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ESR-3090

Issued 06/2017

This report is subject to renewal 06/2019.

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES

SECTION: 06 16 00—SHEATHING

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION

SECTION: 07 46 26—HARDBOARD SIDING

REPORT HOLDER:

LOUISIANA-PACIFIC CORPORATION

414 UNION STREET, SUITE 2000
NASHVILLE, TENNESSEE 37219

EVALUATION SUBJECT:

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



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Issued June 2017

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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 26—Hardboard Siding

REPORT HOLDER:

LOUISIANA-PACIFIC CORPORATION

414 UNION STREET, SUITE 2000

NASHVILLE, TENNESSEE 37219

(888) 820-0325

www.lpcorp.com

EVALUATION SUBJECT:

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

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2015 and 2012 International Building Code® (IBC)
- 2015 and 2012 International Residential Code® (IRC)

Property evaluated:

- Exterior Siding
- Structural (Wind)

2.0 USES

LP SmartSide Fiber Substrate Lap Siding and LP SmartSide Fiber Substrate Panel Siding are hardboard siding used as exterior wall coverings where combustible materials are permitted by the IBC and IRC.

LP SmartSide Fiber Substrate Panel Siding may be used as a part of a hardboard panel siding (HPS) bracing method when installed in accordance with 2015 IBC Section 2308.6 (bracing method 8 of 2012 IBC Section 2308.9.3) and 2015 and 2012 IRC Section R602.10.

3.0 DESCRIPTION

LP SmartSide Fiber Substrate Lap Siding and LP SmartSide Fiber Substrate Panel Siding comply with ANSI A135.6 as required by the IBC and IRC for hardboard siding. The lap and panel siding is factory coated with a primer for preparation of field applied paint. See Tables 1A, 2A, and 3A for product names, edge type, surface pattern, width, length, and cross section profile.

4.0 DESIGN AND INSTALLATION

The lap and panel siding must be installed with a minimum 6 inches (15.2 cm) of clearance from finished grade and must be installed with an approved water-resistant barrier as required by the applicable code.

The prescriptive requirements of the applicable code may be used since the lap and panel products comply with ANSI A135.6. When installed in accordance with this report, the maximum wind loads in Tables 1B, 1C, 2B, 2C, 3B, and 3C may be used.

5.0 CONDITIONS OF USE

The lap and 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 The lap and panel siding must be installed in accordance with this evaluation report; the manufacturer's published installation instructions, and the applicable code. The instructions within this report govern if there are any conflicts between the manufacturer's published installation instructions and this report. The manufacturer's published installation instructions must be available at the jobsite at all times during installation.

5.2 The lap and panel siding is manufactured by Louisiana-Pacific Corporation in Roaring River, North Carolina, under a quality-control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED


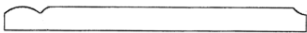

6.1 Reports of tests per ANSI A135.6.

6.2 Reports of tests and wind analysis per Section 3.2.6 of the ICC-ES Acceptance Criteria for Treated-Engineered-Wood Siding (AC321), dated October 2005 (editorially revised April 2015).

7.0 IDENTIFICATION

Each package containing the LP siding products described in this report is identified by a stamp bearing the manufacturer's name (Louisiana-Pacific), the product name, the address of the manufacturing plant (Roaring River, North Carolina), the date of manufacture and the evaluation report number (ESR-3090). Additionally, each package must bear a note indicating conformance to ANSI A135.6-2012.

TABLE 1A—LAP SIDING PRODUCTS^{1,2}

| PRODUCT NAMES | EDGE TYPE | SURFACE PATTERN | NOMINAL WIDTH (inch) | MAX. LENGTH (feet) | CROSS SECTIONAL PROFILE |
|-------------------------------------|-----------|-----------------|----------------------|--------------------|---|
| 76 Series Fiber Substrate Lap | Square | Smooth Finish | 6, 8, 12 | 16 |  |
| | | Cedar Texture | 6, 8, 9.5, 12 | | |
| Colonial Beaded Fiber Substrate Lap | Square | Smooth Finish | 8, 9 | 16 |  |
| | | Cedar Texture | 8 | | |
| Shake Fiber Substrate Lap | Square | Cedar Texture | 12 | 4 |  |

