

# ICC-ES Evaluation Report

**ESR-1066**

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**DIVISION: 07—THERMAL AND MOISTURE PROTECTION**  
**Section: 07460—Siding****REPORT HOLDER:****CERTAINTEED CORPORATION**  
803 BELDEN ROAD  
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(888) 919-2378  
[www.certainteed.com](http://www.certainteed.com)**EVALUATION SUBJECT:****CERTAINTEED VINYL SIDING AND SOFFIT****ADDITIONAL LISTEES:****VINYL CARPENTRY**  
750 EAST SWEDES FORD ROAD  
VALLEY FORGE, PENNSYLVANIA 19482  
(610) 341-7000**WOLVERINE SIDING SYSTEMS**  
750 EAST SWEDES FORD ROAD  
VALLEY FORGE, PENNSYLVANIA 19482  
(610) 341-7000**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:**

- Exterior veneer
- Wind load resistance—transverse
- Installation on noncombustible walls
- Fire-resistance-rated construction

**2.0 USES**

Certainteed vinyl sidings, which are also sold under the brand names Wolverine and Vinyl Carpentry, are used as exterior wall coverings on buildings of all construction types over approved sheathings capable of supporting the imposed loads, including but not limited to positive and negative transverse wind load; and as closures on the underside of exterior roof eaves (soffits).

**3.0 DESCRIPTION**

The vinyl sidings and soffits are extruded from polyvinyl chloride (PVC) resins. The siding panels conform to the requirements of ASTM D 3679 and are formed with an upper edge having nail slots and a lower edge that hooks into the upper edge of the lower course. The accessory items, used to detail the application of the product as an exterior wall covering, are of the same material.

All panels are designed with receiving legs and a nailing flange with a 1<sup>1</sup>/<sub>8</sub>-inch-by-<sup>3</sup>/<sub>8</sub>-inch (28.58 mm by 9.53 mm) prepunched elongated nailing slot spaced 2 inches (50.80 mm) on center. All siding panels used in horizontal applications have weep holes prepunched at a minimum of 18 inches (457.2 mm) on center on the underside to provide ventilation and drainage.

The panels are available in different colors with smooth finish or embossed with a matt or wood-grain texture. The panels range in thickness from 0.036 inch to 0.50 inch (0.91 mm to 1.27 mm).

The accessory shapes include a fascia, “F” shaped trim, “J” shaped trim, drip cap, starter strips, inside/outside corners, quarter round soffit molding, undersills, soffit cove trim, and “H” divider bar. The thicknesses of accessories range from 0.040 to 0.050 inch (1.02 to 1.27 mm).

Refer to Table 1 for panel thicknesses, lengths and profiles within the scope of this report.

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

Installation of the system, including the panels, corners, starter strips, trim and other accessory items, must be installed in accordance with IBC Section 1405.13 or IRC Section R703.4, as applicable, ASTM D 4756, the manufacturer’s published installation instructions, the applicable code and this report.

**4.2 Siding Installation:**

The siding must be installed over solid plywood structural sheathing complying with DOC PS 1, or Exposure 1 oriented strand board (OSB) sheathing complying with DOC PS 2, covered with an approved water-resistive barrier as required by the applicable code.

The method of application of the siding is by first installing a starter strip horizontally, along the bottom of the building matching the lowest corner of the building. The starter strip is then nailed to the building every 8 inches (203.2 mm) to 10 inches (254 mm) in slots provided in the strip. The nails must be located in the center of the slot, 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 strip, to allow for expansion.

The inside and outside corner posts are then installed on all building corners, and accessories are installed around all wall openings.

The first siding panel must be locked into the starter strip and nailed to the building in the center of the nailing slots every 16 to 24 inches (406.4 mm to 609.6 mm). (Refer to Table 2 of this report.) The nails must be located in the center of the slot, leaving a minimum  $1/32$ -inch (0.8 mm) space between the fastener head and the face of the vinyl nailing strip, to allow for expansion. Succeeding panels shall be similarly installed, locking into the panel below.

The horizontal siding panel ends must be overlapped 1 inch (2.54 cm) at butt joints and held  $1/4$  inch (0.64 cm) clear of all vertical accessory members at wall ends and around openings. For vertical siding panel end joint treatment, refer to the manufacturer's installation instructions.

