



Joint Evaluation Report

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ESR-1301

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This report is subject to renewal 02/2020.

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES

SECTION: 06 16 00—SHEATHING

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION

SECTION: 07 46 23—WOOD SIDING

REPORT HOLDER:

LOUISIANA-PACIFIC CORPORATION

**414 UNION STREET, SUITE 2000
NASHVILLE, TENNESSEE 37219**

EVALUATION SUBJECT:

**LP SMARTSIDE® STRAND SUBSTRATE LAP SIDING AND LP SMARTSIDE® STRAND
SUBSTRATE PANEL SIDING**



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DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES

Section: 06 16 00—Sheathing

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION

Section: 07 46 23—Wood Siding

REPORT HOLDER:

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EVALUATION SUBJECT:

LP SMARTSIDE® STRAND SUBSTRATE LAP SIDING AND LP SMARTSIDE® STRAND SUBSTRATE PANEL SIDING

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2015, 2012, 2009, 2006, and 2003 *International Building Code*® (IBC)
- 2015, 2012, 2009, 2006, and 2003 *International Residential Code*® (IRC)

Properties evaluated:

- Exterior siding
- Structural

2.0 USES

LP SmartSide® Strand Substrate Lap Siding and LP SmartSide® Strand Substrate Panel Siding are used as exterior wall covering materials on buildings where combustible materials are permitted.

LP SmartSide® Strand Substrate Panel Siding may be used as bracing method 3 for conventional wood-framed walls as specified in the 2006/2009/2012 IBC Section 2308.9.3 and IRC Section R602.10, or the WSP method as specified in the 2015 IBC Section 2308.6 and IRC Section R602.10.

LP SmartSide® Strand Substrate Panel Siding may be used as sheathing for wood structural panel shear walls having allowable shear loads specified for PS2-compliant wood-based sheathing in accordance with 2003/2006

IBC Section 2306.4.1, and 2009/2012/2015 IBC Section 2306.3.

3.0 DESCRIPTION

3.1 General:

LP SmartSide® Strand Substrate Lap Siding and LP SmartSide® Strand Substrate Panel Siding are engineered-wood exterior wall covering materials that are suitable for long-term exposure to weather or conditions of similar severity, when fastened to vertical supports or approved nailable wood substrates in accordance with their span ratings and this evaluation report. The lap siding and panel siding products consist of a mat-formed wood substrate preservatively treated with zinc borate in accordance with AWWA Standard T1, and a resin-impregnated overlay material bonded to the face of the lap and panel siding products intended to be exposed to the weather. Additionally, all panel and lap siding edges are factory-sealed with a sealer in accordance with the approved quality-control manual.

3.2 LP SmartSide® Strand Substrate Lap Siding:

LP SmartSide® Strand Substrate Lap Siding is available in widths of 6, 8 and 12 inches (152, 203 and 305 mm); categories $\frac{3}{8}$ and $\frac{7}{16}$; and lengths of 12 to 16 feet (3658 to 4877 mm). The 8-inch-wide (203 mm), $\frac{7}{16}$ category lap siding is also available with an optional self-alignment edge.

3.3 LP SmartSide® Strand Substrate Panel Siding:

LP SmartSide® Strand Substrate Panel Siding is 4 feet (1219 mm) wide and 4, 6, 7, 8, 9 or 10 feet (1219, 1829, 2134, 2438, 2743 or 3048 mm) in length. LP SmartSide® Strand Substrate Panel Siding is available in $\frac{3}{8}$, $\frac{7}{16}$, and $\frac{19}{32}$ - categories. The $\frac{3}{8}$ category panel has grooves spaced at 8 inches (203 mm), with a minimum thickness at the grooves of 0.164 inch (4 mm) and a minimum thickness at the shiplap of 0.136 inch (4 mm). The $\frac{7}{16}$ category panel has grooves spaced at 4 or 8 inches (102 or 203 mm), with a minimum thickness at the grooves of 0.235 inch (6 mm) and a minimum thickness at the shiplap of 0.150 inch (4 mm). The $\frac{19}{32}$ category panel has grooves spaced at 4 or 8 inches (102 or 203 mm), with a minimum thickness at the grooves of 0.311 inch (8 mm) and a minimum shiplap thickness of 0.194 inch (5 mm).

