



38 AND 76 SERIES STRAND SUBSTRATE SMOOTH FINISH OR CEDAR TEXTURE PRIMED LAP SIDING

GENERAL

- At the time of manufacture, siding meets or exceeds the performance standards set forth in ICC-ES AC321 and has achieved code recognition under ESR-1301, CCMC 11826-L, APA recognition under PR-N124, and HUD recognition under HUD-MR-1318c. For copies of Product Approvals go online at <https://lpcorp.com/resources/product-literature/> or call LP Customer Support at 800-648-6893.
- Minimum 6 inch (152 mm) clearance must be maintained between siding and finish grade (ground cover).
- Siding applied adjacent to porches, patios, walks, etc. must have a clearance of at least 1 inch (25 mm) above any surface.
- Minimum 1 inch (25 mm) clearance at intersection with roof line.
- Apply siding in a manner that prevents moisture intrusion and water buildup.
- All wood substrate that is exposed to the weather must be sealed in a manner that prevents moisture intrusion and water build up.
 - Seal ALL exposed cuts of siding and trim. Field spray applied coatings on cuts are not recommended.
 - Sealing can be accomplished by applying a coating or sealant according to the manufacturer's requirements.
 - Butt joints that are covered with joint molding, sealant or factory prefinished end, are considered sealed from the weather.
- See Alternate Fastening Options for fastening lap siding to SIP, ICF and Steel Frame assemblies.
- **DO NOT USE STAPLES.**
- **SIDING MUST NOT BE IN DIRECT CONTACT WITH MASONRY, CONCRETE, BRICK, STONE, STUCCO OR MORTAR.**

STORAGE

- Store off the ground well supported, on a flat surface, under a roof or separate waterproof covering.
- Keep siding clean and dry. Inspect prior to application.

STUD SPACING

- 38 Series Strand Substrate lap may be installed on studs spaced a maximum of 16 inches (406 mm) o.c.
- See Alternate Fastening Options for fastening 38 Series Strand Substrate 6 inch (152 mm) and 8 inch (203 mm) lap on studs spaced a maximum of 24 inches (610 mm) o.c.
- 76 Series Strand Substrate lap may be installed on studs spaced a maximum of 24 inches (610 mm) o.c.

- For installations over masonry or concrete walls, the wall shall be furred out and open at the top and bottom of the wall to allow for convective ventilation between framing spaced 16 inches (406 mm) o.c. The framing shall be of adequate thickness to accept 1-1/2 inches (38 mm) of nail penetration. A properly installed breathable water-resistant barrier is required between the siding and masonry or concrete walls.

MOISTURE

- Moisture control and moisture vapor control are critical elements of proper housing design. Check your local building codes for application procedures for handling moisture and water vapor in your area.
- When using wet blown cellulose insulation, the insulation must not be in direct contact with the siding and it must be allowed to dry a minimum of 24 hours or longer if specified by the insulation manufacturer.
- As with all wood products, do not apply engineered wood siding to a structure having excessive moisture conditions such as drying concrete, plaster or wet blown cellulose insulation. If such conditions exist, the building should be well ventilated to allow it to dry prior to the application of the siding.
- Siding must not be applied to green or crooked structural framing members. Do not apply siding over rain-soaked or buckled sheathing materials.
- Gutters are recommended for control of roof water run off.

SECONDARY WATER-RESISTANT BARRIER (WRB)

- A properly installed water-resistant barrier is required behind siding. Consult your local building code for details.
- The LP SmartSide limited warranty does not expressly or implicitly cover water penetration. LP does not assume responsibility for any water penetration.

GAPS & SEALANTS

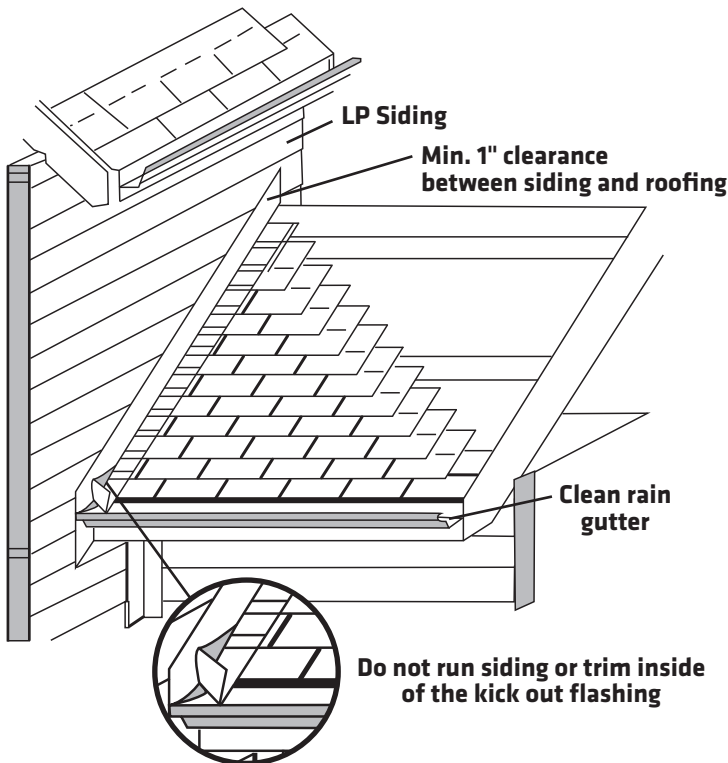
- Seal all gaps with a high-quality, non-hardening, paintable sealant meeting ASTM C920, minimum Class 25.
- Follow the sealant manufacturer's instructions for application.

FLASHING, WINDOWS, DOORS & OPENINGS

- All openings must be properly sealed or flashed in a manner that prevents moisture intrusion or buildup. Several examples that accomplish this are shown on the following pages.

KICK-OUT FLASHING

- Install kick-out flashing to direct the water into the gutter.
- Install step flashing with minimum 4 inch (102 mm) upper leg.
- Properly integrate flashing with the secondary water-resistant barrier. Use housewrap, flashing tape, Z-flashing, or other items as needed to maintain the counterflashing principle.
- **DO NOT extend the siding or trim into the kick-out flashing or gutter.**
- Maintain a clearance between the end of the gutter and the adjoining wall to allow for proper maintenance of the siding.
- Seal ALL exposed cut edges.



TRIM

- Trim should be thick enough so the lap siding does not extend beyond the face of the trim.
- Trim and fascia must be applied in a manner that will not allow moisture intrusion or water buildup.
- LP® SmartSide® siding is not designed and/or manufactured to be used as trim.
 - LP SmartSide trim and fascia are available in a variety of dimensions.

FINISHING INSTRUCTIONS

- **Seal all exposed surfaces, including all drip edges or where water will hang.**
- Apply finish coat as soon as possible or within 180 days of application.
- Follow the coating manufacturer's application and maintenance instructions.

- For best results use a high-quality 100% acrylic latex exterior paint, specially formulated for use on wood and engineered wood substrates is highly recommended; oil paint is acceptable.

DO NOT USE:

- Stain.
- Vinyl-based paint (vinyl acetate or PVA).

SMOOTH FINISH Lap Siding:

- For best results use satin finish.

CEDAR TEXTURE Lap Siding:

- For best results use satin or semi-gloss finish.

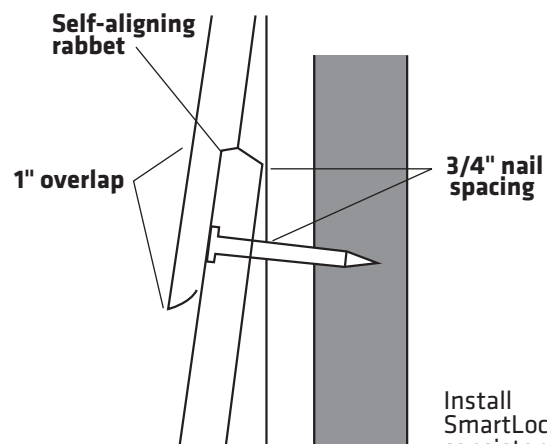
PREFINISHED Lap Siding:

- Handle prefinished LP SmartSide lap siding with extreme care during storage and application.
- Touch up any damage to finish that may occur during application per the Prefinishers specifications.

NAILING INSTRUCTIONS

- LP SmartSide 38 Series lap siding may be attached directly to framing members spaced a maximum of 16 inches (406 mm) o.c.
- LP SmartSide 76 Series lap siding may be attached directly to framing members spaced a maximum of 24 inches (610 mm) o.c.
- Check your local building codes before starting to install siding to confirm if wood structural panel wall sheathing is required.
- Butt joints should be staggered over successive courses.
- Siding shall be installed with top (blind) nailing, with the nails placed 3/8 inch (10 mm) from either end and a minimum of 3/4 inch (19 mm) from the top edge of the board. Fasteners will be exposed on siding located immediately below window sills, fascia boards, and horizontal trim. Fasteners below window sill shall be spaced a maximum of 8 inch (203 mm) o.c.
- Overlap successive courses of siding a minimum of 1 inch (25 mm).
- Use a minimum (0.113 inch shank diameter), hot-dip galvanized nail.

SmartLock Lap Blind Fastening



CONDITION		CORRECTION	
Snug		OK	
Flush		OK	
Visible fiber		Paint	
Countersunk 1/16" - 1/8"		Apply sealant	
Countersunk more than 1/8"		Apply sealant and re-nail	

- All exposed face nails must be caulked and sealed in a manner that prevents moisture intrusion and water buildup.
- Penetrate structural framing or wood structural panels and structural framing a minimum of 1-1/2 inches (38 mm).
- Nail from the center of the siding toward the ends, or from one end to the other end. NEVER nail from the ends of the siding toward the middle.
- Shim siding at studs as needed, to avoid drawing siding against uneven walls. Do not overdrive nails. Nail head should seat firmly to face of siding but not be overdriven to distort the siding surface.
- For information on fastening LP SmartSide products in high wind speed areas, refer to ICC-ES Report ESR-1301 or APA PR-N124.

Alternative Fastening Option for Strand Lap Siding over Wood Structural Panels and 24 inch (610 mm) o.c. Stud Spacing

- Limited to 6 inch (152 mm) and 8 inch (203 mm) wide lap siding.
- Wood structural panels must be a minimum 7/16 Category with an APA Trademark that contains the consensus Standard DOC PS 2.
- 38 Series Strand Substate lap must be fastened with:
 - Minimum #8 hot dip galvanized tapered head wood screw, spaced a maximum of 12 inches (305 mm) o.c. with 1-1/2 inch (38 mm) screw penetration into stud or...
 - Minimum (0.092 in. shank diameter) hot-dip galvanized ring shank nail, spaced a maximum of 8 inches (203 mm) o.c. with 1-1/2 inch (38 mm) nail penetration into stud.