#### 4.3 Soffit Installation:

Siding and soffit panels may be installed as horizontal soffits at a maximum span of 24 inches (610 mm), with end joints on supports. The panels must be retained by F-channels, J-channels or aluminum or vinyl fascia caps. The channels must be fastened to the fascia, nailing strip or solid wood sheathing at 16 inches (406 mm) on center, with nails of sufficient length to penetrate the nailer 1 inch (25.4 mm) or to penetrate through the material thickness, whichever is less. The minimum No. 26 gage (0.019 inch) aluminum fascia cap must be bent to form a minimum  $1\frac{1}{2}$ -inch (38 mm) receiving flange at corners; channels shall allow for  $1/4$  inch (6.4 mm) of expansion at each wall. To permit expansion, panels are measured to length and cut  $1/2$  inch (12.7 mm) less. The panels are first inserted into the wall channels and then into the fascia channels. Each panel must be secured to the fascia or to nailing strips at a maximum of 16 inches (406 mm) on center. Adjacent panels must be interlocked. Fascia caps must then be installed over the panels, and a drip edge must be placed over the cap to reduce moisture intrusion. For porch ceilings, the ceiling perimeter is framed with the J-channels or F-channels, and panel placement is as set forth for soffits.

#### 4.4 Fasteners:

Siding, soffits and accessories must be fastened to framing with either galvanized, aluminum or stainless steel nails with a minimum length of  $1\frac{1}{2}$  inches (38 mm), a shaft diameter of 0.122 inch (3 mm), and a  $7/16$ -inch-diameter (11.11 mm) head. Minimum embedment into studs must be  $3/4$  inch (19.05 mm). Corrosion-resistant staples may also be used, where indicated in Table 2. Staples must be 16 gage, with a minimum length of  $1\frac{3}{4}$  inches (44.45 mm) and a crown width of  $7/16$  inch (11.11 mm). Minimum staple embedment into studs must be  $3/4$  inch (19.05 mm).

Accessory materials such as corners, starter strips and trim must be fastened in accordance with the manufacturer's instructions.

#### 4.5 Types I, II, III and IV Construction (IBC) and Noncombustible Construction (UBC, BNBC and SBC):

The vinyl siding may be installed on the exterior of buildings of any type of construction when installed over maximum 1-inch-thick (25.4 mm) expanded polystyrene insulation [1 pound per cubic foot (16 kg/m<sup>3</sup>)] and mechanically fastened with noncorrosive, self-tapping,  $2\frac{1}{2}$ -inch-long (64 mm) screws with minimum  $3/8$ -inch-diameter

(9.5 mm) heads and  $1/8$ -inch-diameter (3 mm) shafts, and with minimum  $5/8$ -inch-diameter (15.88 mm) nylon washers, to the exterior of a steel stud wall constructed with  $1/2$ -inch-thick (12.7 mm) gypsum wall board on the exterior and  $5/8$ -inch-thick (15.88 mm) Type X gypsum board on the interior. The assembly described in this section must be limited to installations exposed to maximum basic wind speeds (3-second gust) of 100 miles per hour (161 km/h) on structures a maximum of 40 feet (12 192 mm) in height under the IBC and BNBC; maximum basic wind speeds (fastest mile) of 80 miles per hour (129 km/h) on structures a maximum of 40 feet (12 192 mm) in height in Exposure C areas under the UBC; and maximum basic wind speeds of 70 miles per hour (112 km/h) on structures a maximum of 40 feet (12 192 mm) in height in Exposure C areas under Section 1606.2 of the SBC.

