mm.

<sup>1</sup>Nails and fastener spacing for siding attachment are described in Section 4.0 of this report.