For SI: 1 inch = 25.4 mm, 1 foot = 0.3048 meter, 1 psf = 47.88 Pa, 1 mph = 1.6 kph

¹Minimum actual thickness of 0.375 inch

²Nominal Width (actual minimum width); 12 inches (11.84 inches), 9.5 inches (9.47 inches), 9 inches (8.94 inches), 8 inches (7.84 inches), and 6 inches (5.84 inches)

TABLE 1B—MAXIMUM COMPONENT & CLADDING DESIGN WIND SPEEDS INSTALLED DIRECTLY TO WOOD STUDS FOR LAP SIDING PRODUCTS IN TABLE 1A^{1,2,3,4}

| MAX. STUD SPACING (inches o.c.) | NOMINAL SIDING WIDTH (inches) | MIN. FASTENER STUD PENETRATION (inches) | MAX. ALLOWABLE WIND PRESSURE (psf) | MAX. ALLOWABLE WIND SPEED, V _{ASD} (mph) | | | MAX. ULTIMATE WIND SPEED, V _{ULT} (mph) | | |
|---------------------------------|-------------------------------|---|------------------------------------|---|-----|-----|--|-----|-----|
| | | | | WIND EXPOSURE CATEGORY | | | WIND EXPOSURE CATEGORY | | |
| | | | | B | C | D | B | C | D |
| 16 | 6 | 1.5 | 77 | 175 | 150 | 135 | 230 | 190 | 175 |
| | | 2.0 | 83 | 185 | 155 | 140 | 240 | 200 | 185 |
| | 8 | 1.5 | 55 | 150 | 125 | 115 | 195 | 160 | 150 |
| | | 2.0 | 60 | 155 | 130 | 120 | 200 | 170 | 155 |
| | 9 | 1.5 | 48 | 140 | 115 | 105 | 180 | 150 | 140 |
| | | 2.0 | 52 | 145 | 120 | 110 | 185 | 160 | 145 |
| | 9.5 | 1.5 | 35 | 120 | 100 | 90 | 155 | 130 | 120 |
| | | 2.0 | 38 | 125 | 105 | 95 | 160 | 135 | 125 |
| | 12 | 1.5 | 35 | 120 | 100 | 90 | 155 | 130 | 120 |
| | | 2.0 | 38 | 125 | 105 | 95 | 160 | 135 | 125 |

¹Wood studs must have a minimum specific gravity of 0.42.

²The face of the lap siding must be overlapped a minimum of 1 inch.

³Fasteners must be hot dipped galvanized plain (smooth) shank nails with a minimum head diameter of 0.270-inch, and a minimum shank diameter of 0.113 inch.

Fasteners must be installed per the following:

- ³/₈ inch from the ends
- 2 fasteners per stud (¹/₄ inch from the top edge and ³/₄ inch from the bottom edge)

⁴Wind speeds based on a building height of 30-feet; Zone 5; Importance Factor of 1.0; Topographic Factor of 1.0; and an Internal Pressure Coefficient of +/- 0.18, as defined in ASCE 7.

TABLE 1C—MAXIMUM COMPONENT & CLADDING DESIGN WIND SPEEDS INSTALLED DIRECTLY TO WOOD STRUCTURAL PANELS FOR LAP SIDING PRODUCTS IN TABLE 1A^{1,2,3}

| MAX. STUD SPACING (inches o.c.) | NOMINAL SIDING WIDTH (inches) | FASTENERS SPACING (inches o.c.) | MIN. FASTENER PENETRATION BEYOND SHEATHING (inch) | MAX. ALLOWABLE LOADS (psf) | MAX. ALLOWABLE WIND SPEED, V _{ASD} (mph) | | | MAX. ULTIMATE WIND SPEED, V _{ULT} (mph) | | |
|---------------------------------|-------------------------------|---------------------------------|---|----------------------------|---|-----|-----|--|-----|-----|
| | | | | | WIND EXPOSURE CATEGORY | | | WIND EXPOSURE CATEGORY | | |
| | | | | | B | C | D | B | C | D |
| 16 | 6 | 12 | 1/4 | 86 | 185 | 160 | 145 | 240 | 205 | 185 |
| | 8 | | | 62 | 160 | 135 | 120 | 205 | 170 | 160 |
| | 9 | | | 54 | 145 | 125 | 115 | 190 | 160 | 150 |
| | 9.5 | | | 39 | 125 | 105 | 95 | 160 | 135 | 125 |
| | 12 | | | 39 | 125 | 105 | 95 | 160 | 135 | 125 |