LP SmartSide® Strand Substrate Panel Siding is classified as Exterior Rated Siding or Exterior Rated Siding—Sheathing. The classification is noted in the label on the panel. Exterior Rated Siding is intended to be installed in applications in accordance with the 2006/2009/2012 IBC Section 2308.9.3 and IRC Section

R602.10 or 2015 IBC Section 2308.6 and 2015 IRC Section R602.10 as an exterior siding suitable for long-term exposure to weather or conditions of similar severity. In addition to the intended application for Exterior

Rated Siding, Exterior Rated Siding—Sheathing is intended to be installed in applications in accordance with 2003/2006 IBC Section 2306.4.1, and 2009/2012/2015 IBC Section 2306.3.

4.0 INSTALLATION

4.1 General:

LP SmartSide® Strand Substrate Lap Siding and LP SmartSide® Strand Substrate Panel Siding must be installed in accordance with the manufacturer's published installation instructions (titled *Application Instructions LP SmartSide® Strand Substrate Lap LP SmartSide® Strand Substrate Panel Siding*) and this report. In the event of conflicts, this report governs. A copy of the manufacturer's installation instructions must be on the jobsite at all times during installation.

LP SmartSide® Strand Substrate Lap Siding and LP SmartSide® Strand Substrate Panel Siding must be installed with an approved water-resistive barrier as required by the applicable code. Openings in, penetrations through, and terminations of the LP SmartSide® Strand Substrate Lap Siding and LP SmartSide® Strand Substrate Panel Siding are outside the scope of this report and must be specifically approved by the code official in accordance with the applicable code.

Unless otherwise noted in this report, fasteners and fastener spacing must be as noted in the applicable code.

4.2 LP SmartSide® Strand Substrate Lap Siding:

LP SmartSide® Strand Substrate Lap Siding must be attached to framing members spaced a maximum of 16 inches (406 mm) on center for $\frac{3}{8}$ category siding and a maximum of 24 inches (610 mm) on center for $\frac{7}{16}$ category siding.

Self-aligning LP SmartSide® Strand Substrate Lap Siding is installed with nails placed at the top of the LP SmartSide® Strand Substrate Lap Siding, $\frac{1}{2}$ inch (13 mm) down from the upper edge. Each successive course of lap siding must rest on the back rabbet and must self-align at an overlap of $\frac{13}{16}$ inch (21 mm).

Nails must be of sufficient length to penetrate a minimum of $1\frac{1}{2}$ inches (38 mm) through the sheathing and into framing at each stud location.

4.3 LP SmartSide® Strand Substrate Panel Siding:

LP SmartSide® Strand Substrate Panel Siding must be installed with its long dimension oriented vertically.

When LP SmartSide® Strand Substrate Panel Siding is applied directly to the framing, the maximum spacing of the framing must be consistent with the span rating of the LP SmartSide® Strand Substrate Panel Siding, which is identified on the panel's label.

Allowable loads for shearwalls sheathed with LP SmartSide® Strand Substrate Panel Siding—Sheathing are noted in Table 1.

Four-foot-by-8-foot (1219 mm by 2438 mm) LP SmartSide® Strand Substrate Panel Siding—Sheathing installed vertically, directly to framing, with a single row of nails penetrating both laps, spaced 6 inches on center at panel edges and 12 inches (305 mm) on center at intermediate supports may be used to satisfy the wall bracing requirements for conventional light frame

construction specified in the code for prescriptive construction. Install per code requirements for bracing method 3 with wood structural panels or WSP bracing method.

All LP SmartSide® Strand Substrate Panel Siding joints must occur at framing members and must be protected with a continuous wood batt, approved caulking, flashing, or vertical or horizontal shiplap, or otherwise made waterproof.

4.4 Component and Cladding Wind Pressure Capacity:

Maximum allowable component and cladding wind loads (wall, zone 5) for LP SmartSide® Strand Substrate Lap Siding and LP SmartSide® Strand Substrate Panel Siding based on a minimum fastener schedule, are provided in Tables 2 through 5. Tables 2 and 3, for lap and panel siding, respectively, are based on full fastener penetration into the wall studs, i.e., fastener penetration = fastener length - siding thickness. Tables 4 and 5, for lap and panel siding, respectively, are based on a minimum fastener penetration into the wall studs of $1\frac{1}{2}$ inches.