Alternative Fastening Options over SIP Assemblies

- Wood structural panels must be a minimum 7/16 Category with an APA Trademark that contains the consensus standard DOC PS 2.
- 38 Series Strand Substrate lap must be fastened with:
 - Minimum #8 hot dip galvanized tapered head wood screw, spaced a maximum of 12 inches (305 mm) o.c. or...
 - Minimum (0.092 inch shank diameter) hot-dip galvanized ring shank nail, spaced a maximum of 8 inches (203 mm) o.c.
- 76 Series Strand Substrate lap must be fastened with:
 - Minimum #8 hot dip galvanized tapered head wood screw, spaced a maximum of 16 inches (406 mm) o.c. or...
 - Minimum (0.092 inch shank diameter) hot-dip galvanized ring shank nail, spaced a maximum of 12 inches (305 mm) o.c.

Alternative Fastening Option over ICF Assemblies

- 38 and 76 Series Strand Substrate Lap must be fastened with:

- Minimum #8 hot-dipped galvanized, tapered head, self-drilling screw.
- Minimum penetration of 3/8 inch (10 mm) beyond the thickness of the nailing flange.
- Larger screws may be required by the ICF Manufacturer based on the following minimum withdrawal requirements.

- Minimum withdrawal value of the ICF nailing flange must be 50 lbs. with a maximum 12 inches (305 mm) o.c. screw spacing.
- Minimum withdrawal value of the ICF nailing flange must be 31 lbs. with a maximum 6 inches (152 mm) o.c. screw spacing.

Alternative Fastening Options over Corrosion Resistant Steel Stud Framing

- Minimum withdrawal value of the steel framing must be 50 lbs. Refer to the framing manufacturer's evaluation report.
- 38 Series Strand Substrate lap must be fastened with:
 - Stud spacing a maximum spacing of 16 inches (406 mm) o.c.
 - Minimum #8 hot-dip galvanized, tapered head, self-drilling screw.
 - Minimum of 5 threads beyond the combined thickness of the siding and steel stud framing.
 - Minimum steel framing thickness of 0.032 inch (8 mm) or 20 gauge.
- 76 Series Strand Substrate lap must be fastened with:
 - Stud spacing a maximum spacing of 24 inches (610 mm) o.c.
 - Minimum #8 hot-dip galvanized, tapered head, self-drilling screw.
 - Minimum of 5 threads beyond the combined thickness of the siding and steel stud framing.
 - Minimum steel framing thickness of 0.032 inch (8 mm) or 20 gauge.

CAUTION

- Do not force siding into place.
- **DO NOT USE STAPLES.**
- Climb cut the surface of the siding such that the rotation of the blade cuts downward on the primed or prefinished surface.
- Where siding butts window trim, door casings and masonry, etc. leave a 3/16 inch (5 mm) gap and seal.

Insulated Sheathings

LP SmartSide lap sidings may be installed over low-compression, rigid foam insulation sheathing or exterior gypsum. The following precautions must be followed:

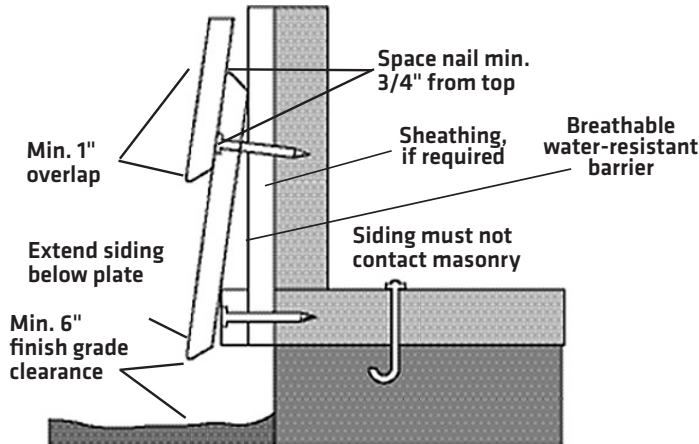
- Adequate bracing of the wall in accordance with the International Building Codes or other ruling building codes is required.
- For rigid foam insulation sheathing up to 1 inch (25 mm) thick, siding may be nailed directly to the foam sheathing unless a drainage plane is required by the local building code. Nail length must be increased to ensure a minimum 1-1/2 inch (38 mm) fastener penetration into the structural framing.
- For rigid foam insulation sheathing greater than 1 inch (25 mm), a minimum 1-1/2 inches (38 mm) thick by 3-1/2 inches (89 mm) wide vertical strap or furring strip must be installed over the

sheathing to provide a solid level nailing base for the siding. The strapping must be securely fastened to structural framing spaced no greater than 16 inches (406 mm) o.c. with a minimum nail penetration of 1-1/2 inches (38 mm) and a maximum nail spacing no greater than the width of the siding.

Louisiana-Pacific will assume no responsibility for any damage or condition arising from the use of rigid foam insulation sheathing or exterior gypsum.

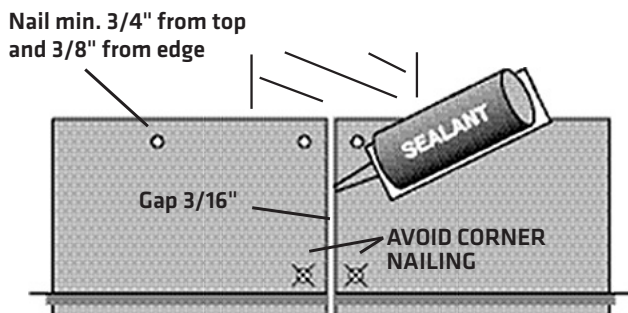
OVERLAP, CLEARANCE & NAILING SPACE

Figure 1



BUTT JOINTS

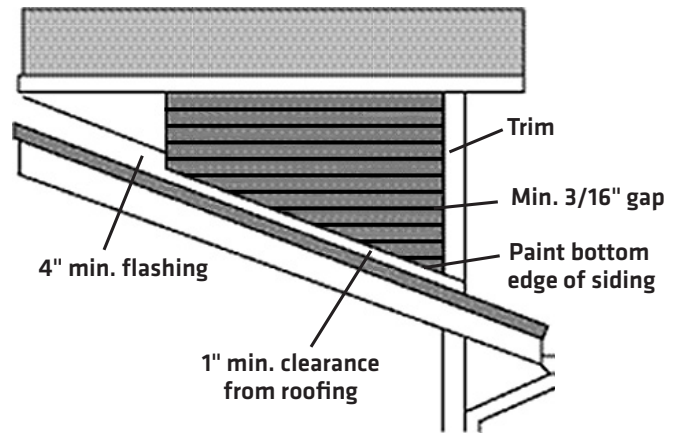
Figure 2



- Butt joints must occur over studs.
- A minimum 3/16 inch (5 mm) gap is required at ALL butt joints.
- **If joint caulking option is selected**, seal all gaps at butt joints with a high-quality exterior sealant meeting the ASTM C920, minimum Class 25 sealant.
- **If joint moulding option is selected**, add the thickness of the web to the gap allowing a net 3/16 inch (5 mm) space for expansion.
- **If siding is prefinished**, gap does not require sealant or joint moulding when backed with minimum 4 inch (102 mm) wide flashing and the ends of the siding are factory finished.

1 INCH (25 MM) ROOF & CHIMNEY CLEARANCE

Figure 4



LP Strand Substrate Lap Siding may also be installed in compliance with Category 8140- Exterior wall siding and sheathing for Wildland Urban Interface (WUI) applications atop LP FlameBlock sheathing. Refer to FlameBlock installation instructions and product data sheets. All LP lap sidings may be installed as exterior siding in Wildland Urban Interface (WUI) applications installed over one layer 5/8" (16 mm) Type X gypsum sheathing applied behind the exterior covering or cladding on the exterior side of the framing. They may also be installed over the exterior portion of a 1-hour fire-resistive exterior wall assembly designed for exterior fire exposure including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.

The Louisiana-Pacific Corporation ("LP") LP SmartSide Siding (the "Products") limited warranty (the "Warranty") applies only to structures on which the Products have been applied, finished and maintained in accordance with the published application, finishing and maintenance instructions in effect at the time of application. The failure to follow such application, finishing or maintenance instructions will void the Warranty as to the portion of the Products affected by the variance (the "Affected Products").

LP assumes no liability for any loss or damage sustained by the Affected Products and is expressly released by the purchaser or owner from any such loss or liability.

Any modification of the Warranty's application, finishing or maintenance requirements is void unless approved in writing by LP prior to application.

For a copy of the warranty or for installation and technical support, visit the LP SmartSide product support Web site at:

www.lpsmartside.com

or for additional support call 800-648-6893.

WARRANTY REMEDIES ARE NOT AVAILABLE IF REQUIREMENTS ARE NOT FOLLOWED.



WARNING: Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information go to www.P65Warnings.ca.gov/wood.



SmartSide®
TRIM & SIDING

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NOTE: Louisiana-Pacific Corporation periodically updates and revises its product information. To verify that this version is current, call 800-648-6893.