#### 4.6 Fire-resistance-rated Construction:

**4.6.1 One-hour Fire-resistance-rated Limited Load-bearing Wood Stud Wall:** Wood studs must be nominal 2-by-4 Douglas fir marked "STD & BTR, Doug. Fir, S-Dry," spaced 16 inches (406 mm) on center. The wall must be constructed with a single bottom plate and double top plates. The wall is a maximum of 10 feet (3.05 m) in height with double 2-by-4 wood fire blocking located at 8 feet (2.44 m) above the bottom plate. Stud cavities must be filled with  $3\frac{1}{2}$ -inch-thick (88.9 mm), R-11, mineral wool insulation batts. The stud wall must be covered on the exterior with one layer of  $1/2$ -inch-thick (12.7mm), exterior gypsum sheathing, and on the interior face with a single layer of  $5/8$ -inch-thick (15.9mm), Type FSW, fire-resistant gypsum wall board. The exterior wall sheathing must be covered with a water-resistive barrier. The studs are assembled with two 16d smooth box nails on each end. The wall board is installed vertically with  $1\frac{3}{4}$ -inch-long (44.5 mm), No. 6, bugle head drywall screws spaced 8 inches (203.2 mm) on center around the perimeter of the board and along the studs. Vertical joints are staggered on opposite sides of the wall. The joints must be treated with ready-mixed joint compound and spark-perforated paper joint reinforcing tape. The siding must be attached to the studs using  $1\frac{1}{2}$ -inch-long (38 mm) roofing nails with flat heads, spaced 8 inches (203 mm) on center along the stud.

The axial load capacity of the wall is limited to a maximum load of 1050 pounds (476.7 kg) per stud or 32 percent of maximum design load calculated under the AF&PA National Design Specification for Wood Construction (NDS).

**4.6.2 Fire-resistance-rated Walls on Buildings of Type V Construction under the IBC (Type 5 under the BNBC, Type VI under the SBC, Type V under the UBC):** The vinyl siding may be installed over code-complying, exterior, fire-resistance-rated bearing or nonbearing walls required to be of Type V construction under the IBC (Type 5 under the BNBC, Type VI under the SBC, Type V under the UBC) without affecting the hourly rating of the walls.

#### 4.7 Wind Resistance:

The design wind pressures must be determined in accordance with Chapter 16 of the IBC, UBC, BNBC, or SBC, as applicable, or Section R301.2.1 of the IRC, and must not exceed the allowable values shown in Table 2 of this report.

In areas where the basic wind speed (3-second gust) does not exceed 100 mph (45 m/s) [80 mph (36 m/s) (fastest mile) under the UBC] and the building height is less than or equal to 40 feet (12 192 mm) in Exposure C areas, installation must comply with the prescriptive

requirements of IBC Section 1405.13, BNBC Section 1406.3.3, SBC Section 1403.9 or UBC Section 1405, as applicable.

In areas where the basic wind speed (3-second gust) does not exceed 110 mph (49 m/s) in Exposure B areas and does not exceed 90 mph (40 m/s) in Exposure C areas or 85 mph (37 m/s) in Exposure D areas, installation must comply with the prescriptive requirements of IRC Section R703.4. For applications in excess of the prescriptive requirements, the installation must be in accordance with IRC Section R301.2.1.1.

Wind resistance of the soffit panels is outside the scope of this report.

Resistance to positive and negative wind loads is determined by structural capacity of the substrate.

## 5.0 CONDITIONS OF USE

The CertainTeed Vinyl Sidings and Soffits 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 Installation complies with this report, the manufacturer's published 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 The siding is limited to design wind pressures shown in Table 2 of this report.
- 5.3 In jurisdictions adopting the IRC, the siding must be installed in accordance with IRC Table R703.4 and limited to areas where the design wind pressure does not exceed the values shown in Table 2 of this report.
- 5.4 The exterior walls must be braced or sheathed to resist racking loads with approved materials in accordance with the requirements of the applicable building code.
- 5.5 When installation is on Types I, II, III and IV construction (IBC) and noncombustible construction (UBC, BNBC and SBC), and fire-resistance-rated construction, refer to Sections 4.5 and 4.6 of this report, respectively.

5.6 The siding must be installed only on exterior walls covered by a solid sheathing capable of supporting the imposed loads, including but not limited to positive and negative transverse wind loads.

5.7 The siding may be installed on buildings of any construction type under the IBC or buildings under the IRC, and at a fire separation distance of greater than 5 feet (1524 mm) in accordance with IBC Section 704.5 or IRC Table R302.1, as applicable.

5.8 The sheathing must be covered with a water-resistive barrier, as required by the applicable code.

5.9 The siding is manufactured in Jackson, Michigan and Williamsport, Maryland 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 October 2008.