5.0 CONDITIONS OF USE

The LP SmartSide® Strand Substrate Lap Siding and LP SmartSide® Strand Substrate Panel Siding 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 LP SmartSide® Strand Substrate Lap Siding must not be used to satisfy the bracing requirements specified in the code.
- 5.2 LP SmartSide® Strand Substrate Panel Siding—Sheathing, when installed as set forth in this report, may be used as method 3 bracing specified in Section 2308.9 of the IBC and Section R602.10 of the IRC, or the WSP method as specified in 2015 IBC Section 2308.6 and IRC Section R602.10.
- 5.3 In areas where seismic analysis is required by the applicable code, the applicable code requirements for wood structural panel shear walls must be consulted for additional detailing requirements, restrictions concerning certain usages, required modifications to the allowable shear loads tabulated in this report, and additional inspection requirements.
- 5.4 LP SmartSide® Strand Substrate Lap Siding and LP SmartSide® Strand Substrate Panel Siding must not be installed in contact with concrete or masonry.
- 5.5 LP SmartSide® Strand Substrate Lap Siding and LP SmartSide® Strand Substrate Panel Siding must be installed with a minimum 6 inches (152 mm) of clearance from finished grade.
- 5.6 When field cuts are made to LP SmartSide® Strand Substrate Lap Siding and LP SmartSide® Strand Substrate Panel Siding, all exposed surfaces must be finished according to the paint or caulk/sealant manufacturers' specifications.
- 5.7 LP SmartSide® Strand Substrate Lap Siding and LP SmartSide® Strand Substrate Panel Siding are manufactured by Louisiana-Pacific Corporation in Hayward, Wisconsin (Mill No. 357); Newberry, Michigan (Mill No. 416); Tomahawk, Wisconsin (Mill No. 435); Two Harbors, Minnesota (Mill No. 399); and Swan Valley, Minitonas, Manitoba, Canada (Mill No. 457); under a quality-control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Treated-engineered-wood Siding (AC321), dated October 2005 (editorially revised December 2015).

7.0 IDENTIFICATION

LP SmartSide® Strand Substrate Lap Siding and LP SmartSide® Strand Substrate Panel Siding must be labeled with the product designation and the name of Louisiana-Pacific Corp. The stamp shall provide the following information:

1. Mill number.
2. The evaluation report number (ESR-1301).
3. Grade/exposure.
4. Span rating.
5. Performance category (based on customary inch fractions).

TABLE 1—ALLOWABLE RACKING SHEAR (plf) FOR LP SMARTSIDE® STRAND SUBSTRATE PANEL SIDING—SHEATHING SHEAR WALLS WITH FRAMING OF DOUGLAS FIR—LARCH OR SOUTHERN PINE FOR WIND OR SEISMIC LOADING^{1,2,3}

| PERFORMANCE CATEGORY | MINIMUM NAIL PENETRATION IN FRAMING (inches) | PANELS APPLIED DIRECTLY TO FRAMING | | | | |
|---|--|--------------------------------------|--------------------------------------|-----|------------------|----------------|
| | | Nail Size (Common or Galvanized Box) | Nail Spacing at Panel Edges (inches) | | | |
| | | | 6 | 4 | 3 | 2 ⁴ |
| ⁵ / ₁₆ ^{5,6} | 1 ¹ / ₄ | 6d | 180 | 270 | 350 | 450 |
| ³ / ₈ ^{5,6} | | | 200 | 300 | 390 | 510 |
| ³ / ₈ ^{5,6} | 1 ¹ / ₂ | 8d | 220 | 320 | 410 | 530 |
| ⁷ / ₁₆ ⁵ | | | 240 | 350 | 450 | 585 |
| ¹⁹ / ₃₂ ⁵ | 1 ⁵ / ₈ | 10d | 340 | 510 | 665 ⁴ | 870 |

For **SI**: 1 inch = 25.4 mm, 1 plf = 14.6 N/m.

¹For framing of other species: (a) Find specific gravity for species of lumber in AF & PA National Design Specification; (b) find shear value from table for nails size; c) multiply value by 0.82 for species with specific gravity greater than or equal to 0.42 but less than 0.49, or 0.65 for species with specific gravity less than 0.42.

