

Joint Evaluation Report



ESR-1301

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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:

LOUISIANA-PACIFIC CORPORATION

EVALUATION SUBJECT:

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

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2018, 2015, 2012, 2009, 2006, and 2003 *International Building Code*® (IBC)
- 2018, 2015, 2012, 2009, 2006, and 2003 *International Residential Code*® (IRC)

For evaluation for compliance with codes adopted by the Los Angeles Department of Building and Safety (LADBS), see [ESR-1301 LABC and LARC Supplement](#).

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 2003/2006/2009/2012 IBC Section 2308.9.3 and 2003/2006 IRC Section R602.10, or the WSP Method as specified in 2018 and 2015 IBC Section 2308.6 and 2009/2012/2015/2018 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 PS 2-compliant wood-based sheathing in accordance with 2003/2006 IBC Section 2306.4.1, and 2009/2012/2015/2018 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 5, 6, 7, 8, 9¹/₂ and 12 inches (127, 152, 178, 203, 241 and 305 mm); categories ³/₈ and ⁷/₁₆; and lengths up to 16 feet (4877 mm). The 8-inch-wide (203 mm), 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 available in lengths up to 18 feet (5486 mm). LP® SmartSide® Strand Substrate Panel Siding is available in ³/₈, ⁷/₁₆, and ¹⁹/₃₂ categories. The 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), or no groove. The 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) or no groove. The ¹⁹/₃₂ category panel has grooves spaced at 8 inches (203 mm), with a minimum thickness at the groove of 0.311 inch (8 mm) and a minimum shiplap thickness of 0.194 inch (5 mm).

LP® SmartSide® Vertical Siding is a narrow width panel siding and is available in ³/₈ category, nominal width of 16 inches (406 mm), and 16 feet (4877 mm) in length. The vertical siding can only be installed vertically.

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 2018 and 2015 IBC Section 2308.6 and 2018 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 2009/2012/2015/2018 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 $3/8$ category siding and a maximum of 24 inches (610 mm) on center for $7/16$ 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, $3/4$ inch (19 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 1 inch (25 mm).

Nails must be of sufficient length to penetrate a minimum of $1\frac{1}{2}$ inches (38 mm) and 2 inches (51 mm), respectively, for 0.113-inch and 0.092-inch nails, through the sheathing and into framing at each stud location.

LP® SmartSide® lap siding, when installed vertically, shall be installed over a minimum $7/16$ category wood structural panel sheathing meeting DOC PS 1 or DOC PS 2 requirements, and shall be covered by a batten at the siding joint or shall be overlapped with another vertical lap siding in accordance with the recommendations provided by the manufacturer, as shown in Figures 1 through 4. Lap siding installed vertically can only span one floor plate-to-plate. Each vertical application shall not span beyond one floor to ceiling distance, or one floor to top of gable distance.

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.

LP® SmartSide® Vertical Siding shall be installed over a minimum $7/16$ category wood structural sheathing meeting DOC PS 1 or DOC PS 2 requirements, and shall be covered by a batten at the panel joint in accordance with the recommendations provided by the manufacturer, as shown in Figures 2, 5, and 6. Vertical Siding can only span one floor plate-to-plate. Each vertical application shall not span beyond one floor to ceiling distance, or one floor to top of gable distance.

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. Design wind loads for LP® SmartSide® Strand Substrate Lap Siding when installed over the facer of structural insulated panels (SIPs) are listed in Table 4. Design wind loads for LP® SmartSide® Strand Substrate Vertical Siding and Lap Siding applied vertically are listed in Table 5.

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 Bracing Method 3 specified in Section 2308.9 of the 2012, 2009, 2006 and 2003 IBC and Section R602.10 of the IRC, or the WSP Method as specified in 2018 and 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 Dawson Creek, British Columbia (Mill No. 402); Hayward, Wisconsin (Mill No. 357); Newberry, Michigan (Mill No. 416); Tomahawk, Wisconsin (Mill No. 435); Two Harbors, Minnesota (Mill No. 399); and Swan Valley, Minnesota, Manitoba, Canada (Mill No. 457); under a quality control program with inspections by APA – The Engineered Wood Association and ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Treated-engineered-wood Siding (AC321), dated May 2019.