Over Openings

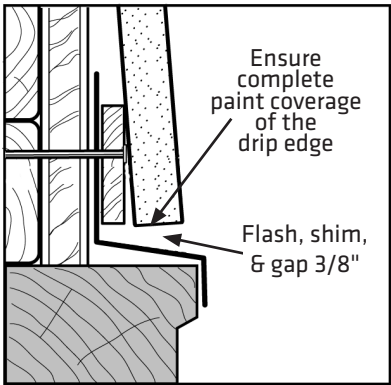


Figure 3A

Alternate Butt Joint Treatments

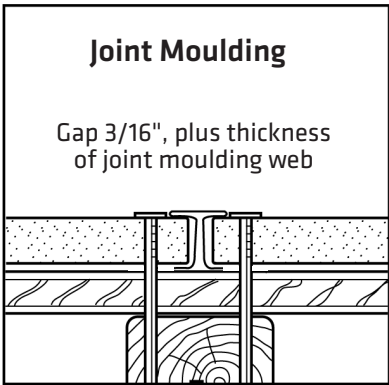


Figure 3B

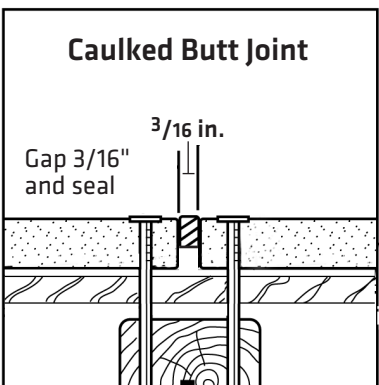


Figure 3C

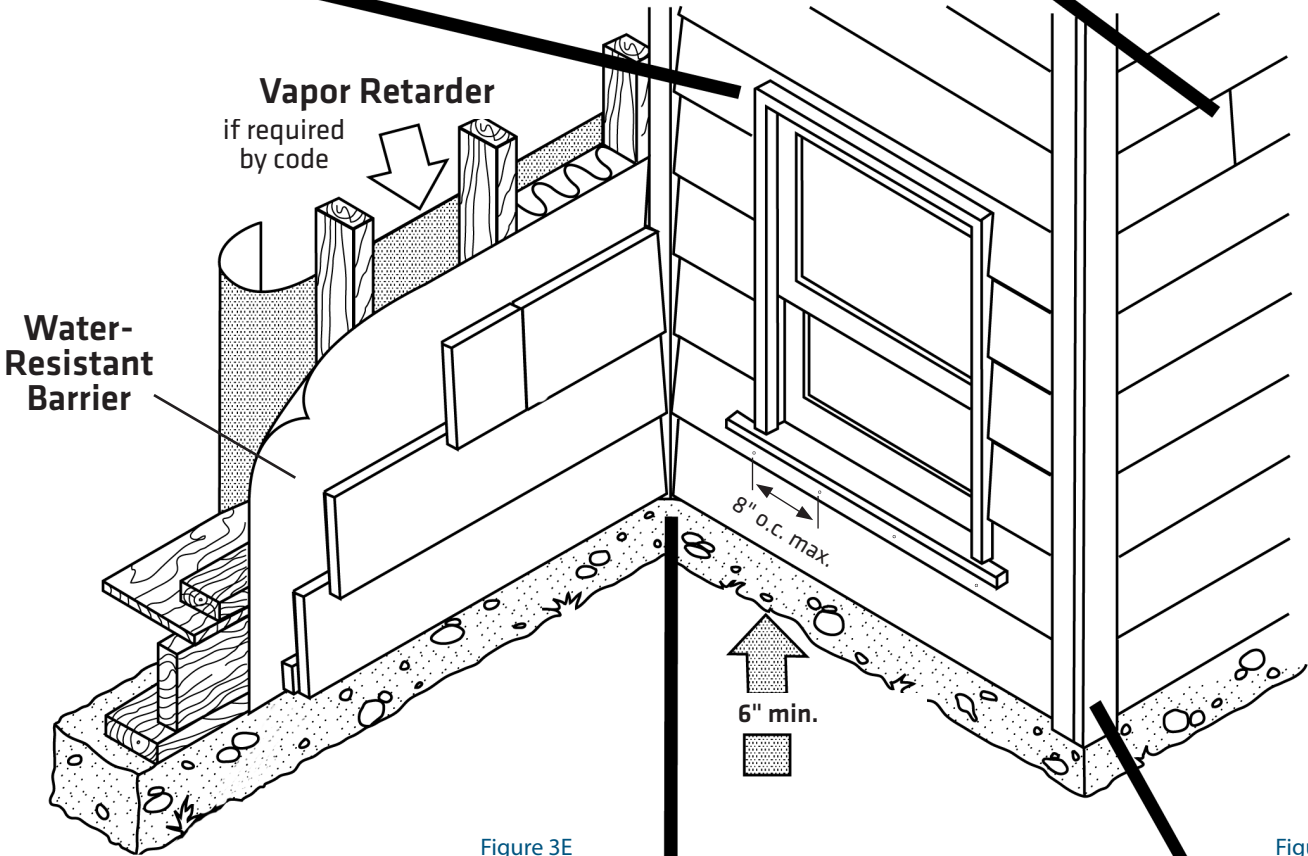
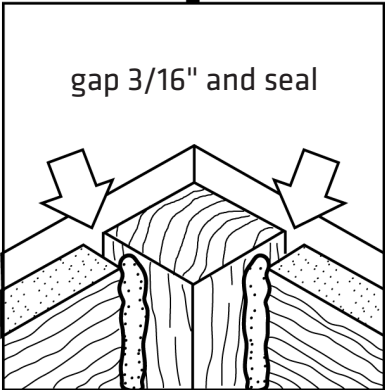


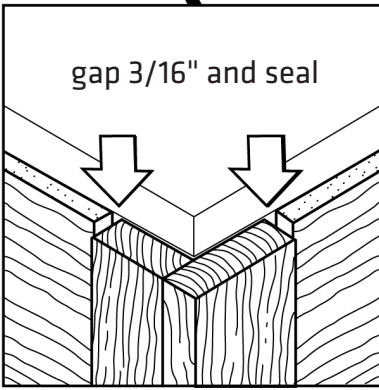
Figure 3

Figure 3E



Inside Corner

Figure 3D



Outside Corner



STRAND SUBSTRATE 38, 76 AND 190 SERIES PRIMED PANEL SIDING INCLUDING SILVERTECH & SMARTFINISH

GENERAL

- At the time of manufacture, siding meets or exceeds the performance standards set forth in ICC-ES AC321 and has achieved code recognition under ESR-1301, CCMC 11826-L, APA recognition under PR-N124, and HUD recognition under HUD-MR# 1318c. For copies of Product Approvals go online at <https://lpcorp.com/resources/product-literature/> or call LP Customer Support at 800-648-6893.
- Strand Substrate panel siding with SilverTech or SmartFinish is specifically for sheds and other outdoor structures where the interior wall cavities will remain permanently exposed.
- Minimum 6 inch clearance must be maintained between siding and finish grade (ground cover).
- Siding applied adjacent to porches, patios, walks, etc. must have a clearance of at least 1 inch above any surface.
- Minimum 1 inch clearance at intersection with roof line
- Apply siding in a manner that prevents moisture intrusion and water buildup.
- All wood substrate that is exposed to the weather must be sealed in a manner that prevents moisture intrusion and water build up.
 - Seal ALL exposed cuts of siding and trim. Field spray applied coatings on cuts are not recommended.
 - Sealing can be accomplished by applying a coating or sealant according to the manufacturer's requirements.
- All exposed wood substrate must be sealed in a manner that prevents moisture intrusion and water buildup.
- LP does not recommend LP SmartSide Panel for use in ICF assemblies. If used, LP will not warrant for Buckling and Shrinkage. However, balance of warranty does remain intact.
- Use nails to fasten LP SmartSide panel siding to structural framing. The use of alternate fasteners such as staples is permissible only when allowed by I-Codes and where the size, embedment, placement, and number of alternate fasteners is designed by a licensed design professional and approved by local building official. The use of alternate fasteners, however, is not recommended and LP will not warrant any damage or performance failures to the extent caused by using any alternate fasteners.
- SIDING MUST NOT BE IN DIRECT CONTACT WITH MASONRY, CONCRETE, BRICK, STONE, STUCCO OR MORTAR.

STORAGE

- Store off the ground well supported, on a flat surface, under a roof or separate waterproof covering
- Keep siding clean and dry. Inspect prior to application.

STUD SPACING

- Strand Substrate 38 and 76 Series panel siding must be installed with the long dimension vertically on studs spaced max. 16 inch o.c. When installing on 24 inch o.c. framing, 190 Series panel siding is required.

MOISTURE

- Moisture control and water vapor control are critical elements of proper housing design. Check your local building codes for application procedures for handling moisture and water vapor in your area.
- When using wet blown cellulose insulation, the insulation must not be in direct contact with the siding and it must be allowed to dry a minimum of 24 hours or longer if specified by the insulation manufacturer.
- As with all wood products, do not apply engineered wood siding to a structure having excessive moisture conditions such as drying concrete, plaster or wet blown cellulose insulation. If such conditions exist, the building should be well ventilated to allow it to dry prior to the application of the siding.
- Siding must not be applied to green or crooked structural framing members. Do not apply siding over rain-soaked or buckled sheathing materials.
- Gutters are recommended for control of roof water run off.

SECONDARY WATER-RESISTIVE BARRIER (WRB)

- LP strongly recommends the use of a secondary water-resistive barrier behind all LP SmartSide siding. A properly installed WRB provides a second line of defense to incidental moisture behind the siding.
- The LP SmartSide limited warranty does not expressly or implicitly cover water penetration. LP does not assume responsibility for any water penetration.
- Sheds and other accessory structures that are not heated or cooled do not require a secondary WRB if exempt by applicable building codes.

GAPS & SEALANTS

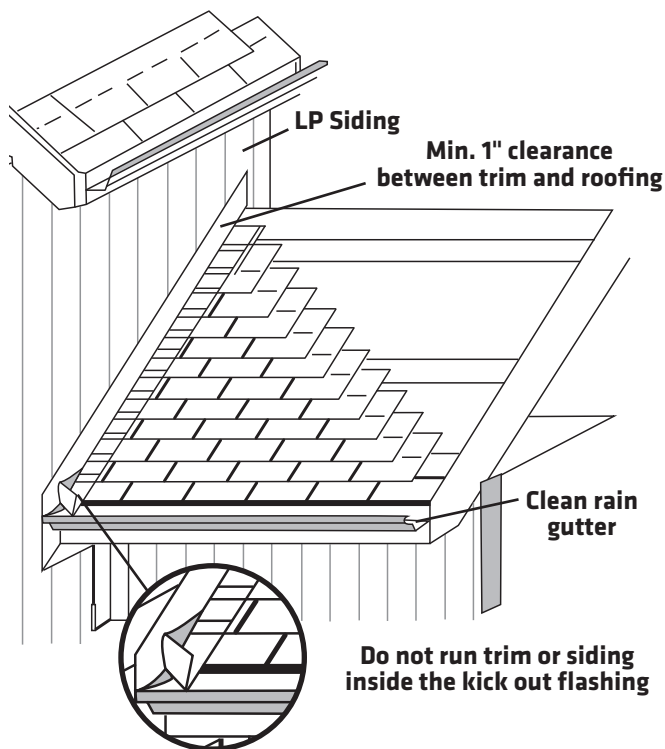
- Seal all gaps with a high-quality, non-hardening, paintable sealant. Follow the sealant manufacturer's instructions for application.
- Use an exterior-quality, non-hardening, paintable sealant. Use Class 25 or higher exterior sealant meeting the ASTM C920 Standard for Specification for Elastomeric Joint Sealants. Follow the sealant manufacturer's instructions for application.

FLASHING, WINDOWS, DOORS & OPENINGS

- All openings must be properly sealed or flashed in a manner that prevents moisture intrusion or buildup. Several examples that accomplish this are shown on the following pages.

KICK-OUT FLASHING

- Install kick-out flashing to direct the water into the gutter
- Install step flashing with minimum 4 inch upper leg
- Properly integrate flashing with the secondary water-resistive barrier. Use housewrap, flashing tape, Z-flashing, or other items as needed to maintain the counterflashing principle.
- DO NOT extend the siding or trim into the kick-out flashing or gutter
- Maintain a clearance between the end of the gutter and the adjoining wall to allow for proper maintenance of the siding
- Prime and paint ALL exposed cut edges



TRIM

Trim should be thick enough so the siding does not extend beyond the face of the trim.

- Trim and fascia must be applied in a manner that will not allow moisture intrusion or water buildup.
- LP® SmartSide® siding is not designed and/or manufactured to be used as trim or fascia. LP SmartSide trim and fascia are available in a variety of dimensions.

FINISHING INSTRUCTIONS

- Prime and paint all exposed surfaces including all drip edges or where water will hang.

- Apply finish coat as soon as possible or within 180 days of application.
- High-quality acrylic latex paint, specially formulated for use on wood and engineered wood substrates, is highly recommended. Semi-gloss or satin finish oil or alkyd paints are acceptable. For flat alkyd paint, please check with the coating manufacturer for their recommendations for use on composite wood siding.
- Follow the coating manufacturer's application and maintenance instructions.