¹Wood structural panel wall sheathing must be minimum ⁷/₁₆ Category complying with DOC PS 1 or PS 2. The attachment of wood structural panels to the supporting structure is outside the scope of this report.

²Fasteners must be hot dipped galvanized ring shank nails with a minimum head diameter of 0.221 inch, and a minimum shank diameter of 0.092 inch. Fasteners must be installed per the following:

- ³/₈ inch from the ends
- 2 fasteners per fastener spacing (¹/₄ inch from the top edge and ³/₄ inch from the bottom edge)

³Wind speeds based on a building height of 30 feet; Zone 5; Importance Factor of 1.0; Topographic Factor of 1.0; and an Internal Pressure Coefficient of +/- 0.18, as defined in ASCE 7.

TABLE 2A—LAP SIDING PRODUCTS^{1,2}

| PRODUCT NAMES | EDGE TYPE | SURFACE PATTERN | NOMINAL WIDTH (inch) | MAX. LENGTH (feet) | CROSS SECTIONAL PROFILE |
|---|---------------|-----------------|----------------------|--------------------|-------------------------|
| 120 Series Self-Aligning Fiber Substrate Lap | Self-Aligning | Cedar Texture | 8 | 16 | |
| 12" Bold Profiles Triple 4" Fiber Substrate Lap | Shiplap | Cedar Texture | 12 | 16 | |
| 12" Bold Profiles Double 5" Fiber Substrate Lap | | Cedar Texture | | | |
| 16" Bold Profiles Quad 4" Fiber Substrate Lap | | Cedar Texture | 16 | 16 | |
| 16" Bold Profiles Triple 5" Fiber Substrate Lap | | Cedar Texture | | | |
| 16" Bold Profiles Double 8" Fiber Substrate Lap | | Cedar Texture | | | |
| | | Cedar Texture | | | |

For SI: 1 inch = 25.4 mm, 1 foot = 0.3048 meter, 1 psf = 47.88 Pa, 1 mph = 1.6 kph

¹Minimum actual thickness of 0.450 inch

²Nominal Width (actual minimum width); 16 inches (15.94 inches), 12 inches (11.86 inches), and 8 inches (7.84 inches)

TABLE 2B—MAXIMUM COMPONENT & CLADDING DESIGN WIND SPEEDS INSTALLED DIRECTLY TO WOOD STUDS FOR LAP SIDING PRODUCTS IN TABLE 2A^{1,2,3,4}

| MAX. STUD SPACING (inches o.c.) | NOMINAL SIDING WIDTH (inches) | MIN. FASTENER STUD PENETRATION (inches) | MAX. ALLOWABLE WIND PRESSURE (psf) | MAX. ALLOWABLE WIND SPEED, V _{ASD} (mph) | | | MAX. ULTIMATE WIND SPEED, V _{ULT} (mph) | | |
|---------------------------------|-------------------------------|---|------------------------------------|---|-----|-----|--|-----|-----|
| | | | | WIND EXPOSURE CATEGORY | | | WIND EXPOSURE CATEGORY | | |
| | | | | B | C | D | B | C | D |
| 16 | 8 | 1.5 | 55 | 150 | 125 | 115 | 195 | 160 | 150 |
| | | 2.0 | 60 | 155 | 130 | 120 | 200 | 170 | 155 |
| | 12 | 1.5 | 98 | 200 | 170 | 155 | 260 | 215 | 200 |
| | | 2.0 | 98 | 200 | 170 | 155 | 260 | 215 | 200 |
| | 16 | 1.5 | 77 | 175 | 150 | 135 | 230 | 190 | 175 |
| | | 2.0 | 92 | 195 | 165 | 150 | 250 | 210 | 195 |

¹Wood studs must have a minimum specific gravity of 0.42.