7.0 IDENTIFICATION

- 7.1 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).
- 7.2 The report holder's contact information is the following:

LOUISIANA-PACIFIC CORPORATION
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NASHVILLE, TENNESSEE 37219
(888) 820-0325
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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^{1,2,3,7,8}

PERFORMANCE CATEGORY	MINIMUM NAIL PENETRATION IN FRAMING (inches)	PANELS APPLIED DIRECTLY TO FRAMING				PANELS APPLIED OVER 5/8-INCH GYPSUM SHEATHING					
		Nail Size (Common or Galvanized Box) ^{7,8}	Nail Spacing at Panel Edges (inches)				Nail Size (Common or Galvanized Box) ^{7,8}	Nail Spacing at Panel Edges (inches)			
			6	4	3	2 ⁴		6	4	3	2 ⁴
5/16 ^{5,6}	1-1/4	6d	180	270	350	450	8d	180	270	350	450
3/8 ^{5,6}			200	300	390	510		200	300	390	510
3/8 ^{5,6}	1-1/2	8d	220	320	410	530	10d	260	380	490 ⁴	640
7/16 ⁵			240	350	450	585		260	380	490 ⁴	640
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 earthquake and must be reduced by 25 percent for normal duration of loading. For wind load applications, the values in the table shall be permitted to be multiplied by 1.4.

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 1 3/8 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 the second nail must be placed 1 inch from the panel edge, not 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.

⁸Fasteners shall be carbon steel, hot-dipped galvanized plain (smooth) shank box or common nails and meet dimensions as specified in ASTM F1667.

**TABLE 2A—LAP SIDING INSTALLED HORIZONTALLY WITH 0.113-INCH-DIAMETER NAILS
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	5, 6, 7	80	170	150	140
		8	74	170	145	130
		9-1/2	61	150	130	120
		12	47	130	110	105
7/16	16	6, 7	80	170	150	140
		8	74	170	145	130
		9-1/2	65	150	130	125
		12	47	130	110	105
	24	6	69	150	140	130
		7	58	150	130	110
		8	49	140	120	110
		9-1/2	41	125	105	100
		12	31	110	90	85

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. Fasteners shall be hot dipped galvanized plain (smooth) shank, carbon steel nails, with a minimum shank diameter of 0.113 inch, and long enough to penetrate structural framing or wood structural panels and structural framing a minimum of 2 inches. Lap siding is not a bracing material.

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 INSTALLED HORIZONTALLY WITH 0.113-INCH-DIAMETER NAILS
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
3/8	16	5, 6, 7	133	200 ⁵	180	180
		8	123	200 ⁵	180	160
		9-1/2	102	200 ⁵	160	150
		12	79	180	150	140
7/16	16	6, 7	133	200 ⁵	180	180
		8	123	200 ⁵	180	160
		9-1/2	102	200 ⁵	160	150
		12	79	180	150	140
	24	6	115	200 ⁵	180	160
		7	96	180	160	150
		8	85	180	150	140
		9-1/2	68	160	140	130
		12	52	140	120	110

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. Fasteners shall be hot dipped galvanized plain (smooth) shank, carbon steel nails, with a minimum shank diameter of 0.113 inch, and long enough to penetrate structural framing or wood structural panels and structural framing a minimum of 2 inches. Lap siding is not a bracing material.

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 ASCE 7-16, Section R301.2.1 of the 2015/2018 IRC, and Section 1609.1.1 of the 2012/2015/2018 IBC.

⁵Table R301.2(2) of the 2015/2018 IRC is limited to a maximum ultimate design wind speed, V_{ult} , of 180 mph.

**TABLE 2C—LAP SIDING INSTALLED HORIZONTALLY WITH 0.092-INCH-DIAMETER NAILS
 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	5	78	170	150	130
		6	63	150	130	125
		7	52	145	120	110
		8	45	130	110	105
		9-1/2	37	120	100	90
		12	28	105	90	--
7/16	16	6	63	150	130	125
		7	52	145	120	110
		8	45	130	110	105
		9-1/2	37	120	100	90
		12	28	105	90	--
	24	6	42	130	110	100
		7	35	120	100	90
		8	30	110	90	85
		9-1/2	25	100	85	--
		12	19	85	--	--

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. Fasteners shall be hot dipped galvanized plain (smooth) shank, carbon steel nails, with a minimum shank diameter of 0.092 inch, and long enough to penetrate structural framing or wood structural panels and structural framing a minimum of 1 1/2 inches. Lap siding is not a bracing material.