DO NOT USE

- Stain.
- Vinyl-based paint (like vinyl acetate, or PVA).

HANDLE PREFINISHED LP SMARTSIDE PRODUCTS WITH EXTREME CARE DURING STORAGE AND APPLICATION. TOUCH UP ANY DAMAGE TO THE FINISH THAT MAY OCCUR DURING APPLICATION PER PREFINISHERS SPECIFICATIONS.

NAILING INSTRUCTIONS

- In braced wall assemblies, use minimum (0.113 inch shank diameter) hot-dipped galvanized nails for 38 and 76 Series panels and minimum (0.131 inch shank diameter) for 190 Series panels. Do not use electroplated fasteners. Refer to your local building code to verify the minimum allowable fastener size.
- Penetrate structural framing or wood structural panels and structural framing a minimum of 1-1/2 inches.
- For 38 Series panels, double nailing procedure meets wall bracing requirements and 5/16 inch shear wall design values.

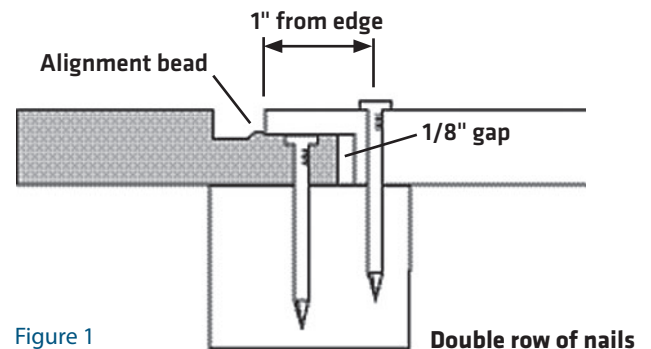


Figure 1

- For 76 and 190 Series panels, single nailing meets wall bracing requirements. To meet the equivalent 3/8 inch shear wall design values, double nailing procedures must be used. It may be necessary to angle drive the second nail in order to penetrate the framing. Seal nails driven below the surface.

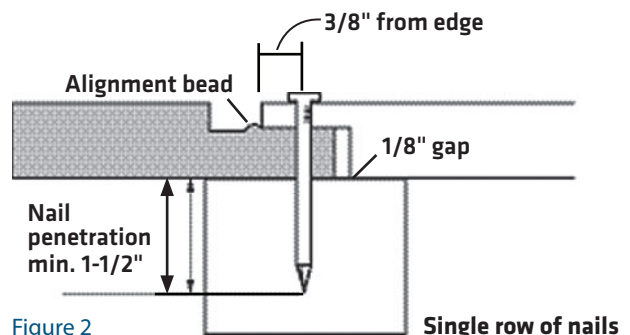


Figure 2

Application instructions (cont.)

- Shear values for panels applied directly to studs shall be no greater than noted in Table 1 of the ICC-ES Report ESR-1301 or Table 1 of APA PR-N124.
- **Not warranted for application on ICF assemblies.**
- 38 and 76 Series panels must be installed on 16 inch o.c. framing only. When installing on 24 inch o.c. framing, 190 Series panels are required.
- Backside of panel must not come in contact with masonry or concrete foundation.
- Do not force siding into place. Maintain the illustrated 1/8 inch gap behind the joint to allow for expansion while the panel equilibrates with the local environment.
- **DO NOT INSTALL OVER ALIGNMENT BEAD.** Install panels in light contact to the edge of alignment bead. (see Figure 1 and Figure 2)
- Climb cut the surface of the siding such that the rotation of the blade cuts downward on the primed or prefinished surface.
- Where siding butts window trim, door casings and masonry, etc. leave a 3/16 inch gap and seal.

Insulated Sheathings

LP SmartSide Siding may be installed over low-compression rigid foam or exterior gypsum. The following precautions must be followed:

- Adequate bracing of the wall in accordance with the International Codes or other ruling building code is required.
- For rigid foam sheathing up to 1 inch (25 mm) thick, siding may be nailed directly to the foam sheathing unless a drainage plane is required by the local building code. Nail length must be increased to ensure a minimum 1-1/2 inch (38 mm) fastener penetration into the structural framing.
- For rigid foam sheathing greater than 1 inch (25 mm), a minimum 1-1/2 inch (38 mm) thick by 3-1/2 inch (89 mm) wide vertical strapping or furring strip must be installed over the sheathing to provide a solid, level nailing base for the siding. The strapping must be securely fastened to structural framing spaced no greater than 16 inches o.c. (406 mm) with a minimum nail penetration of 1-1/2 inches (38 mm) and a maximum nail spacing no greater than the width of the siding.

Louisiana-Pacific Corporation will assume no responsibility for any damage or condition arising from the use of rigid foam or exterior gypsum.

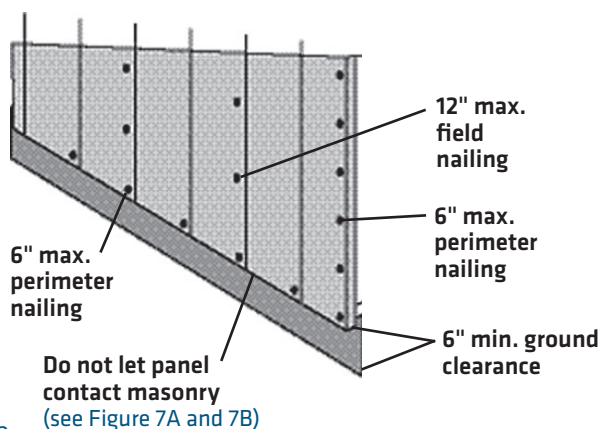


Figure 3

CONDITION		CORRECTION	
Snug		OK	
Flush		OK	
Visible fiber		Paint	
Countersunk 1/16\"-1/8\"		Apply sealant	
Countersunk more than 1/8\"		Apply sealant and re-nail	

1 IN. ROOF & CHIMNEY CLEARANCE

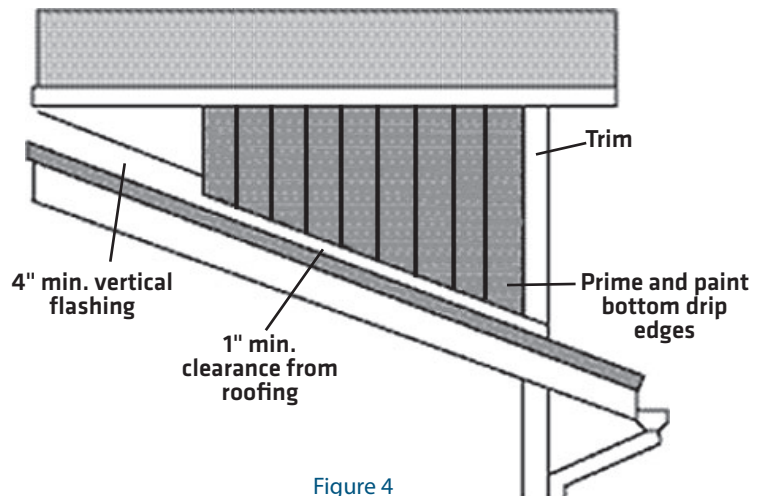


Figure 4

LP SMARTSIDE PANEL SIDING JOINT DETAILS

HORIZONTAL WALL JOINTS

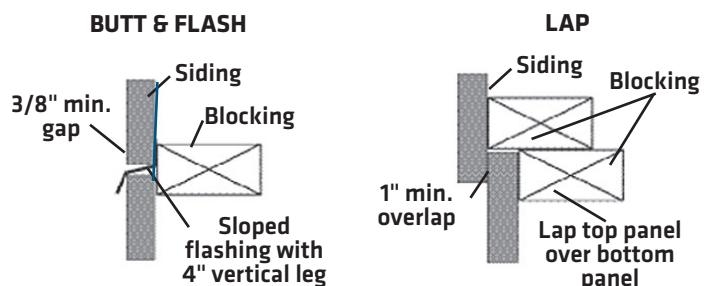


Figure 5A

Figure 5B

LAPPED HORIZONTAL WALL JOINT

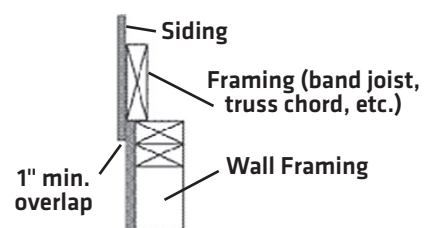


Figure 5C

PANEL SIDING JOINT DETAILS (CONT.)

HORIZONTAL BELTLINE JOINTS

For multi-story buildings, make provisions at horizontal joints for "setting" shrinkage of framing, especially when applying

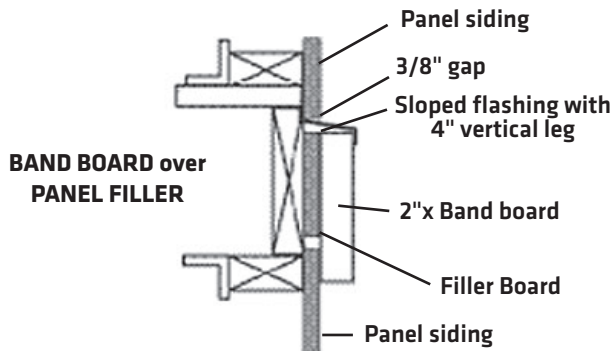


Figure 6

SILL PLATE OPTIONS

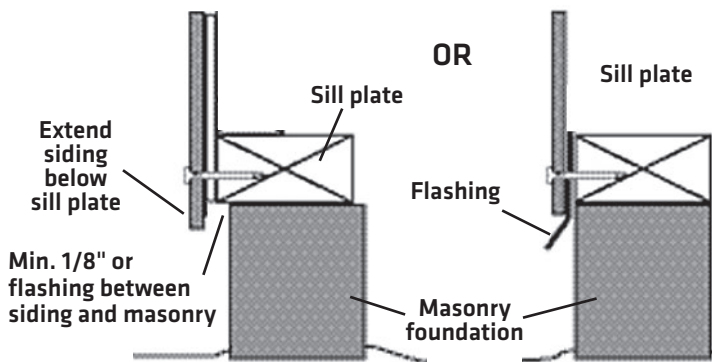


Figure 7A

Figure 7B

GAP, FLASH DOORS & WINDOWS

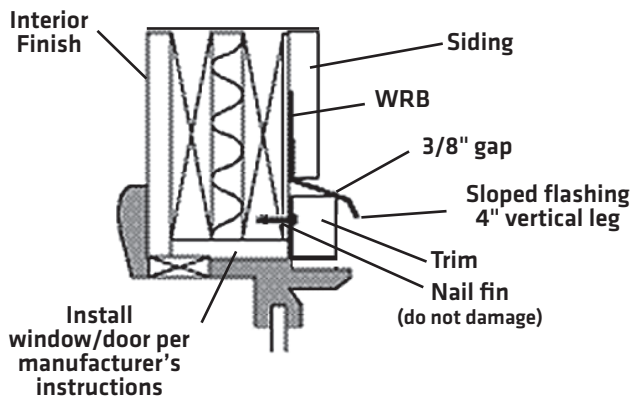
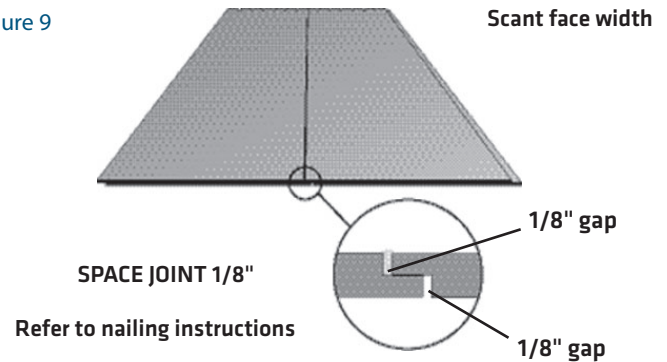


Figure 8

4 FT. X 8 FT. UNGROOVED SHIPLAP PANEL

Figure 9



LP panel sidings are accepted by the State of California as category 8140- Exterior wall siding and sheathing for Wildland Urban Interface (WUI) applications. For WUI compliance, install LP panel sidings in accordance with Louisiana-Pacific's printed application instructions with the addition of fire retardant seal (UL Listed fire caulk, nominal 1/4 inch bead) in the vertical joint and nailing pattern of 3 inch o.c. perimeter nailing / 8 inch o.c. field nailing. Look for the California State Fire Marshal Office label on our siding.

