

ICC-ES Evaluation Report


ESR-1862

Reissued November 2024

Subject to renewal November 2026

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<p>DIVISION: 07 00 00— THERMAL AND MOISTURE PROTECTION</p> <p>Section: 07 40 00— Roofing and Siding Panels</p> <p>Section: 07 46 00— Siding</p>	<p>REPORT HOLDER: CEDAR VALLEY MANUFACTURING, INC.</p>	<p>EVALUATION SUBJECT: CEDAR VALLEY SIDING AND MANSARD PANELS</p>	
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1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2012, 2009 and 2006 [International Building Code® \(IBC\)](#)
- 2012, 2009 and 2006 [International Residential Code® \(IRC\)](#)
- 2013 *Abu Dhabi International Building Code (ADIBC)*[†]

[†]The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Property evaluated:

- Weather resistance
- Structural-Transverse Wind Load Resistance

2.0 USES

Cedar Valley Shingle and Mansard panels are used as exterior wall veneer on buildings of Type VB construction under the IBC (except as permitted in Section 5.2 of this report), and on structures constructed in accordance with the IRC.

3.0 DESCRIPTION

3.1 General:

Panels are pre-assembled using vertical or mixed grain Western Red Cedar tapered shingles secured to ¹¹/₃₂-inch (8.73 mm) Exposure 1 plywood sheathing over coated-glass-fiber mat. The shingles are attached to the plywood sheathing using adhesive and galvanized staples.

3.2 Types of Panels:

3.2.1 Sidewall Shingle Panels: The panels are manufactured in a single course with 7¹/₈-, 5.3-, or 4.25-inch (181, 135, 108 mm) exposures. The panels have an exposure length of 96 inches (2438 mm). The panel ends have an overlapping joint which provides a minimum layer of fiberglass felt and shingle over all vertical sheathing seams. The shingles are supplied with either regular-sawn or rough-sawn surface and either a straight or staggered butt line.

3.2.2 Decorator Shingle Siding Panels: The decorative panels are manufactured in a single course with 7 $\frac{1}{8}$ - or 5.3-inch (181,135 mm) exposures. The panels have an exposure length of 96 inches (245 mm). The shingles are supplied with either regular-sawn or rough-sawn surface and are supplied with butts in nine different patterns: round, fish-scale, octagon, hexagon, diamond, full cove, arrow, diagonal, or square.

3.2.3 Mansard Panels: The panels are manufactured with the cedar shingles in a single course with a 14-inch (356 mm) exposure. The panels have an exposure of 96 inches by 14 inches (2438 mm by 356 mm) with a net coverage of 9.33 sq. ft. (0.87 m²).

3.3 Materials:

3.3.1 Fasteners: 8d common wire and 8d ring shank corrosion-resistant nails.

3.3.2 Shingles and Shakes: Vertical and mixed grain shingles and No. 1 Grade Western Red Cedar tapered shakes.

3.3.3 Plywood: Exposure 1, CDX glue plywood, 1 $\frac{1}{32}$ -inch (8.7 mm) thick complying with DOC PS 1.

3.3.4 Staples: No. 18 gauge 1 $\frac{1}{2}$ -inch (12.70 mm) long, 1 $\frac{1}{4}$ -inch (6.4 mm) crown galvanized steel staples and stainless steel staples.

3.3.5 Coated Glass-Fiber Mat: GAF Versashield® underlayment recognized in ESR-2053, or coated glass-fiber mat complying with ASTM D2178 (Type IV) or ASTM D146.

3.3.6 Construction Adhesive: APA specification AFG01, exterior grade.

3.3.7 Corners: Flush-mounting and add-on pre-assembled corner units are available to match panel texture and exposure.

4.0 DESIGN AND INSTALLATION

4.1 General:

Cedar Valley Shingle Siding and Mansard Panels must be installed in accordance with the manufacturer's published installation instructions and this report.

Studs or mansard rafters must not exceed 24 inches (610 mm) on center. An approved water-resistive barrier complying with the applicable code must be installed over the studs. All panel vertical joints must be positioned over framing members. Stud walls must be braced in accordance with the applicable code. All windows, doors, or other openings must be flashed in accordance with the applicable code. Flashing must be provided at intersections of different materials and all points subject to the entrance of water. The panels must be installed so as to maintain a minimum 6 inches (152 mm) of clearance between the panels and the earth on the exterior of the building. Flush cut joints must be sealed with caulk.