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 2D—LAP SIDING INSTALLED HORIZONTALLY WITH 0.092-INCH-DIAMETER NAILS
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
3/8	16	5	131	200 ⁵	180	180
		6	104	200 ⁵	160	160
		7	87	180	160	140
		8	75	160	140	130
		9-1/2	61	150	130	120
		12	47	140	115	--
7/16	16	6	104	200 ⁵	160	160
		7	87	180	160	140
		8	75	160	140	130
		9-1/2	61	150	130	120
		12	47	140	115	--
	24	6	70	160	140	130
		7	58	150	130	120
		8	50	140	120	110
		9-1/2	41	130	110	--
		12	32	110	--	--

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. Fasteners shall be hot dipped galvanized plain (smooth) shank, carbon steel nails, with a minimum shank diameter of 0.092 inch, and long enough to penetrate structural framing or wood structural panels and structural framing a minimum of 2 inches. Lap siding is not a bracing material.

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 ASCE 7-16, Section R301.2.1 of the 2015/2018 IRC, and Section 1609.1.1 of the 2012/2015/2018 IBC.

⁵Table R301.2(2) of the 2015/2018 IRC is limited to a maximum ultimate design wind speed, V_{ult} , of 180 mph.

**TABLE 3A—PANEL SIDING INSTALLED VERTICALLY WITH 0.113-INCH NAILS
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
3/8	16	6	12	43	130	110	100
			6	80	170	150	140
	24	6	12	29	105	90	--
			6	58	150	130	110
7/16	16	6	12	43	130	110	100
			6	80	170	150	140
	24	6	12	29	105	90	--
			6	58	150	130	110
19/32	16	6	12	43	130	110	100
			6	80	170	150	140
	24	6	12	29	105	90	-
			6	58	150	130	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.

³Fasteners shall be hot dipped galvanized plain (smooth) shank, carbon steel nails, with a minimum shank diameter of 0.113 inch, and long enough to penetrate structural framing or wood structural panels and structural framing a minimum of 2 inches.

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 INSTALLED VERTICALLY WITH 0.113-INCH NAILS
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
3/8	16	6	12	72	160	140	130
			6	133	200 ⁵	180	180
	24	6	12	48	140	115	--
			6	96	180	160	150
7/16	16	6	12	72	160	140	130
			6	133	200 ⁵	180	180
	24	6	12	48	140	115	--
			6	96	180	160	150
19/32	16	6	12	72	160	140	130
			6	133	200 ⁵	180	180
	24	6	12	48	140	115	--
			6	96	180	160	150

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

¹Fasteners shall be a hot dipped galvanized plain (smooth) shank nail, with a minimum shank diameter of 0.113 inch, and long enough to penetrate structural framing or wood structural panels and structural framing a minimum of 2 inches. Tabulated 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.

³Fasteners shall be hot dipped galvanized plain (smooth) shank, carbon steel nails, with a minimum shank diameter of 0.113 inch, and long enough to penetrate structural framing or wood structural panels and structural framing a minimum of 2 inches.

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 ASCE 7-16, and Section 1609.1.1 of the 2012/2015/2018 IBC.

⁵Table R301.2(2) of the 2015/2018 IRC is limited to a maximum ultimate design wind speed, V_{ult} , of 180 mph.

**TABLE 3C—PANEL SIDING INSTALLED VERTICALLY WITH 0.092-INCH NAILS
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
3/8	16	6	12	26	100	85	--
			6	52	145	120	110
	24	6	12	17	85	--	--
			6	35	120	100	90
7/16	16	6	12	26	100	85	--
			6	52	145	120	110
	24	6	12	17	85	--	--
			6	35	120	100	90
19/32	16	6	12	26	100	85	--
			6	52	145	120	110
	24	6	12	17	85	--	--
			6	35	120	100	90

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.

³Fasteners shall be hot dipped galvanized plain (smooth) shank, carbon steel nails, with a minimum shank diameter of 0.092 inch, and long enough to penetrate structural framing or wood structural panels and structural framing a minimum of 1½ inches. Configuration cannot be used for lateral bracing due to nail size.