The Louisiana-Pacific Corporation ("LP") LP SmartSide Siding (the "Products") limited warranty (the "Warranty") applies only to structures on which the Products have been applied, finished and maintained in accordance with the published application, finishing and maintenance instructions in effect at the time of application. The failure to follow such application, finishing or maintenance instructions will void the Warranty as to the portion of the Products affected by the variance (the "Affected Products").

LP assumes no liability for any loss or damage sustained by the Affected Products and is expressly released by the purchaser or owner from any such loss or liability.

Any modification of the Warranty's application, finishing or maintenance requirements is void and unenforceable unless approved in writing prior to application by the Siding General Manager or his designee and a member of the LP Legal Department.

For a copy of the warranty or for installation and technical support, visit the LP SmartSide product support Web site at:

www.lpsmartside.com

or for additional support call 800-648-6893.

WARRANTY REMEDIES ARE NOT AVAILABLE IF REQUIREMENTS ARE NOT FOLLOWED.

Cal. Prop 65 Warning: Use of this product may result in exposure to wood dust, known to the State of California to cause cancer.

LP SmartSide®
TRIM & SIDING

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NOTE: Louisiana-Pacific Corporation periodically updates and revises its product information. To verify that this version is current, call 800-648-6893.

alternate inside corner details

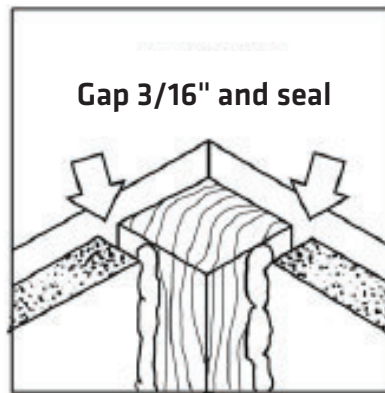


Figure 10A

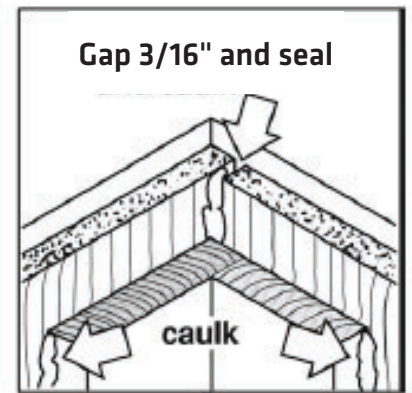
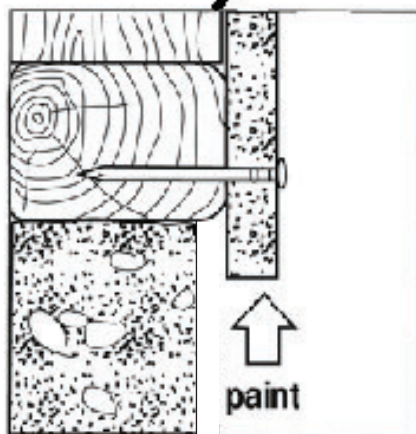
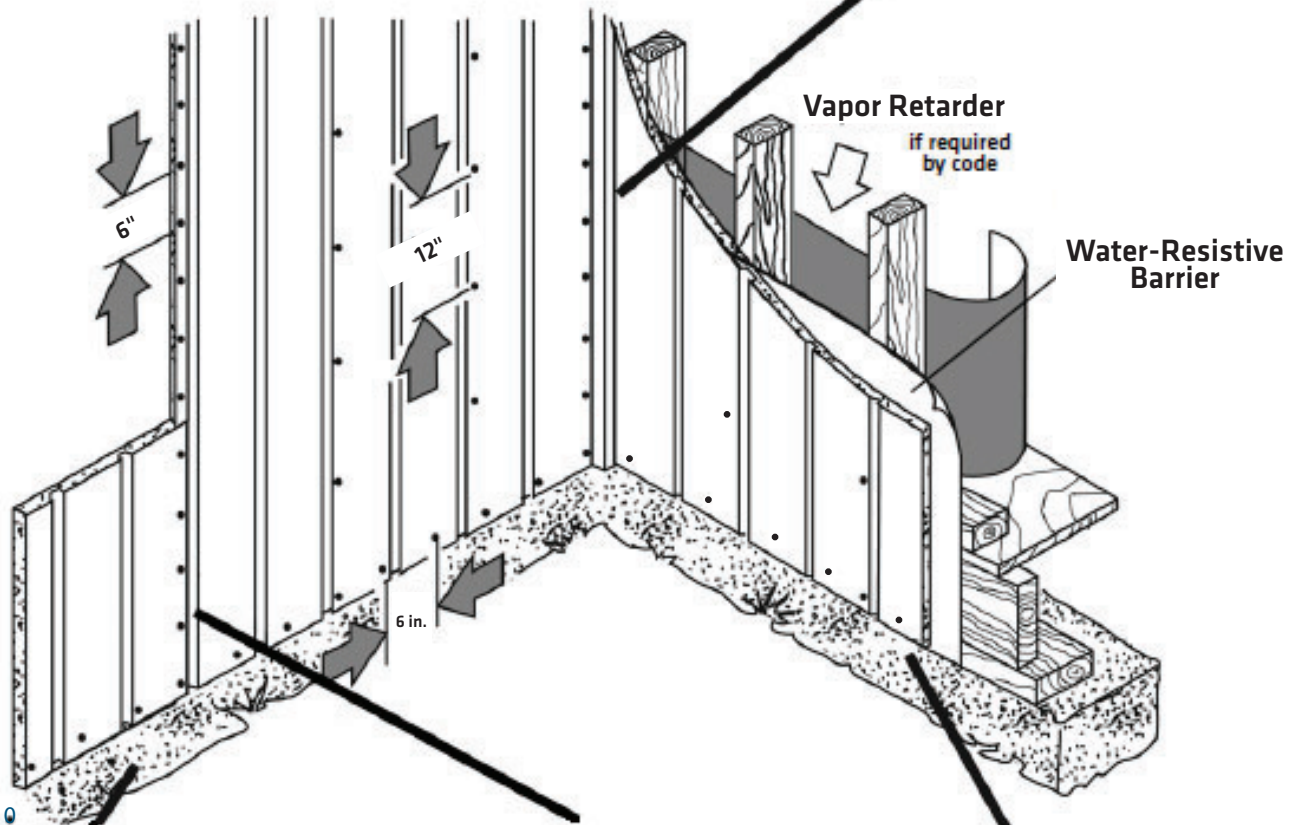


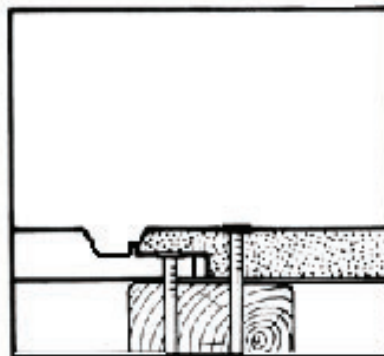
Figure 10B



bottom course detail

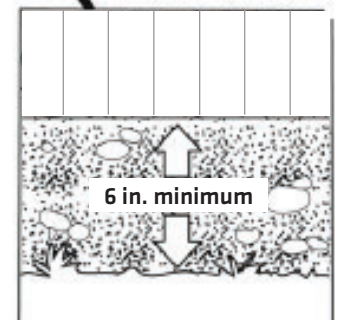
Figure 10E

Shiplap Edge Panel



panel joint

Figure 10D



ground clearance

Figure 10C



LP[®] SmartSide[®] Strand Substrate

PR-N124

Treated-Engineered-Wood Lap, Panel, and Vertical Siding

Louisiana-Pacific Corporation

Revised July 2, 2020

Product: LP[®] SmartSide[®] Strand Substrate Treated-Engineered-Wood Lap, Panel, and Vertical Siding

Louisiana-Pacific Corporation, 414 Union Street, Suite 2000, Nashville, TN 37219

(800) 450-6106

www.lpcorp.com

1. Basis of the product report:

- 2018, 2015, 2012, and 2009 International Building Code: Section 104.11 Alternative materials
- 2018, 2015, 2012, and 2009 International Residential Code: Section R104.11 Alternative materials
- ANSI/AWC SDPWS-2015 Special Design Provisions for Wind and Seismic
- ASCE 7-16, ASCE 7-10, and ASCE 7-05 Minimum Design Loads for Buildings and Other Structures
- APA PRP-108 Performance Standards and Qualification Policy for Structural-Use Panels
- NES Evaluation Protocol for Determination of Flood-Resistance Properties of Building Elements
- APA Reports R&D 87Q-1, T87Q-45, T91Q-11, T91Q-20, T97Q-4, T97Q-10, T98Q-13, T98Q-17, T99Q-23, T2008Q-12, T2008P-73, T2008P-74, T2009Q-54, T2011Q-59, T2012P-22, T2015Q-38, T2015Q-39, T2017P-03, and T2018P-05, and other qualification data.

2. Product description:

Louisiana-Pacific Corporation (LP[®]) SmartSide[®] Strand Substrate Treated-Engineered-Wood Lap, Panel, and Vertical Siding is overlaid with a resin treated paper and is available with either a smooth or embossed surface texture. The siding is treated with Zinc Borate for decay and insect resistance. The efficacy of the preservative treatment of the LP SmartSide siding is outside the scope of this report and the APA certification program. All edges are factory sealed with a primer.

LP SmartSide lap siding is available in 3/8 and 7/16 Performance Categories, in nominal widths of 5, 6, 7, 8, 9-1/2, and 12 inches and in lengths up to 16 feet. The lap siding may be installed horizontally or vertically.