²All panel edges must be backed with 2-inch nominal or wider framing. Panels must be installed with the long dimension oriented in the vertical direction. Space nails 6 inches o.c. along intermediate framing members for ³/₈ category and ⁷/₁₆ category panels installed on studs spaced 24 inches o.c. For other conditions and panel thicknesses, space nails 12 inches o.c. on intermediate supports.

³The values are for short-term loads due to wind or earthquake (133% increase) and must be reduced by 25 percent for normal duration of loading.

⁴Framing at panel edges must be 3 inches nominal or wider and nails must be staggered where nails are spaced 2 inches o.c., and where 10d nails having penetration into framing of more than 1⁵/₈ inches are spaced 3 inches, or less, o.c. **Exception:** Unless otherwise required, 2-inch nominal framing may be used where full nailing surface is available and nails are staggered.

⁵Except as noted in Footnote 7, panel thickness at point of nailing at panel edges determines applicable shear values, except that ³/₈ category panels nailed at shiplap edges use shear values for ⁵/₁₆ category panels, and ⁷/₁₆ and ¹⁹/₃₂ category panel sidings nailed at shiplap edges use shear values for ³/₈ category panels.

⁶Shiplap edges must be double-nailed; one nail must be placed in the underlap and a second nail must be placed in the overlap at the nail spacing specified for the applicable shear value.

⁷Fasteners must not be installed in panel siding grooves in the field of the panel siding or when the panel siding grooves occur at cut edges of the panel siding.

TABLE 2a—LAP SIDING - MAXIMUM NOMINAL (ALLOWABLE) COMPONENT AND CLADDING DESIGN WIND SPEED, V_{asd}^{1,2}

| PERFORMANCE CATEGORY | MAXIMUM WALL STUD SPACING ³ (inches) | SIDING WIDTH (inches) | MAXIMUM ALLOWABLE WIND PRESSURE (psf) | MAXIMUM NOMINAL (ALLOWABLE) WIND SPEED, V _{asd} ⁴ (mph) | | |
|------------------------------|---|-----------------------|---------------------------------------|---|-----|-----|
| | | | | Wind Exposure Category | | |
| | | | | B | C | D |
| ³ / ₈ | 16 | 6 | 80 | 170 | 150 | 140 |
| | | 8 | 79 | 170 | 150 | 140 |
| | | 12 | 50 | 140 | 120 | 110 |
| ⁷ / ₁₆ | 16 | 6 | 80 | 170 | 150 | 140 |
| | | 8 | 76 | 170 | 150 | 130 |
| | | 12 | 49 | 140 | 120 | 110 |
| | 24 | 6 | 71 | 170 | 145 | 130 |
| | | 8 | 51 | 155 | 120 | 110 |
| | | 12 | 32 | 110 | 90 | 90 |

For **SI**: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 1.6 kph.

¹One fastener per stud located ³/₄ inch from the top edge of the siding. Each successive course of lap siding must overlap a minimum of 1 inch. Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).

²Tabulated values assume full penetration of the fastener into the wall studs, i.e., fastener penetration = fastener length – siding thickness.

³Wall studs must have a minimum specific gravity of 0.42.

⁴Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-foot height in Zone 5 with smallest effective area per Chapter 6 of ASCE 7-05, Section R301.2 of the 2009/2012 IRC, and Section 1609.1.1 of the 2009 IBC.

TABLE 2b—LAP SIDING - MAXIMUM ULTIMATE COMPONENT AND CLADDING DESIGN WIND SPEED, $V_{ult}^{1,2}$

| PERFORMANCE CATEGORY | MAXIMUM WALL STUD SPACING ³ (inches) | SIDING WIDTH (inches) | MAXIMUM ULTIMATE WIND PRESSURE (psf) | MAXIMUM ULTIMATE DESIGN WIND SPEED, V_{ult}^4 (mph) | | |
|----------------------|---|-----------------------|--------------------------------------|---|-----|-----|
| | | | | Wind Exposure Category | | |
| | | | | B | C | D |
| $\frac{3}{8}$ | 16 | 6 | 133 | 200 | 180 | 180 |
| | | 8 | 131 | 200 | 180 | 180 |
| | | 12 | 83 | 180 | 150 | 140 |
| $\frac{7}{16}$ | 16 | 6 | 133 | 200 | 180 | 180 |
| | | 8 | 127 | 200 | 180 | 160 |
| | | 12 | 81 | 180 | 150 | 140 |
| | 24 | 6 | 119 | 200 | 180 | 160 |
| | | 8 | 85 | 180 | 150 | 140 |
| | | 12 | 54 | 140 | 120 | 115 |

For SI: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 1.6 kph.