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 3D—PANEL SIDING INSTALLED VERTICALLY WITH 0.092-INCH NAILS
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
3/8	16	6	12	44	130	110	--
			6	87	180	160	140
	24	6	12	29	--	--	--
			6	58	150	130	120
7/16	16	6	12	44	130	110	--
			6	87	180	160	140
	24	6	12	29	--	--	--
			6	58	150	130	120
19/32	16	6	12	44	130	110	--
			6	87	180	160	140
	24	6	12	29	--	--	--
			6	58	150	130	120

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.

³Fasteners shall be hot dipped galvanized plain (smooth) shank, carbon steel nails, with a minimum shank diameter of 0.092 inch, and long enough to penetrate structural framing or wood structural panels and structural framing a minimum of 1½ inches. Configuration cannot be used for lateral bracing due to nail size.

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 ASCE 7-16, and Section 1609.1.1 of the 2012/2015/2018 IBC.

⁵Table R301.2(2) of the 2015/2018 IRC is limited to a maximum ultimate design wind speed, V_{ult} , of 180 mph.

**TABLE 4A—LAP SIDING INSTALLED HORIZONTALLY TO SIPS
MAXIMUM NOMINAL (ALLOWABLE) COMPONENT AND CLADDING DESIGN WIND SPEED, V_{asd} ^{1,2}**

PERFORMANCE CATEGORY	MAXIMUM RING SHANK NAIL SPACING ³ (inches)	MAXIMUM WOOD SCREW SPACING ⁴ (inches)	SIDING WIDTH (inches)	MAXIMUM ALLOWABLE WIND PRESSURE (psf)	MAXIMUM NOMINAL (ALLOWABLE) WIND SPEED, V_{asd} ⁵ (mph)		
					Wind Exposure Category		
					B	C	D
3/8	8	12	5	80	170	150	140
			6	80	170	150	140
			7	72	170	145	130
			8	63	150	130	125
			9-1/2	54	145	125	110
			12	40	125	105	90
7/16	12	16	6	58	150	130	120
			7	50	140	120	110
			8	42	130	110	100
			9-1/2	36	120	100	90
			12	27	105	85	--

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

¹The facer of the structural insulated panels (SIPs) shall be 7/16 Performance Category or thicker OSB sheathing meeting DOC PS 2 requirements.

²The tabulated values represent the capacity of the LP® Lap Siding installed in accordance with the requirements of this table. The tabulated wind speed shall not exceed the SIP capacity for wind load resistance.

³One ring shank fastener located 3/4 inch from the top edge of the siding. Each successive course of lap siding must overlap a minimum of 1 inch. Fasteners shall be a hot dipped galvanized ring shank, carbon steel nails, with a minimum shank diameter of 0.092 inch. Length shall be long enough to fully penetrate wood structural facer panel.

⁴One #8 wood screw located 3/4 inch from the top edge of the siding may be used. The wood screws must have a minimum shank diameter of 0.164 inch. Length shall be long enough to fully penetrate wood structural facer panel.

⁵Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-ft height in Zone 5 with smallest effective area in accordance with Chapter 6 of ASCE 7-05, Section R301.2.1 of the 2009/2012 IRC, and Section 1609.1.1 of the 2009 IBC.

**TABLE 4B—LAP SIDING INSTALLED HORIZONTALLY TO SIPS
MAXIMUM ULTIMATE COMPONENT AND CLADDING DESIGN WIND SPEED, $V_{ult}^{1,2}$**

PERFORMANCE CATEGORY	MAXIMUM RING SHANK NAIL SPACING ³ (inches)	MAXIMUM WOOD SCREW SPACING ⁴ (inches)	SIDING WIDTH (inches)	MAXIMUM ULTIMATE WIND PRESSURE (psf)	MAXIMUM ULTIMATE DESIGN WIND SPEED, V_{ult}^5 (mph)		
					Wind Exposure Category		
					B	C	D
3/8	8	12	5	133	200 ⁶	180	180
			6	133	200 ⁶	180	180
			7	119	200 ⁶	160	160
			8	105	200 ⁶	160	160
			9-1/2	90	180	160	150
			12	67	160	140	120
7/16	12	16	6	97	200 ⁶	160	150
			7	79	180	150	140
			8	70	160	140	130
			9-1/2	60	150	130	120
			12	45	130	115	--

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

¹The facer of the structural insulated panels (SIPs) shall be 7/16 Performance Category or thicker OSB sheathing meeting DOC PS 2 requirements.