LP SmartSide panel siding is available in 3/8, 7/16 and 19/32 Performance Categories, 4 feet in width, and up to 18 feet in length. The 3/8 Performance Category panels are available without grooves or with grooves spaced 8 inches on center. The 7/16 and 19/32 Performance Category panels are available without grooves or with grooves spaced either 4 or 8 inches on center. Minimum thicknesses at the groove and shiplap are documented in the plant Quality Manual.

LP SmartSide Vertical Siding is a narrow width panel siding and is available in 3/8 Performance Category, nominal width of 16 inches, and in 16-foot lengths. The vertical siding can only be installed vertically.

3. Design properties:

Allowable racking shear values for LP SmartSide Strand Substrate panel siding are listed in Table 1. For 3/8 Performance Category panels nailed at shiplap edges, use 5/16

Performance Category shear values. For 7/16 and 19/32 Performance Category panel sidings nailed at shiplap edges, use 3/8 Performance Category shear values. Design wind loads for LP SmartSide Strand Substrate lap and panel siding are listed in Tables 2 and 3, respectively. Design wind loads for LP SmartSide Strand Substrate lap and panel siding when installed over the facer of structural insulated panels (SIPs) and wood structural panel (WSP) sheathing are listed in Tables 4 and 5, respectively. Design wind loads for LP SmartSide Strand Substrate Vertical Siding and lap siding applied vertically are listed in Table 6.

4. Product installation:

LP SmartSide Strand Substrate Treated-Engineered-Wood Lap, Panel, and Vertical Siding shall be installed in accordance with recommendations provided by the manufacturer (www.lpcorp.com/products/siding/lp-smartside-trim-siding/) and APA *Engineered Wood Construction Guide*, Form E30 (www.apawood.org/resource-library), as applicable. The maximum span shall be in accordance with the Span Rating shown in the trademark. The LP SmartSide Strand Substrate lap and panel siding shall be permitted to be installed over the facer of structural insulated panels (SIPs) and WSP sheathing in accordance with Tables 4 and 5, respectively.

LP SmartSide lap siding, when installed vertically, shall be installed over a minimum 7/16 Performance Category wood structural panel sheathing meeting DOC PS1 or DOC PS2 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.

LP SmartSide Vertical Siding shall be installed over a minimum 7/16 Performance Category wood structural sheathing meeting DOC PS1 or DOC PS2 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.

5. Fire-resistant construction:

Wood structural panels that are not fire-retardant-treated have been shown to meet a Class III (or C) category for flame spread. Unless otherwise specified, fire-resistant construction shall be in accordance with the recommendations in APA *Fire-Rated Systems*, Form W305 (see link above).

6. Flood resistance evaluation:

Selected properties critical to flood resistance of 3/8 and 7/16 Performance Category panel siding, including uniform loads, concentrated static loads, concentrated hard body and soft body impact loads, fastener performance, wall racking resistance, edge thickness swell, linear expansion, hygroscopicity, exterior bond performance and large panel and small specimen bending properties were evaluated at a 16 o.c. Span Rating in accordance with *NES Evaluation Protocol for Determination of Flood-Resistance Properties of Building Elements*. Test results in the dry (as-received) condition and after moisture cycling in accordance with the NES protocol were compared to the requirements specified in ICC Evaluation Service (ICC-ES) *Acceptance Criteria for Treated-Engineered-Wood Siding* (AC321).

7. Limitations:

- a) LP SmartSide Strand Substrate Treated-Engineered-Wood Lap, Panel, and Vertical Siding used outdoors must be finished in accordance with recommendations provided

- by the manufacturer (see link above) and APA *Engineered Wood Construction Guide*, Form E30 (see link above).
- b) The efficacy of the preservative treatment of the LP SmartSide siding is outside the scope of this report and the APA certification program.
 - c) LP SmartSide Strand Substrate Treated-Engineered-Wood panel siding is flood resistant on the properties listed in Section 6. This evaluation applies to 3/8 and 7/16 Performance Category panel siding at a 16 o.c. Span Rating.
 - d) LP SmartSide Strand Substrate Treated-Engineered-Wood Lap and Panel Siding is produced at Louisiana-Pacific Corporation facilities at Dawson Creek, BC, Hayward, WI, Newberry, MI, Tomahawk, WI, Two Harbors, MN, and Swan Valley, MB, and LP SmartSide Strand Substrate Treated-Engineered-Wood Vertical Siding is produced at Louisiana-Pacific Corporation facility at Tomahawk, WI, under a quality assurance program audited by APA.
 - e) This report is subject to re-examination in one year.
8. Identification:
LP SmartSide Strand Substrate Treated-Engineered-Wood Lap, Panel, and Vertical Siding described in this report is identified by a label bearing the manufacturer's name (Louisiana-Pacific Corporation) and/or trademark, the APA assigned plant number (402 for the Dawson Creek, BC plant, 357 for the Hayward, WI plant, 416 for the Newberry, MI plant, 435 for the Tomahawk, WI plant, 399 for the Two Harbors, MN plant, or 457 for the Swan Valley, MB plant), the product Performance Category, the Span Rating, the Exposure Rating, the APA logo, the report number PR-N124, and a means of identifying the date of manufacture.

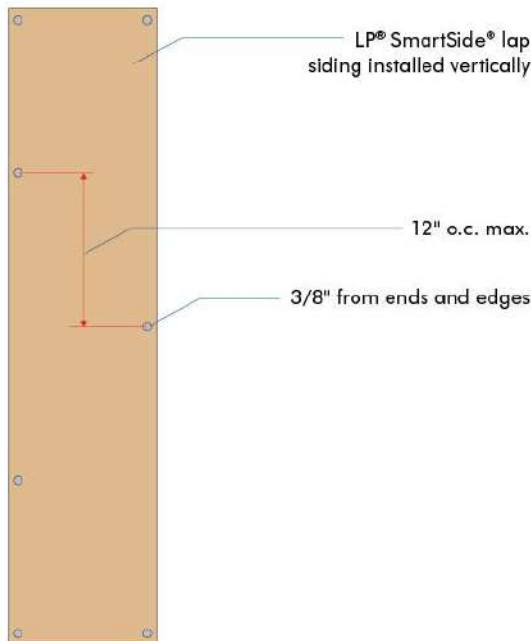


Figure 1. Lap siding installed vertically

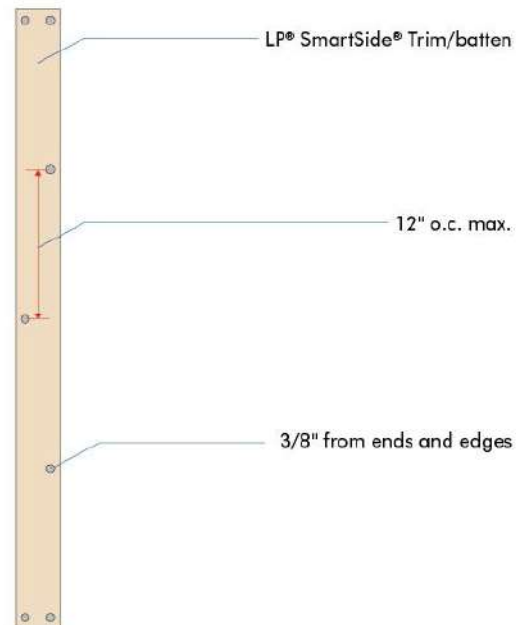


Figure 2. LP SmartSide Trim/Batten

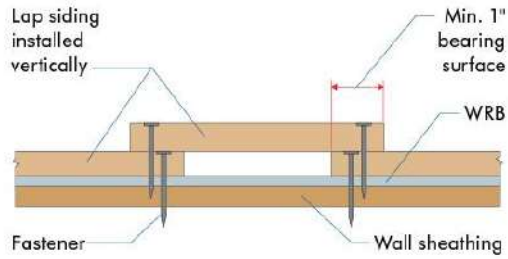


Figure 3. Lap siding attachment detail

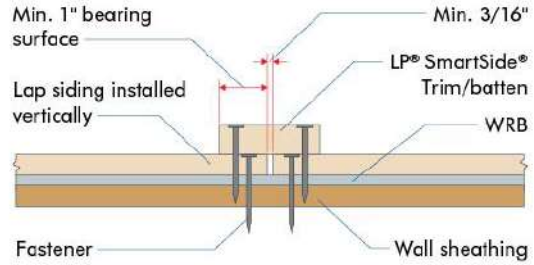


Figure 4. LP SmartSide Trim/Batten attachment detail

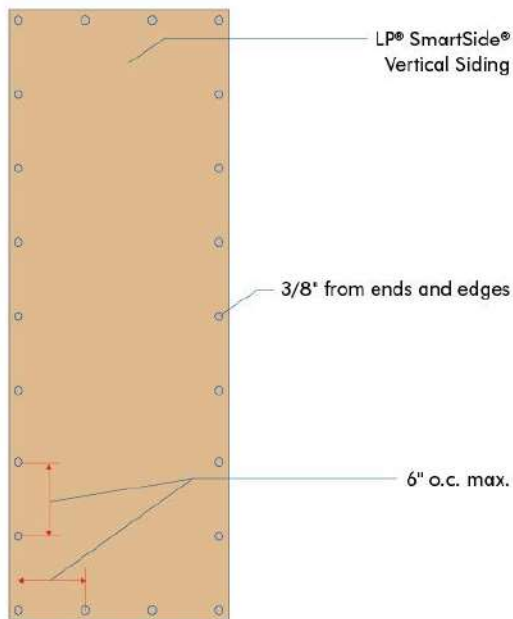


Figure 5. Vertical Siding

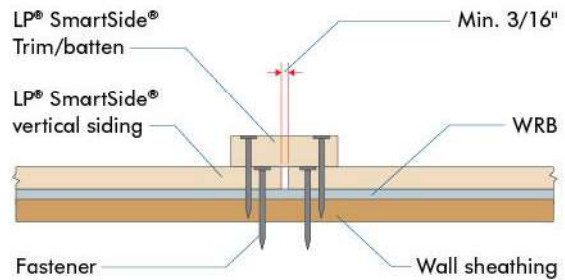


Figure 6. Vertical Siding attachment detail

Table 1. Allowable Racking Shear (plf) for LP SmartSide Strand Substrate Treated-Engineered-Wood Panel Siding Shear Walls with Framing of Douglas-Fir-Larch or Southern Pine for Wind or Seismic Loading^(1,2,3)

Performance Category	Min. Nail Penetration in Framing (inches)	Panels Applied Directly to Framing					Panels Applied Over Max. 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.