²The face must be overlapped a minimum of 1 inch.

³Fasteners must be hot dipped galvanized plain (smooth) shank nails with a minimum head diameter of 0.270 inch, and a minimum shank diameter of 0.113 inch. Fasteners must be installed per the following:

- ³/₈ inch from the ends
- 8-inch wide siding, 2 fasteners per stud (¹/₄ inch from the top edge and ³/₄ inch from the bottom edge)
- 12- and 16-inch wide siding, 3 fasteners per stud (3 inches from the top edge, in the middle, and 1 ¹/₂ inches from the bottom edge)

⁴Wind speeds based on a building height of 30 feet; Zone 5; Importance Factor of 1; Topographic Factor of 1; and an Internal Pressure Coefficient of +/- 0.18, as defined in ASCE 7.

TABLE 2C—MAXIMUM COMPONENT & CLADDING DESIGN WIND SPEEDS INSTALLED DIRECTLY TO WOOD STRUCTURAL PANELS FOR LAP SIDING PRODUCTS IN TABLE 2A^{1,2,3,4}

| MAX. STUD SPACING (inches o.c.) | NOMINAL SIDING WIDTH (inches) | FASTENERS SPACING (inches o.c.) | MIN. FASTENER PENETRATION BEYOND SHEATHING (inch) | MAX. ALLOWABLE LOADS (psf) | MAX. ALLOWABLE WIND SPEED, V _{ASD} (mph) | | | MAX. ULTIMATE WIND SPEED, V _{ULT} (mph) | | |
|---------------------------------|-------------------------------|---------------------------------|---|----------------------------|---|-----|-----|--|-----|-----|
| | | | | | WIND EXPOSURE CATEGORY | | | WIND EXPOSURE CATEGORY | | |
| | | | | | B | C | D | B | C | D |
| 16 | 8 | 12 | 1/4 | 62 | 160 | 135 | 120 | 205 | 170 | 160 |
| | 12 | | | 98 | 200 | 170 | 155 | 260 | 215 | 200 |
| | 16 | | | 86 | 185 | 160 | 145 | 240 | 205 | 185 |

¹Wood structural panel wall sheathing must be minimum ⁷/₁₆ Category complying with DOC PS 1 or PS 2. The attachment of wood structural panels to the supporting structure is outside the scope of this report.

²The siding must be overlapped a minimum of 1 inch.

³Fasteners must be hot dipped galvanized ring shank nails with a minimum head diameter of 0.221 inch, and a minimum shank diameter of 0.092 inch. Fasteners must be installed per the following:

- ³/₈ inch from the ends
- 8-inch-wide siding, 2 fasteners per fastener spacing (¹/₄ inch from the top edge and ³/₄ inch from the bottom edge)
- 12- and 16-inch-wide siding, 3 fasteners per fastener spacing (3 inches from the top edge, in the middle, and 1 ¹/₂ inches from the bottom edge)

⁴Wind speeds based on a building height of 30 feet; Zone 5; Importance Factor of 1.0; Topographic Factor of 1.0; and an Internal Pressure Coefficient of +/- 0.18, as defined in ASCE 7.

TABLE 3A—PANEL SIDING¹

| PRODUCT NAMES | EDGE TYPE | SURFACE PATTERN | NOMINAL WIDTH (inches) | AVAILABLE LENGTHS (feet) | CROSS SECTIONAL PROFILE |
|---|-----------|-----------------|------------------------|--------------------------|-------------------------|
| 76 Series Fiber Substrate Panel | Square | Cedar Texture | 48 ⁽²⁾ | 8, 9 | |
| | | Smooth Finish | | | |
| 76 Series 8" o.c. (vertical groove) Fiber Substrate Panel | Shiplap | Cedar Texture | 48 ⁽³⁾ | 8, 9 | |
| | | Smooth Finish | | | |
| Stucco Fiber Substrate Panel | Shiplap | Stucco | 48 ⁽³⁾ | 8, 9 | |
| 12" o.c. (RBB) Reverse Board Batten Fiber Substrate Panel | Shiplap | Cedar Texture | 48 ⁽³⁾ | 8, 9 | |