²The tabulated values represent the capacity of the LP Lap Siding installed in accordance with the requirements of this table. The tabulated wind speed shall not exceed the SIP capacity for wind load resistance.

³One ring shank fastener located ³/₄ inch from the top edge of the siding. Each successive course of lap siding must overlap a minimum of 1 inch. Fasteners shall be a hot dipped galvanized ring shank, carbon steel nails, with a minimum shank diameter of 0.092 inch. Length shall be long enough to fully penetrate wood structural facer panel.

⁴One #8 wood screw located ³/₄ inch from the top edge of the siding may be used. The wood screws must have a minimum shank diameter of 0.164 inch. Length shall be long enough to fully penetrate wood structural facer panel.

⁵Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-ft height in Zone 5 with smallest effective area in accordance with Chapter 26 of ASCE 7-10 and ASCE 7-16, Section R301.2.1 of the 2015/2018 IRC, and Section 1609.1.1 of the 2012/2015/2018 IBC.

⁶Table R301.2(2) of the 2015/2018 IRC is limited to a maximum ultimate design wind speed, V_{ult} , of 180 mph.

**TABLE 5A—VERTICAL SIDING OR LAP SIDING INSTALLED VERTICALLY
MAXIMUM NOMINAL (ALLOWABLE) COMPONENT AND CLADDING DESIGN WIND SPEED, V_{asd}^1**

PERFORMANCE CATEGORY	SIDING TYPE	SIDING WIDTH (inches)	FASTENER EDGE SPACING (inches o.c.)	MAXIMUM ALLOWABLE WIND PRESSURE (psf)	MAXIMUM NOMINAL (ALLOWABLE) WIND SPEED, V_{asd}^6 (mph)		
					Wind Exposure Category		
					B	C	D
3/8	Vertical Siding	16 ²	6 ⁴	80	170	150	140
	Lap Siding Installed Vertically	5 ³	12 ⁵	80	170	150	140
		6 ³		72	170	145	130
		7 ³		62	150	130	120
		8 ³		54	145	125	110
		9-1/2 ³		46	130	110	105
		12 ³		36	120	100	90
7/16	Lap Siding Installed Vertically	6 ³	12 ⁵	72	170	145	130
		7 ³		62	150	130	120
		8 ³		54	145	125	110
		9-1/2 ³		46	130	110	105
		12 ³		36	120	100	90

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

¹Siding shall be installed over 7/16 Performance Category or thicker wood structural panel sheathing meeting DOC PS 1 or DOC PS 2 requirements.

²Vertical Siding installed in accordance with Figures 2, 5, and 6.

³Lap Siding installed vertically in accordance with Figure 1 through 4.

⁴Fasteners must be hot dipped galvanized ring shank, carbon steel nails with a minimum shank diameter of 0.092 inch. Length shall be long enough to fully penetrate wood structural panel wall sheathing. Fasteners must be spaced a maximum of 6 inches o.c. along the siding perimeter in accordance with Figures 5 and 6.

⁵Fasteners must be hot dipped galvanized ring shank, carbon steel nails with a minimum shank diameter of 0.092 inch. Length shall be long enough to fully penetrate wood structural panel wall sheathing. Fasteners must be spaced a maximum of 12 inches o.c. along alternating edges of the length of the trim/batten in accordance with Figures 1 and 4.

⁶Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-ft height in Zone 5 with smallest effective area in accordance with Chapter 6 of ASCE 7-05, Section R301.2.1 of the 2009/2012 IRC, and Section 1609.1.1 of the 2009 IBC.

**TABLE 5B—VERTICAL SIDING OR LAP SIDING INSTALLED VERTICALLY
MAXIMUM ULTIMATE COMPONENT AND CLADDING DESIGN WIND SPEED, $V_{ult}^{1,2}$**