The manufacturer's published installation instructions and this report must be strictly adhered to and a copy of these instructions must be available at all times on the jobsite during installation.

4.2 Transverse Wind Load Assemblies:

4.2.1 Single-Course Mansard Panels installed on Wood Studs Spaced 16 inches on Center, Maximum Allowable Wind Pressure and Wind Speed – Table 1: Panels are nailed with two 8d nails per stud. The one-course panel was nailed 1 $\frac{3}{4}$ -inch from top and 3 $\frac{1}{4}$ -inch from the bottom at 16 inches (406 mm) on center starting 1 $\frac{1}{2}$ inch from butted end. Stud framing must be minimum nominal 2-by-4, Western Woods with a minimum specific gravity of 0.36, S-Dry, Stud Grade, spaced a maximum of 16 inches (406 mm) on center.

4.2.2 Single-Course Panels (Coastal Panels; various exposures) Installed on Wood Studs Spaced 16 Inches on Center, Maximum Allowable Wind Pressure and Wind Speed -Table 1: Panels are nailed with one 8d nail per stud. The single-course panel was nailed 1 $\frac{1}{2}$ inch from the top at 16 inches (406 mm) on center starting 1 $\frac{1}{2}$ inch from butted end. Stud framing must be minimum nominal 2-by-4, Western Woods with a minimum specific gravity of 0.36, S-Dry, Stud Grade, spaced a maximum of 16 inches (406 mm) on center.

4.2.3 Single-Course Vent Panels (14 inch exposure) installed with a cedar spacer strip on Wood Studs Spaced 16 inches on Center, Maximum Allowable Wind Pressure and Wind Speed – Table 1: Each Vent Panel is installed with a 5 $\frac{1}{16}$ -inch-thick by 3 $\frac{3}{4}$ -inch-wide by 6 $\frac{1}{2}$ -inch-long cedar spacing strip stapled to each panel course 8 inches on center as measured from left to right. The Vent Panels are nailed with one 8d nail per stud. The single-course panel was nailed 1 $\frac{1}{2}$ inch from the top at 16 inches (406 mm) on center starting 1 $\frac{1}{2}$ inch from butted end. Stud framing must be minimum nominal 2-by-4, Western Woods with a minimum specific gravity of 0.36, S-Dry, Stud Grade, spaced a maximum of 16 inches (406 mm) on center.

5.0 CONDITIONS OF USE:

Cedar Valley Shingle Siding and Mansard Panels products 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 The panels must not be used as a nailing base.
- 5.2 The panels may be installed on exterior walls of buildings of Type I, II, III and IV construction when installed in accordance with Section 1405.5 of the IBC.
- 5.3 The panels may be applied to the exterior of combustible, fire-resistance-rated walls with a horizontal separation of greater than 5 feet (1.5 m), when approved by the code official.
- 5.4 When panels are installed as mansards, they must not be installed on slopes less than 60 degrees from the horizontal. Water from the main roof must not flow over the mansard.
- 5.5 The products are manufactured by Cedar Valley Manufacturing, Inc. facility at Hollister, CA, under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

- 6.1 Test reports of wind-driven rain in accordance with ASTM E331.
- 6.2 Test reports on transverse wind load resistance in accordance with ASTM E330.
- 6.3 Engineering calculations.
- 6.4 Installation details.
- 6.5 Quality documentation.

7.0 IDENTIFICATION

- 7.1 Each package of Cedar Valley Shingle Siding and Mansard Panels covered by this report must be labeled with the manufacturer's name (Cedar Valley Manufacturing, Inc.), the product name and the ICC-ES evaluation report number (ESR-1862).
- 7.2 The report holder's contact information is the following:

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TABLE 1—ALLOWABLE PRESSURE AND WIND SPEED (MPH)
ASCE 7-05 3 SECOND GUST 2009 and 2006 IBC, ASCE 7-10 2012 IBC¹