For SI: 1 inch = 25.4 mm, 1 foot = 0.3048 meter, 1 psf = 47.88 Pa, 1 mph = 1.6 kph

¹Minimum actual thickness of 0.375 inch

²Nominal Width (actual minimum width); 48 inches (47.94 inch)

³Nominal Width (actual minimum width); 48 inches (48.56 inch)

TABLE 3B—MAXIMUM COMPONENT & CLADDING DESIGN WIND SPEEDS INSTALLED DIRECTLY TO WOOD STUDS FOR PANEL SIDING PRODUCTS IN TABLE 3A^{1,2,3}

| MAX. STUD SPACING (inches o.c.) | FASTENER SPACING (inches o.c.) | | MIN. FASTENER STUD PENETRATION (inches) | MAX. ALLOWABLE LOADS (psf) | MAX. ALLOWABLE WIND SPEED, V _{ASD} (mph) | | | MAX. ULTIMATE WIND SPEED, V _{ULT} (mph) | | |
|---------------------------------|--------------------------------|-------|---|----------------------------|---|-----|-----|--|-----|-----|
| | EDGE | FIELD | | | WIND EXPOSURE CATEGORY | | | WIND EXPOSURE CATEGORY | | |
| | | | | | B | C | D | B | C | D |
| 16 | 6 | 12 | 1.5 | 32 | 115 | 95 | 85 | 145 | 125 | 115 |
| | | | 2.0 | 38 | 125 | 105 | 95 | 160 | 135 | 125 |
| | 6 | 6 | 1.5 | 64 | 160 | 135 | 125 | 210 | 175 | 160 |
| | | | 2.0 | 77 | 175 | 150 | 135 | 230 | 190 | 175 |

¹Wood studs must have a minimum specific gravity of 0.42.

²Fasteners must be hot dipped galvanized plain (smooth) shank nails with a minimum head diameter of 0.270 inch, and a minimum shank diameter of 0.113 inch. Fasteners must be installed ³/₈ inch from the ends and edges of the panel.

³Wind speeds based on a building height of 30 feet; Zone 5; Importance Factor of 1.0; Topographic Factor of 1.0; and an Internal Pressure Coefficient of +/- 0.18, as defined in ASCE 7.

TABLE 3C—MAXIMUM COMPONENT & CLADDING DESIGN WIND SPEEDS INSTALLED DIRECTLY TO WOOD STRUCTURAL PANELS FOR PANEL SIDING PRODUCTS IN TABLE 3A^{1,2,3}

| MAX. STUD SPACING (inches o.c.) | FASTENER SPACING (inches o.c.) | | MIN. FASTENER PENETRATION BEYOND SHEATHING (inches) | MAX. ALLOWABLE LOADS (psf) | MAX. ALLOWABLE WIND SPEED, V _{ASD} (mph) | | | MAX. ULTIMATE WIND SPEED, V _{ULT} (mph) | | |
|---------------------------------|--------------------------------|-------|---|----------------------------|---|-----|-----|--|-----|-----|
| | EDGE | FIELD | | | WIND EXPOSURE CATEGORY | | | WIND EXPOSURE CATEGORY | | |
| | | | | | B | C | D | B | C | D |
| 16 | 6 | 12 | 1/4 | 27 | 105 | 85 | 80 | 135 | 115 | 105 |
| | 6 | 6 | | 54 | 145 | 125 | 115 | 190 | 160 | 150 |

¹Wood structural panel wall sheathing must be minimum ⁷/₁₆ Category complying with DOC PS 1 or PS 2. The attachment of wood structural panels to the supporting structure is outside the scope of this report.

²Fasteners must be hot dipped galvanized ring shank nails with a minimum head diameter of 0.221 inch, and a minimum shank diameter of 0.092 inch. Fasteners must be installed ³/₈ inch from the ends and edges of the panel.

³Wind speeds based on a building height of 30 feet; Zone 5; Importance Factor of 1.0; Topographic Factor of 1.0; and an Internal Pressure Coefficient of +/- 0.18, as defined in ASCE.