PERFORMANCE CATEGORY	SIDING TYPE	SIDING WIDTH (inches)	FASTENER EDGE SPACING (inches o.c.)	MAXIMUM ALLOWABLE WIND PRESSURE (psf)	MAXIMUM NOMINAL (ALLOWABLE) WIND SPEED, V_{asd}^6 (mph)		
					Wind Exposure Category		
					B	C	D
3/8	Vertical Siding	16 ²	6 ⁴	133	200	180	180
	Lap Siding Installed Vertically	5 ³	12 ⁵	133	200	180	180
		6 ³		120	200	180	160
		7 ³		103	200	160	160
		8 ³		90	180	160	150
		9-1/2 ³		76	160	150	130
		12 ³		60	150	130	120
7/16	Lap Siding Installed Vertically	6 ³	12 ⁵	120	200	180	160
		7 ³		103	200	160	160
		8 ³		90	180	160	150
		9-1/2 ³		76	160	150	130
		12 ³		60	150	130	120

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

¹Siding shall be installed over 7/16 Performance Category or thicker wood structural panel sheathing meeting DOC PS 1 or DOC PS 2 requirements.

²Vertical Siding installed in accordance with Figures 2, 5, and 6.

³Lap Siding installed vertically in accordance with Figure 1 through 4.

⁴Fasteners must be hot dipped galvanized ring shank, carbon steel nails with a minimum shank diameter of 0.092 inch. Length shall be long enough to fully penetrate wood structural panel wall sheathing. Fasteners must be spaced a maximum of 6 inches o.c. along the siding perimeter in accordance with Figures 5 and 6.

⁵Fasteners must be hot dipped galvanized ring shank, carbon steel nails with a minimum shank diameter of 0.092 inch. Length shall be long enough to fully penetrate wood structural panel wall sheathing. Fasteners must be spaced a maximum of 12 inches o.c. along alternating edges of the length of the trim/batten in accordance with Figures 1 and 4.

⁶Three-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 ASCE 7-16, and Section 1609.1.1 of the 2012/2015/2018 IBC.