¹One fastener per stud located $\frac{3}{4}$ inch from the top edge of the siding. Each successive course of lap siding must overlap a minimum of 1 inch. Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).

²Tabulated values assume full penetration of the fastener into the wall studs, i.e., fastener penetration = fastener length – siding thickness.

³Wall studs must have a minimum specific gravity of 0.42.

⁴Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-foot height in Zone 5 with smallest effective area per Chapter 26 of ASCE 7-10 and Section 1609.1.1 of the 2012/2015 IBC.

TABLE 3a—PANEL SIDING - MAXIMUM NOMINAL (ALLOWABLE) COMPONENT AND CLADDING DESIGN WIND SPEED, V_{asd}^1

| PERFORMANCE CATEGORY | MAXIMUM WALL STUD SPACING ² (inches) | FASTENER SPACING ³ (inches o.c.) | | MAXIMUM ALLOWABLE WIND PRESSURE (psf) | MAXIMUM NOMINAL (ALLOWABLE) WIND SPEED, V_{asd}^4 (mph) | | |
|----------------------|---|---|-------|---------------------------------------|---|-----|-----|
| | | Edges | Field | | Wind Exposure Category | | |
| | | | | | B | C | D |
| $\frac{3}{8}$ | 16 | 6 | 12 | 46 | 130 | 110 | 105 |
| | | | 6 | 80 | 170 | 150 | 140 |
| | 24 | 6 | 12 | 31 | 110 | 90 | 85 |
| | | | 6 | 61 | 150 | 130 | 120 |
| $\frac{7}{16}$ | 16 | 6 | 12 | 45 | 130 | 110 | 105 |
| | | | 6 | 80 | 170 | 150 | 140 |
| | 24 | 6 | 12 | 30 | 110 | 90 | 85 |
| | | | 6 | 59 | 150 | 130 | 120 |
| $\frac{19}{32}$ | 16 | 6 | 12 | 41 | 130 | 110 | 100 |
| | | | 6 | 80 | 170 | 150 | 140 |
| | 24 | 6 | 12 | 27 | 105 | 90 | - |
| | | | 6 | 55 | 150 | 125 | 110 |

For SI: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 1.6 kph.

¹Tabulated values assume full penetration of the fastener into the wall studs, i.e., fastener penetration = fastener length – siding thickness.

²Wall studs must have a minimum specific gravity of 0.42.

³Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).

⁴Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-foot in Zone 5 with smallest effective area per Chapter 6 of ASCE 7-05, Section R301.2 of the 2009/2012 IRC, and Section 1609.1.1 of the 2009 IBC.

TABLE 3b—PANEL SIDING - MAXIMUM ULTIMATE COMPONENT AND CLADDING DESIGN WIND SPEED, V_{ult} ¹

| PERFORMANCE CATEGORY | MAXIMUM WALL STUD SPACING ² (inches) | FASTENER SPACING ³ (inches o.c.) | | MAXIMUM ULTIMATE WIND PRESSURE (psf) | MAXIMUM ULTIMATE DESIGN WIND SPEED, V_{ult} ⁴ (mph) | | |
|----------------------|---|---|-------|--------------------------------------|--|-----|-----|
| | | Edges | Field | | Wind Exposure Category | | |
| | | | | | B | C | D |
| $\frac{3}{8}$ | 16 | 6 | 12 | 77 | 160 | 150 | 130 |
| | | | 6 | 133 | 200 | 180 | 180 |
| | 24 | 6 | 12 | 51 | 140 | 120 | 110 |
| | | | 6 | 102 | 200 | 160 | 150 |
| $\frac{7}{16}$ | 16 | 6 | 12 | 74 | 160 | 140 | 130 |
| | | | 6 | 133 | 200 | 180 | 180 |
| | 24 | 6 | 12 | 50 | 140 | 120 | 110 |
| | | | 6 | 99 | 200 | 160 | 150 |
| $\frac{19}{32}$ | 16 | 6 | 12 | 69 | 160 | 140 | 130 |
| | | | 6 | 133 | 200 | 180 | 180 |
| | 24 | 6 | 12 | 46 | 130 | 115 | - |
| | | | 6 | 92 | 180 | 160 | 150 |

For **SI**: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 1.6 kph.