6.2 Test reports in accordance with UBC 26-4, UBC 8-1, NFPA 268 and ASTM E 119.

## 7.0 IDENTIFICATION

The vinyl sidings and soffits described in this report are identified by a stamp bearing the brand name (CERTAINTEED, Wolverine or Vinyl Carpentry), the product name and style, the statement "Conforms to ASTM Specification D 3679," the statement "Conforms to UBC Standard 14-2" and the evaluation report number (ESR-1066).

In jurisdictions enforcing the IBC or UBC, foam plastic insulation used for noncombustible construction must be identified in accordance with IBC Section 2603.5.6 or UBC Section 2602.2.

TABLE 1—VINYL SIDING AND SOFFIT

PRODUCT NAME	PRODUCT CODE	PRODUCT STYLE	THICKNESS (inch)	LENGTH (feet-inches)
The following products are sold under the brand name CertainTeed:				
Monogram46	33101	Double 4-inch	0.046	12-6
	33110	Double 4-inch	0.046	12-6
	33111	Double 4-inch	0.046	12-6
	33122	Double 5-inch	0.046	12-0
	33103	Double 5-inch DutchLap	0.046	12-0
	33125	Double 5-inch DutchLap	0.046	12-0
Monogram 46L	33114	Double 4-inch	0.046	16-8
	33139	Double 4-inch	0.046	20-0
	33126	Double 5-inch DutchLap	0.046	16-0
	33140	Double 5-inch DutchLap	0.046	20-0
Classic	36110	Double 4-inch	0.044	12-6
	36119	Double 4 1/2-inch DutchLap	0.044	12-1
	36122	Double 5-inch	0.044	12-0
Mainstreet	39131	Triple 3-inch	0.042	12-1
	39111	Double 4-inch	0.042	12-6
	39110	Double 4-inch	0.042	12-6
	39122	Double 5-inch	0.042	12-0
	39113	Double 4-inch DutchLap	0.042	12-6
	39125	Double 5-inch DutchLap	0.042	12-0
	39104	Single 8-inch	0.042	12-6
	39102	6 1/2-inch Beaded	0.042	12-4
Board & Batten	34137	Single 8 Vertical	0.048	12-6
	34138	Single 8 Vertical	0.048	10-0
Carolina Beaded	38102	6 1/2-inch Beaded	0.044	12-4
Northwoods	60106	Single 7-inch	0.050	10-1
	60107	Single 10-inch Shake	0.050	10-0
	60148	Single 9-inch Shake	0.050	10-4
The following products are sold under the brand name Wolverine:				
Restoration Smooth	36132	Triple 3-inch	0.044	12-1
	36118	Double 4 1/2-inch	0.044	12-1
Classic	36132	Triple 3-inch	0.044	12-1
	36118	Double 4 1/2-inch	0.044	12-1
	36110	Double 4 inch	0.044	12-6
	36119	Double 4 1/2-inch DutchLap	0.044	12-1
	36122	Double 5-inch	0.044	12-0
American Legend	40131	Triple 3-inch	0.042	12-1
	40110	Double 4-inch	0.042	12-6
	40111	Double 4-inch	0.042	12-6
	40122	Double 5-inch	0.042	12-0
	40119	Double 4 1/2-inch DutchLap	0.042	12-1
	40102	6 1/2-inch Beaded	0.042	12-4
	40105	Single 8-inch	0.042	12-6
Encore	43130	Triple 3-inch	0.040	12-1
	43110	Double 4-inch	0.040	12-6
	43122	Double 5-inch	0.040	12-0
	43119	Double 4 1/2-inch DutchLap	0.040	12-1
Newtown	61110	Double 4-inch	0.040	12-6
	61122	Double 5-inch	0.040	12-6
	61125	Double 5-inch DutchLap	0.040	12-6

TABLE 1—VINYL SIDING AND SOFFIT (Continued)