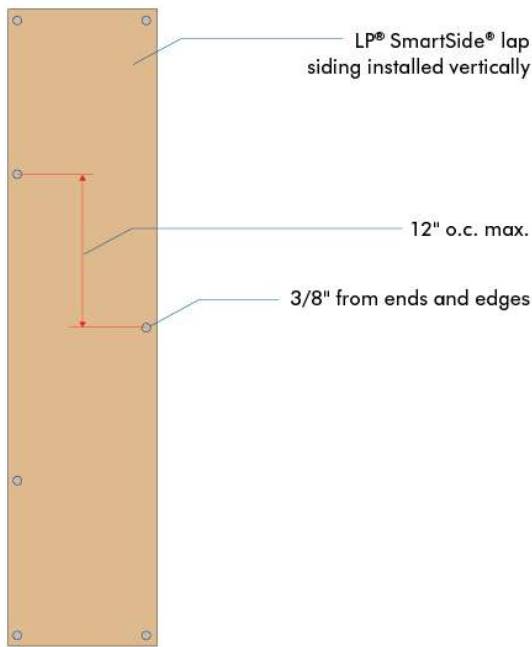


FIGURE 1—LAP SIDING INSTALLED VERTICALLY

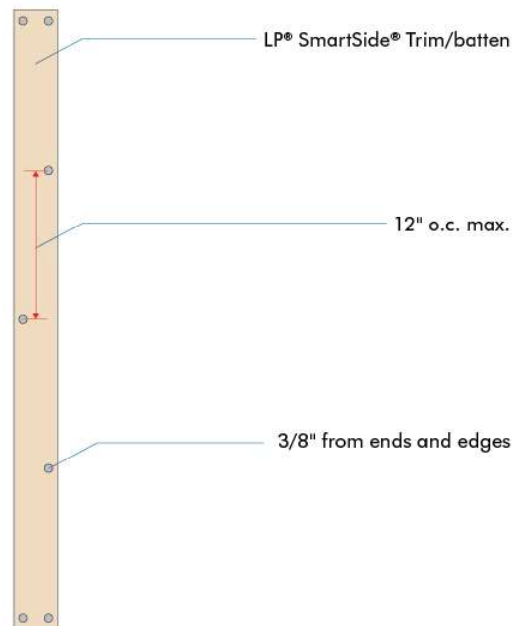


FIGURE 2—LP® SMARTSIDE® TRIM/BATTEN

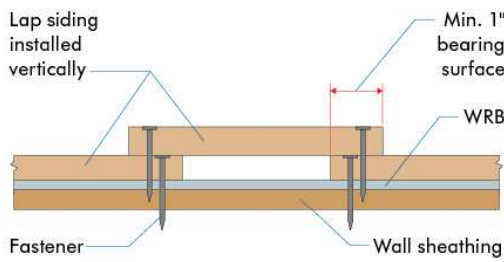


FIGURE 3—LAP SIDING ATTACHMENT DETAIL

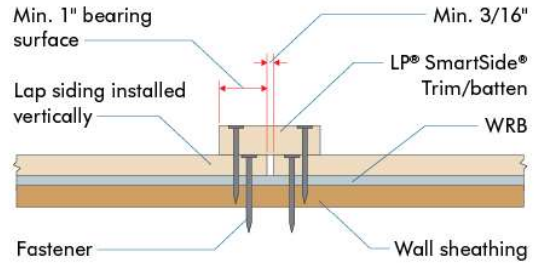


FIGURE 4—LP® SMARTSIDE® TRIM/BATTEN ATTACHMENT DETAIL

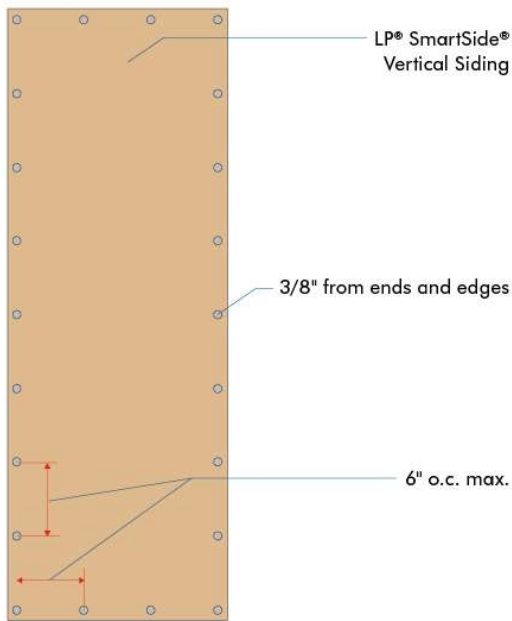


FIGURE 5—VERTICAL SIDING

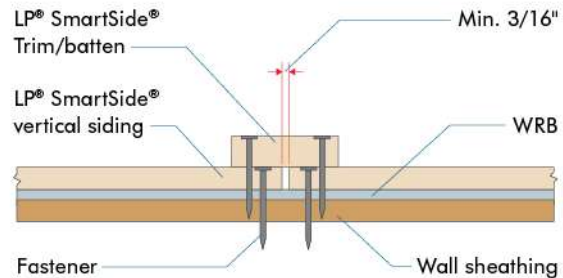


FIGURE 6—VERTICAL SIDING ATTACHMENT DETAIL

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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:

LOUISIANA-PACIFIC CORPORATION

EVALUATION SUBJECT:

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

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that LP® SmartSide® Strand Substrate Lap Siding and LP® SmartSide® Strand Substrate Panel Siding, described in ICC-ES evaluation report [ESR-1301](#), have also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

- 2020 *City of Los Angeles Building Code* (LABC)
- 2020 *City of Los Angeles Residential Code* (LARC)

2.0 CONCLUSIONS

The LP® SmartSide® Strand Substrate Lap Siding and LP® SmartSide® Strand Substrate Panel Siding, described in Sections 2.0 through 7.0 of the evaluation report [ESR-1301](#), comply with the LABC Chapters 14 and 23, and the LARC, and are subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The LP® SmartSide® Strand Substrate Lap Siding and LP® SmartSide® Strand Substrate Panel Siding described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report [ESR-1301](#).
- The design, installation, conditions of use and identification are in accordance with the 2018 *International Building Code*® (IBC) and 2018 *International Residential Code* (IRC) provisions noted in the evaluation report [ESR-1301](#).
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16 and 17, as applicable.
- Panels must be used only in locations where combustible materials are permitted in the 2020 LABC.
- Under the LARC, an engineered design in accordance with LARC Section R301.1.3 must be submitted.
- The LP® SmartSide® Strand Substrate Lap Siding and LP® SmartSide® Strand Substrate Panel Siding have not been evaluated under the LABC Chapter 7A or the LARC Section R337 for use in the exterior design and construction of new buildings located in any Fire Hazard Severity Zone within State Responsibility Areas of any Wildland – Urban Interface Area.

This supplement expires concurrently with the evaluation report, reissued March 2022.