¹Tabulated values assume full penetration of the fastener into the wall studs, i.e., fastener penetration = fastener length – siding thickness.

²Wall studs must have a minimum specific gravity of 0.42.

³Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).

⁴Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-foot height in Zone 5 with smallest effective area per Chapter 26 of ASCE 7-10 and Section 1609.1.1 of the 2012/2015 IBC.

TABLE 4a—LAP SIDING - MAXIMUM NOMINAL (ALLOWABLE) COMPONENT AND CLADDING DESIGN WIND SPEED, V_{asd} ^{1,2}

| PERFORMANCE CATEGORY | MAXIMUM WALL STUD SPACING ³ (inches) | SIDING WIDTH (inches) | MAXIMUM ALLOWABLE WIND PRESSURE (psf) | MAXIMUM NOMINAL (ALLOWABLE) WIND SPEED, V_{asd} ⁴ (mph) | | |
|----------------------|---|-----------------------|---------------------------------------|--|-----|-----|
| | | | | Wind Exposure Category | | |
| | | | | B | C | D |
| $\frac{3}{8}$ | 16 | 6 | 78 | 170 | 150 | 130 |
| | | 8 | 56 | 150 | 125 | 110 |
| | | 12 | 35 | 120 | 100 | 90 |
| $\frac{7}{16}$ | 16 | 6 | 78 | 170 | 150 | 130 |
| | | 8 | 56 | 150 | 125 | 110 |
| | | 12 | 35 | 120 | 100 | 90 |
| | 24 | 6 | 52 | 145 | 120 | 110 |
| | | 8 | 37 | 120 | 100 | 90 |
| | | 12 | 24 | 90 | - | - |

For **SI**: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 1.6 kph.

¹One fastener per stud located $\frac{3}{4}$ inch from the top edge of the siding. Each successive course of lap siding must overlap a minimum of 1 inch. Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).

²Tabulated values assume a fastener penetration of $1\frac{1}{2}$ inches into the wall studs.

³Wall studs must have a minimum specific gravity of 0.42.

⁴Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-foot height in Zone 5 with smallest effective area per Chapter 6 of ASCE 7-05, Section R301.2 of the 2009/2012 IRC, and Section 1609.1.1 of the 2009 IBC.

TABLE 4b—LAP SIDING - MAXIMUM ULTIMATE COMPONENT AND CLADDING DESIGN WIND SPEED, $V_{ult}^{1,2}$

| PERFORMANCE CATEGORY | MAXIMUM WALL STUD SPACING ³ (inches) | SIDING WIDTH (inches) | MAXIMUM ULTIMATE WIND PRESSURE (psf) | MAXIMUM ULTIMATE DESIGN WIND SPEED, V_{ult}^4 (mph) | | |
|----------------------|---|-----------------------|--------------------------------------|---|-----|-----|
| | | | | Wind Exposure Category | | |
| | | | | B | C | D |
| $\frac{3}{8}$ | 16 | 6 | 130 | 200 | 180 | 180 |
| | | 8 | 93 | 180 | 160 | 150 |
| | | 12 | 59 | 150 | 130 | 120 |
| $\frac{7}{16}$ | 16 | 6 | 130 | 200 | 180 | 180 |
| | | 8 | 93 | 180 | 160 | 150 |
| | | 12 | 59 | 150 | 130 | 120 |
| | 24 | 6 | 86 | 180 | 160 | 140 |
| | | 8 | 62 | 160 | 130 | 120 |
| | | 12 | 39 | 120 | - | - |

For SI: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 1.6 kph.

¹One fastener per stud located $\frac{3}{4}$ inch from the top edge of the siding. Each successive course of lap siding must overlap a minimum of 1 inch. Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).

²Tabulated values assume a fastener penetration of $1\frac{1}{2}$ inches into the wall studs.