- ⁽¹⁾ For framing of other species: (a) find specific gravity for species of lumber in the National Design Specification for Wood Construction (NDS); (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.
- ⁽²⁾ All 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 and 7/16 Performance Category panels installed on studs spaced 24 inches o.c. For other conditions and panel performance categories, space nails 12 inches o.c. on intermediate supports.
- ⁽³⁾ For shear loads of normal or permanent load duration, the values in the table shall be multiplied by 0.63 or 0.56, respectively. For wind load applications, the values in the table shall be permitted to be multiplied by 1.4.
- ⁽⁴⁾ Framing 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 1-5/8 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.
- ⁽⁵⁾ Except as noted in Footnote 7, panel thickness at point of nailing at panel edges determines applicable shear values, except that 3/8 Performance Category panels nailed at shiplap edges use 5/16 Performance Category shear values, and 7/16 and 19/32 Performance Category panel sidings nailed at shiplap edges use 3/8 Performance Category shear values.
- ⁽⁶⁾ Shiplap 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.
- ⁽⁷⁾ Fasteners 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.
- ⁽⁸⁾ Fastener dimensions are as specified in ASTM F1667.

Table 2a. Lap Siding Installed Horizontally with 0.113" Nails⁽¹⁾ – **Max. Allowable Wind Speed, V_{asd} ⁽²⁾**

Performance Category	Max. Stud Spacing ⁽³⁾ (inches)	Siding Width (inches)	Max. Allowable Wind Pressure (psf)	Max. Allowable Wind Speed, V_{asd} ⁽⁴⁾ (mph)		
				Wind Exposure Category		
				B	C	D
3/8	16	5	80	170	150	140
		6	80	170	150	140
		7	80	170	150	140
		8	74	170	145	130
		9.5	61	150	130	120
		12	47	130	110	105
7/16	16	6	80	170	150	140
		7	80	170	150	140
		8	74	170	145	130
		9.5	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
		9.5	41	125	105	100
		12	31	110	90	85

For SI: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 0.447 m/s.

- ⁽¹⁾ Fasteners shall be permitted to be substituted on a one-for-one basis if the fastener has a minimum overall allowable withdrawal capacity and allowable fastener head pull-through capacity of 62 lbf/fastener or greater based on the load duration factor of 1.6. The fastener shall meet or exceed the corrosion-resistance of hot-dipped galvanized steel wire nails meeting the requirements of ASTM A153, Class D.
- ⁽²⁾ One fastener for each 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 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. **Lap siding is not a bracing material.**
- ⁽³⁾ Wall studs must have a minimum specific gravity of 0.42.
- ⁽⁴⁾ Three-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 and 2012 IRC, and Section 1609.1.1 of the 2009 IBC.

Table 2b. Lap Siding Installed Horizontally with 0.113" Nails⁽¹⁾ – **Max. Ultimate Wind Speed, V_{ult} ⁽²⁾**

Performance Category	Max. Stud Spacing ⁽³⁾ (inches)	Siding Width (inches)	Max. Ultimate Wind Pressure (psf)	Max. Ultimate Wind Speed, V_{ult} ⁽⁴⁾ (mph)		
				Wind Exposure Category		
				B	C	D
3/8	16	5	133	200 ⁽⁵⁾	180	180
		6	133	200 ⁽⁵⁾	180	180
		7	133	200 ⁽⁵⁾	180	180
		8	123	200 ⁽⁵⁾	180	160
		9.5	102	200 ⁽⁵⁾	160	150
		12	79	180	150	140
7/16	16	6	133	200 ⁽⁵⁾	180	180
		7	133	200 ⁽⁵⁾	180	180
		8	123	200 ⁽⁵⁾	180	160
		9.5	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
		9.5	68	160	140	130
		12	52	140	120	110

For SI: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 0.447 m/s.

- (1) Fasteners shall be permitted to be substituted on a one-for-one basis if the fastener has a minimum overall allowable withdrawal capacity and allowable fastener head pull-through capacity of 62 lbf/fastener or greater based on the load duration factor of 1.6. The fastener shall meet or exceed the corrosion-resistance of hot-dipped galvanized steel wire nails meeting the requirements of ASTM A153, Class D.
- (2) One fastener for each 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 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. **Lap siding is not a bracing material.**
- (3) Wall studs must have a minimum specific gravity of 0.42.
- (4) Three-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 7-16 and ASCE 7-10, Section R301.2.1 of the 2018 and 2015 IRC, and Section 1609.1.1 of the 2018, 2015, and 2012 IBC.
- (5) Table R301.2(2) of the 2018 and 2015 IRC is limited to a maximum ultimate design wind speed, V_{ult} , of 180 mph.

Table 2c. Lap Siding Installed Horizontally with 0.092" Nails – **Max. Allowable Wind Speed, $V_{asd}^{(1)}$**

Performance Category	Max. Stud Spacing ⁽²⁾ (inches)	Siding Width (inches)	Max. Allowable Wind Pressure (psf)	Max. Allowable Wind Speed, $V_{asd}^{(3)}$ (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
		9.5	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
		9.5	37	120	100	90
		12	28	105	90	-
	24	6	42	130	110	100
		7	35	120	100	90
		8	30	110	90	85
		9.5	25	100	85	-
		12	19	85	-	-

For SI: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 0.447 m/s.

- (1) One fastener for each 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 a hot dipped galvanized plain (smooth) shank nail, 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 1.5 inches. **Lap siding is not a bracing material.**
- (2) Wall studs must have a minimum specific gravity of 0.42.
- (3) Three-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 and 2012 IRC, and Section 1609.1.1 of the 2009 IBC.

Table 2d. Lap Siding Installed Horizontally with 0.092" Nails – **Max. Ultimate Wind Speed, $V_{ult}^{(1)}$**

Performance Category	Max. Stud Spacing ⁽²⁾ (inches)	Siding Width (inches)	Max. Ultimate Wind Pressure (psf)	Max. Ultimate Wind Speed, $V_{ult}^{(3)}$ (mph)		
				Wind Exposure Category		
				B	C	D
3/8	16	5	131	200 ⁽⁴⁾	180	180
		6	104	200 ⁽⁴⁾	160	160
		7	87	180	160	140
		8	75	160	140	130
		9.5	61	150	130	120
		12	47	140	115	-
7/16	16	6	104	200 ⁽⁴⁾	160	160
		7	87	180	160	140
		8	75	160	140	130
		9.5	61	150	130	120
		12	47	140	115	-
	24	6	70	160	140	130
		7	58	150	130	120
		8	50	140	120	110
		9.5	41	130	110	-
		12	32	110	-	-

For SI: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 0.447 m/s.

- (1) One fastener for each 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 a hot dipped galvanized plain (smooth) shank nail, 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 1.5 inches. **Lap siding is not a bracing material.**
- (2) Wall studs must have a minimum specific gravity of 0.42.
- (3) Three-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 7-16 and ASCE 7-10, Section R301.2.1 of the 2018 and 2015 IRC, and Section 1609.1.1 of the 2018, 2015, and 2012 IBC.
- (4) Table R301.2(2) of the 2018 and 2015 IRC is limited to a maximum ultimate design wind speed, V_{ult} , of 180 mph.

Table 3a. Panel Siding Installed Vertically with 0.113" Nails – Max. Allowable Wind Speed, V_{asd}

Performance Category	Max. Stud Spacing ⁽²⁾ (inches)	Fastener Spacing ⁽¹⁾ (inches o.c.)		Max. Allowable Wind Pressure (psf)	Max. Allowable Wind Speed, V _{asd} ⁽³⁾ (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 = 0.447 m/s.

- (1) Fasteners 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.
- (2) Wall studs must have a minimum specific gravity of 0.42.
- (3) Three-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 and 2012 IRC, and Section 1609.1.1 of the 2009 IBC.

Table 3b. Panel Siding Installed Vertically with 0.113" Nails – Max. Ultimate Wind Speed, V_{ult}

Performance Category	Max. Stud Spacing ⁽²⁾ (inches)	Fastener Spacing ⁽¹⁾ (inches o.c.)		Max. Ultimate Wind Pressure (psf)	Max. Ultimate Wind Speed, V _{ult} ⁽³⁾ (mph)		
		Edges	Field		Wind Exposure Category		
					B	C	D
3/8	16	6	12	72	160	140	130
			6	133	200 ⁽⁴⁾	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 ⁽⁴⁾	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 ⁽⁴⁾	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 = 0.447 m/s.

- (1) Fasteners 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.
- (2) Wall studs must have a minimum specific gravity of 0.42.
- (3) Three-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 7-16 and ASCE 7-10, Section R301.2.1 of the 2018 and 2015 IRC, and Section 1609.1.1 of the 2018, 2015, and 2012 IBC.
- (4) Table R301.2(2) of the 2018 and 2015 IRC is limited to a maximum ultimate design wind speed, V_{ult} , of 180 mph.

Table 3c. Panel Siding Installed Vertically with 0.092" Nails – **Max. Allowable Wind Speed, V_{asd}**

Performance Category	Max. Stud Spacing ⁽²⁾ (inches)	Fastener Spacing ⁽¹⁾ (inches o.c.)		Max. Allowable Wind Pressure	Max. Allowable Wind Speed, V _{asd} ⁽³⁾ (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 = 0.447 m/s.

- (1) Fasteners shall be a hot dipped galvanized plain (smooth) shank nail, 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 1.5 inches. **Configuration cannot be used for lateral bracing due to nail size.**
- (2) Wall studs must have a minimum specific gravity of 0.42.
- (3) Three-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 and 2012 IRC, and Section 1609.1.1 of the 2009 IBC.

Table 3d. Panel Siding Installed Vertically with 0.092" Nails – **Max. Ultimate Wind Speed, V_{ult}**

Performance Category	Max. Stud Spacing ⁽²⁾ (inches)	Fastener Spacing ⁽¹⁾ (inches o.c.)		Max. Ultimate Wind Pressure (psf)	Max. Ultimate Wind Speed, V _{ult} ⁽³⁾ (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 = 0.447 m/s.

- (1) Fasteners shall be a hot dipped galvanized plain (smooth) shank nail, 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 1.5 inches. **Configuration cannot be used for lateral bracing due to nail size.**
- (2) Wall studs must have a minimum specific gravity of 0.42.
- (3) Three-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 7-16 and ASCE 7-10, Section R301.2.1 of the 2018 and 2015 IRC, and Section 1609.1.1 of the 2018, 2015, and 2012 IBC.
- (4) Table R301.2(2) of the 2018 and 2015 IRC is limited to a maximum ultimate design wind speed, V_{ult} , of 180 mph.

Table 4a. Lap Siding Installed Horizontally to SIPs⁽¹⁾ or WSP Sheathing⁽⁵⁾ – **Max. Allowable Wind Speed, V_{asd}** ⁽²⁾

Minimum Performance Category	Max. Ring Shank Nail Spacing ⁽³⁾ (inches)	Siding Width (inches)	Max. Allowable Wind Pressure (psf)	Max. Allowable Wind Speed, V_{asd} ⁽⁴⁾ (mph)		
				Wind Exposure Category		
				B	C	D
3/8	8	5	80	170	150	140
		6	80	170	150	140
		7	80	170	150	140
		8	80	170	150	140
		9.5	77	170	150	130
		12	60	150	130	120
3/8	12	5	80	170	150	140
		6	80	170	150	140
		7	73	170	145	130
		8	62	150	130	125
		9.5	51	145	120	110
		12	40	125	105	90

For SI: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 0.447 m/s.