PRODUCT NAME	PRODUCT CODE	PRODUCT STYLE	THICKNESS (inch)	LENGTH (feet-inches)
The following products are sold under the brand name Vinyl Carpentry:				
Triple 3 <sup>1</sup> / <sub>3</sub> -inch InvisiVent Soffit	46228	Triple 3 <sup>1</sup> / <sub>3</sub> -inch Vented Soffit	0.044	12-6
Triple 3 <sup>1</sup> / <sub>3</sub> -inch Soffit / Vertical	46229	Triple 3 <sup>1</sup> / <sub>3</sub> -inch Soffit / Vertical Siding	0.044	12-6
IronMax Soffit	47201	Double 5-inch Solid Soffit	0.046	12-0
	47205	Double 5-inch Fully Vented	0.046	12-0
Universal Soffit	48224	Triple 4-inch Fully Vented	0.040	12-0
	48216	Triple 4-inch Solid Soffit	0.040	12-0
	48220	Triple 4-inch Center Vented	0.040	12-0
Beaded Soffit	46209	Triple 2-inch Solid Soffit	0.039	12-6
	46211	Triple 2-inch Vented	0.039	12-6
Value Soffit	49224	Triple 4-inch Fully Vented	0.036	12-0
	49216	Triple 4-inch Solid Soffit	0.036	12-0
	49220	Triple 4-inch Center Vented	0.036	12-0

TABLE 2—ALLOWABLE NEGATIVE WIND LOADS

SIDING	MAXIMUM STUD <sup>1</sup> SPACING (inches)	FASTENER <sup>2</sup>	ALLOWABLE NEGATIVE WIND LOAD (psf)			
			SBC	BNBC	IBC/IRC	UBC
Monogram 46 D5	16	Nail to studs	53	53	53	33
	16	Staple to studs	47	47	47	29
Monogram 46 D5DL	16	Nail to studs	76	76	76	47
	16	Staple to studs	49	49	49	31
	24	Nail to studs	44	44	44	28
Monogram 46 D4	16	Nail to studs	91	91	91	57
	16	Staple to studs	58	58	58	36
Monogram 46L D4	16	Nail to studs	87	87	87	54
Monogram 46L D5DL	16	Nail to studs	78	78	78	49
Classic D5	16	Nail to studs	67	67	67	42
	16	Staple to studs	36	36	36	22
	24	Nail to studs	49	49	49	31
Classic D4	16	Nail to studs	80	80	80	50
Mainstreet D5	16	Nail to studs	76	76	76	47
	16	Staple to studs	38	38	38	24
	24	Nail to studs	47	47	47	29
Mainstreet D5DL	16	Nail to studs	62	62	62	39
	16	Staple to studs	58	58	58	36
	24	Nail to studs	42	42	42	26
	24	Staple to studs	36	36	36	22
Mainstreet D4	16	Nail to studs	53	53	53	33
	16	Staple to studs	82	82	82	51
Carolina Beaded	16	Nail to studs	67	67	67	42
	16	Staple to studs	56	56	56	35
	24	Nail to studs	36	36	36	22
	24	Staple to studs	38	38	38	24
Northwoods S7	16	Nail to studs	60	60	60	38
Northwoods S10	16	Nail to studs	42	42	42	26
Northwoods S9	16	Nail to studs	42	42	42	26
Board & Batten	12	Nail to sheathing	62	62	62	39
American Legend D5	16	Nail to studs	36	36	36	22
	16	Staple to studs	33	33	33	21
American Legend D4	16	Nail to studs	60	60	60	38
	16	Staple to studs	58	58	58	36
Encore D5	16	Nail to studs	44	44	44	28
	16	Staple to studs	69	69	69	43
	24	Nail to studs	33	33	33	21
	24	Staple to studs	44	44	44	28
Encore D4	16	Nail to studs	64	64	64	40
	16	Staple to studs	53	53	53	33
Newtown D4	16	Nail to studs	51	51	51	32
Newtown D5	16	Nail to studs	38	38	38	24
Newtown D5DL	16	Nail to studs	22	22	22	14
Triple 3- <sup>1</sup> / <sub>3</sub> Soffit / Vertical	12	Nail to sheathing	56	56	56	35

For **SI**: 1 inch = 25.4 mm, 1 psf = 0.0479 kPa.

<sup>1</sup>Studs are minimum 2-by-4 wood with a minimum specific gravity of 0.42.

<sup>2</sup>Nails and staples must be as specified in Section 4.4.