³Wall studs must have a minimum specific gravity of 0.42.

⁴Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-foot height in Zone 5 with smallest effective area per Chapter 26 of ASCE 7-10 and Section 1609.1.1 of the 2012/2015 IBC.

TABLE 5a—PANEL SIDING - MAXIMUM NOMINAL (ALLOWABLE) COMPONENT AND CLADDING DESIGN WIND SPEED, V_{asd}^1

| PERFORMANCE CATEGORY | MAXIMUM WALL STUD SPACING ² (inches) | FASTENER SPACING ³ (inches o.c.) | | MAXIMUM ALLOWABLE WIND PRESSURE (psf) | MAXIMUM NOMINAL (ALLOWABLE) WIND SPEED, V_{asd}^4 (mph) | | |
|----------------------|---|---|-------|---------------------------------------|---|-----|-----|
| | | Edges | Field | | Wind Exposure Category | | |
| | | | | | B | C | D |
| $\frac{3}{8}$ | 16 | 6 | 12 | 32 | 110 | 90 | 90 |
| | | | 6 | 65 | 150 | 130 | 125 |
| | 24 | 6 | 12 | 22 | 90 | - | - |
| | | | 6 | 43 | 130 | 110 | 100 |
| $\frac{7}{16}$ | 16 | 6 | 12 | 32 | 110 | 90 | 90 |
| | | | 6 | 65 | 150 | 130 | 125 |
| | 24 | 6 | 12 | 22 | 90 | - | - |
| | | | 6 | 43 | 130 | 110 | 100 |
| $\frac{19}{32}$ | 16 | 6 | 12 | 32 | 110 | 90 | 90 |
| | | | 6 | 65 | 150 | 130 | 125 |
| | 24 | 6 | 12 | 22 | 90 | - | - |
| | | | 6 | 43 | 130 | 110 | 100 |

For SI: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 1.6 kph.

¹Tabulated values assume a fastener penetration of $1\frac{1}{2}$ inches into the wall studs.

²Wall studs must have a minimum specific gravity of 0.42.

³Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).

⁴Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-foot in Zone 5 with smallest effective area per Chapter 6 of ASCE 7-05, Section R301.2 of the 2009/2012 IRC, and Section 1609.1.1 of the 2009 IBC.

TABLE 5b—PANEL SIDING - MAXIMUM ULTIMATE COMPONENT AND CLADDING DESIGN WIND SPEED, V_{ult} ¹

| PERFORMANCE CATEGORY | MAXIMUM WALL STUD SPACING ² (inches) | FASTENER SPACING ³ (inches o.c.) | | MAXIMUM ULTIMATE WIND PRESSURE (psf) | MAXIMUM ULTIMATE DESIGN WIND SPEED, V_{ult} ⁴ (mph) | | |
|----------------------|---|---|-------|--------------------------------------|--|-----|-----|
| | | Edges | Field | | Wind Exposure Category | | |
| | | | | | B | C | D |
| $\frac{3}{8}$ | 16 | 6 | 12 | 54 | 140 | 120 | 115 |
| | | | 6 | 108 | 200 | 160 | 160 |
| | 24 | 6 | 12 | 36 | 120 | - | - |
| | | | 6 | 72 | 160 | 140 | 130 |
| $\frac{7}{16}$ | 16 | 6 | 12 | 54 | 140 | 120 | 115 |
| | | | 6 | 108 | 200 | 160 | 160 |
| | 24 | 6 | 12 | 36 | 120 | - | - |
| | | | 6 | 72 | 160 | 140 | 130 |
| $\frac{19}{32}$ | 16 | 6 | 12 | 54 | 140 | 120 | 115 |
| | | | 6 | 108 | 200 | 160 | 160 |
| | 24 | 6 | 12 | 36 | 120 | - | - |
| | | | 6 | 72 | 160 | 140 | 130 |

For SI: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 1.6 kph.

¹Tabulated values assume a fastener penetration of $1\frac{1}{2}$ inches into the wall studs.

²Wall studs must have a minimum specific gravity of 0.42.

³Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).

⁴Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-foot height in Zone 5 with smallest effective area per Chapter 26 of ASCE 7-10 and Section 1609.1.1 of the 2012/2015 IBC.

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