PANEL TYPE	FASTENERS AND FRAMING	ALLOWABLE PRESSURE (PSF)	END ZONE AREA ³ (SQ FT)	MAXIMUM WINDSPEED ¹ (MPH) (3 Second Gust)		
				HEIGHT (FT)	EXP B	EXP C
Single-Course Mansard 14" Exposure Tapered Shingle Panels	Blind nailing; Painted M-167 Cedar "Split-Less" Wood Siding Anchor Down Nails; 1 ³ / ₄ " from top and 3 ¹ / ₄ " from bottom. For framing refer to Footnote 2	75	20	15	184	167
				20	184	162
				25	184	159
				30	184	155
				40	177	151
				50	171	147
Single-Course Mansard 14" Exposure Tapered Shingle Panels	Blind nailing; Painted M-167 Cedar "Split-Less" Wood Siding Anchor Down Nails; 1 ³ / ₄ " from top and 3 ¹ / ₄ " from bottom. For framing refer to Footnote 2	75	10	60	167	145
				15	178	162
				20	178	157
				25	178	154
				30	178	150
				40	171	146
Single-Course 5.3" Exposure (Mixed Grain/Vertical Grain), 1/2" thick butt Coastal Panels	Blind nailing; 13 gauge, 1 ³ / ₄ " long nails with 3/8 inch heads nailed 1 ¹ / ₂ " down from top. For framing refer to Footnote 2	80	20	50	165	143
				60	162	140
				15	191	173
				20	191	168
				25	191	165
				30	191	161
Single-Course 5.3" Exposure (Mixed Grain/Vertical Grain), 1/2" thick butt Coastal Panels	Blind nailing; 13 gauge, 1 ³ / ₄ " long nails with 3/8-inch heads nailed 1 ¹ / ₂ " down from top. For framing refer to Footnote 2	80	10	40	183	156
				50	177	153
				60	173	150
				15	185	167
				20	185	163
				25	185	159
Single-Course 7 ¹ / ₈ " Exposure, Vertical Grain, 5/16" thick butt shingle Coastal Panels	Blind nailing; 13 gauge, 1 ³ / ₄ " long nails with 3/8-inch heads nailed 1 ¹ / ₂ " down from top. For framing refer to Footnote 2	65	20	30	185	156
				40	177	151
				50	172	148
				60	167	145
				15	171	155
				20	171	151
Single-Course 7 ¹ / ₈ " Exposure, Vertical Grain, 5/16" thick butt shingle Coastal Panels	Blind nailing; 13 gauge, 1 ³ / ₄ " long nails with 3/8-inch heads nailed 1 ¹ / ₂ " down from top. For framing refer to Footnote 2	65	10	25	171	148
				30	171	144
				40	164	140
				50	159	137
				60	155	135
				15	165	150
Single-Course 7 ¹ / ₈ " exposure, Vertical Grain, 5/16" thick butt shingle Vent Panels	Blind nailing; 13 gauge, 2 ¹ / ₂ " long nails with 3/8-inch heads nailed 1 ¹ / ₂ " down from top. For framing refer to Footnote 2	85	20	20	165	146
				25	165	143
				30	165	140
				40	159	136
				50	154	133
				60	150	130
Single-Course 7 ¹ / ₈ " exposure, Vertical Grain, 5/16" thick butt shingle Vent Panels	Blind nailing; 13 gauge, 2 ¹ / ₂ " long nails with 3/8-inch heads nailed 1 ¹ / ₂ " down from top. For framing refer to Footnote 2	85	10	15	192	174
				20	192	169
				25	192	166
				30	192	162
				40	184	158
				50	179	154
Single-Course 7 ¹ / ₈ " exposure, Vertical Grain, 5/16" thick butt shingle Vent Panels	Blind nailing; 13 gauge, 2 ¹ / ₂ " long nails with 3/8-inch heads nailed 1 ¹ / ₂ " down from top. For framing refer to Footnote 2	85	10	60	174	151
				15	186	169
				20	186	164
				25	186	160
				30	186	157
				40	178	153
				50	173	149
				60	169	146

For SI: 1 inch = 25.4 mm, 1 foot = 0.3 m, 1 square foot = 0.09m², 1 pound per square foot (psf) = 48 Pa, 1 mile per hour (MPH) = 1.6 kilometers per hour.

¹Table 1 is based on ASCE 7-05 using three second gust wind velocities for nominal design wind speed, V_{ASD} ; to convert to ultimate design wind speeds, V_{ult} , use Table 1609.3.1 of the 2012 IBC.

²2 by 4 Doug. Fir-L, S-Dry Stud Grade spaced 16 inches on center.

³End zone area is determined using the ASCE 7 and the components and cladding external pressure coefficient figures.