- (1) The facer of the structural insulated panels (SIPs) shall be 7/16 Performance Category or thicker OSB sheathing meeting DOC PS2 requirements.
- (2) The 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.**
- (3) Fasteners shall be a hot dipped galvanized ring shank nail, with a minimum shank diameter of 0.092 inch. Length shall be long enough to fully penetrate wood structural facer panel. One 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.
- (4) Three-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 and 2012 IRC, and Section 1609.1.1 of the 2009 IBC.
- (5) Wood structural panel (WSP) sheathing shall be minimum 7/16 Performance Category OSB or Group 1 plywood meeting DOC PS1 or DOC PS2 requirements.

Table 4b. Lap Siding Installed Horizontally to SIPs⁽¹⁾ or WSP Sheathing⁽⁶⁾ – **Max. Ultimate Wind Speed, V_{ult} ⁽²⁾**

Minimum Performance Category	Max. Ring Shank Nail Spacing ⁽³⁾ (inches)	Siding Width (inches)	Max. Ultimate Wind Pressure (psf)	Max. Ultimate Wind Speed, V_{ult} ⁽⁴⁾ (mph)		
				Wind Exposure Category		
				B	C	D
3/8	8	5	133	200 ⁽⁵⁾	180	180
		6	133	200 ⁽⁵⁾	180	180
		7	133	200 ⁽⁵⁾	180	180
		8	133	200 ⁽⁵⁾	180	180
		9.5	129	200 ⁽⁵⁾	180	170
		12	99	200 ⁽⁵⁾	170	150
3/8	12	5	133	200 ⁽⁵⁾	180	180
		6	133	200 ⁽⁵⁾	180	180
		7	121	200 ⁽⁵⁾	180	170
		8	104	200 ⁽⁵⁾	170	160
		9.5	86	180	150	140
		12	66	160	140	120

For SI: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 0.447 m/s.

- (1) The facer of the structural insulated panels (SIPs) shall be 7/16 Performance Category or thicker OSB sheathing meeting DOC PS2 requirements.
- (2) The 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.**
- (3) Fasteners shall be a hot dipped galvanized ring shank nail, with a minimum shank diameter of 0.092 inch. Length shall be long enough to fully penetrate wood structural facer panel. One 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.
- (4) Three-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 7-16 and ASCE 7-10, Section R301.2.1 of the 2018 and 2015 IRC, and Section 1609.1.1 of the 2018, 2015, and 2012 IBC.
- (5) Table R301.2(2) of the 2018 and 2015 IRC is limited to a maximum ultimate design wind speed, V_{ult} , of 180 mph.
- (6) Wood structural panel (WSP) sheathing shall be minimum 7/16 Performance Category OSB or Group 1 plywood meeting DOC PS1 or DOC PS2 requirements.

Table 5a. Panel Siding Installed Vertically to SIPs⁽¹⁾ or WSP Sheathing⁽⁵⁾ – **Max. Allowable Wind Speed, V_{asd} ⁽²⁾**

Performance Category	Maximum Ring Shank Nail Spacing ⁽³⁾ (inches o.c.)		Maximum Allowable Wind Pressure (psf)	Max. Allowable Wind Speed, V _{asd} ⁽⁴⁾ (mph)		
	Vertical	Horizontal		Wind Exposure Category		
				B	C	D
3/8	8	8	80	170	150	140
	10	10	52	145	120	110
	12	12	36	120	100	90
	16	16	20	90	-	-
7/16	8	8	80	170	150	140
	10	10	52	145	120	110
	12	12	36	120	100	90
	16	16	20	90	-	-
19/32	8	8	80	170	150	140
	10	10	52	145	120	110
	12	12	36	120	100	90
	16	16	20	90	-	-

For SI: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 0.447 m/s.

- (1) The facer of the structural insulated panels (SIPs) shall be 7/16 Performance Category or thicker OSB sheathing meeting DOC PS2 requirements.
- (2) The tabulated values represent the capacity of the LP Panel Siding installed in accordance with the requirements of this table. **The tabulated wind speed shall not exceed the SIP capacity for wind load resistance.**
- (3) Fasteners shall be a hot dipped galvanized ring shank nail, with a minimum shank diameter of 0.092 inch. Length shall be long enough to fully penetrate wood structural facer panel. Ring shank nails fastened in a grid as specified.
- (4) Three-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 and 2012 IRC, and Section 1609.1.1 of the 2009 IBC.
- (5) Wood structural panel (WSP) sheathing shall be minimum 7/16 Performance Category OSB or Group 1 plywood meeting DOC PS1 or DOC PS2 requirements.

Table 5b. Panel Siding Installed Vertically to SIPs⁽¹⁾ or WSP Sheathing⁽⁶⁾ – **Max. Ultimate Wind Speed, V_{ult} ⁽²⁾**

Performance Category	Maximum Ring Shank Nail Spacing ⁽³⁾ (inches o.c.)		Maximum Ultimate Wind Pressure (psf)	Max. Allowable Wind Speed, V _{ult} ⁽⁴⁾ (mph)		
				Wind Exposure Category		
	Vertical	Horizontal		B	C	D
3/8	8	8	133	200 ⁽⁵⁾	180	180
	10	10	87	180	160	140
	12	12	61	150	130	120
	16	16	34	120	-	-
7/16	8	8	133	200 ⁽⁵⁾	180	180
	10	10	87	180	160	140
	12	12	61	150	130	120
	16	16	34	120	-	-
19/32	8	8	133	200 ⁽⁵⁾	180	180
	10	10	87	180	160	140
	12	12	61	150	130	120
	16	16	34	120	-	-

For SI: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 0.447 m/s.

- (1) The facer of the structural insulated panels (SIPs) shall be 7/16 Performance Category or thicker OSB sheathing meeting DOC PS2 requirements.
- (2) The tabulated values represent the capacity of the LP Panel Siding installed in accordance with the requirements of this table. **The tabulated wind speed shall not exceed the SIP capacity for wind load resistance.**
- (3) Fasteners shall be a hot dipped galvanized ring shank nail, with a minimum shank diameter of 0.092 inch. Length shall be long enough to fully penetrate wood structural facer panel. Ring shank nails fastened in a grid as specified.
- (4) Three-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 7-16 and ASCE 7-10, Section R301.2.1 of the 2018 and 2015 IRC, and Section 1609.1.1 of the 2018, 2015, and 2012 IBC.
- (5) Table R301.2(2) of the 2018 and 2015 IRC is limited to a maximum ultimate design wind speed, V_{ult} , of 180 mph.
- (6) Wood structural panel (WSP) sheathing shall be minimum 7/16 Performance Category OSB or Group 1 plywood meeting DOC PS1 or DOC PS2 requirements.

Table 6a. Vertical Siding or Lap Siding Installed Vertically – **Max. Allowable Wind Speed, $V_{asd}^{(1)}$**

Perf. Category	Siding Type	Siding Width (inches)	Fastener Edge Spacing (inches o.c.)	Max. Allowable Wind Pressure (psf)	Max. 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
		9.5 ⁽³⁾		46	130	110	105
		12 ⁽³⁾		36	120	100	90
		6 ⁽³⁾	12 ⁽⁵⁾	72	170	145	130
7/16	Lap Siding Installed Vertically	7 ⁽³⁾		62	150	130	120
		8 ⁽³⁾		54	145	125	110
		9.5 ⁽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 = 0.447 m/s.

- (1) Siding shall be installed over 7/16 Performance Category or thicker wood structural panel sheathing meeting DOC PS1 or DOC PS2 requirements.
- (2) Vertical Siding installed in accordance with Figures 2, 5, and 6.
- (3) Lap Siding installed vertically in accordance with Figure 1 through 4.
- (4) Fasteners must be ring shank 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.
- (5) Fasteners must be ring shank 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.
- (6) Three-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 and 2012 IRC, and Section 1609.1.1 of the 2009 IBC.

Table 6b. Vertical Siding or Lap Siding Installed Vertically - **Max. Ultimate Wind Speed, $V_{ult}^{(1)}$**

Perf. Category	Siding Type	Siding Width (inches)	Fastener Edge Spacing (inches o.c.)	Max. Ultimate Wind Pressure (psf)	Max. Ultimate Wind Speed, $V_{ult}^{(6)}$ (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
		9.5 ⁽³⁾		76	160	150	130
		12 ⁽³⁾		60	150	130	120
		6 ⁽³⁾	12 ⁽⁵⁾	120	200	180	160
7/16	Lap Siding Installed Vertically	7 ⁽³⁾		103	200	160	160
		8 ⁽³⁾		90	180	160	150
		9.5 ⁽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 = 0.447 m/s.

- (1) Siding shall be installed over 7/16 Performance Category or thicker wood structural panel sheathing meeting DOC PS1 or DOC PS2 requirements.
- (2) Vertical Siding installed in accordance with Figures 2, 5, and 6.
- (3) Lap Siding installed vertically in accordance with Figure 1 through 4.
- (4) Fasteners must be ring shank 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 2, 5, and 6.
- (5) Fasteners must be ring shank 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 batten in accordance with Figures 1 and 4.
- (6) Three-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 7-16 and ASCE 7-10, Section R301.2.1 of the 2018 and 2015 IRC, and Section 1609.1.1 of the 2018, 2015, and 2012 IBC.

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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 $\frac{3}{8}$ 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, $\frac{3}{4}$ 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 $\frac{7}{16}$ 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 $\frac{7}{16}$ 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, Minnetonka, 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
414 UNION STREET, SUITE 2000
NASHVILLE, TENNESSEE 37219
(888) 820-0325
www.LPcorp.com
marketing.center@lpcorp.com

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 5/8 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 $\frac{3}{4}$ 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 $\frac{3}{4}$ 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 $\frac{3}{4}$ 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 $1\frac{1}{2}$ 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-feet 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	--
		6	70	160	140	130
	24	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 $\frac{3}{4}$ 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-feet 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-feet 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-feet 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 $\frac{3}{4}$ 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 $\frac{3}{4}$ 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} ⁵ (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.

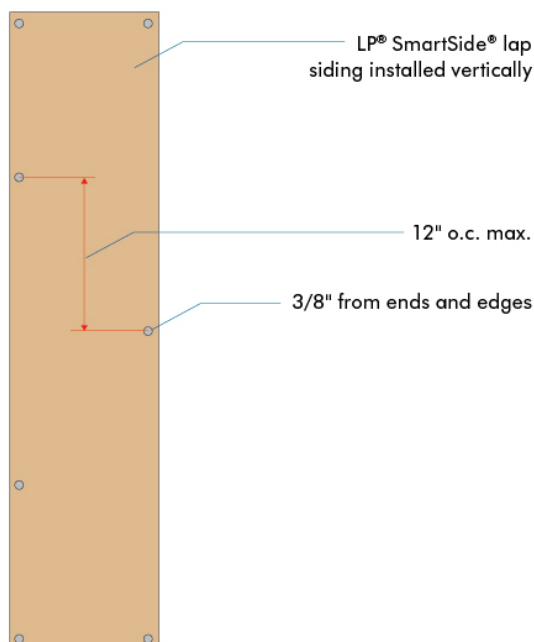


FIGURE 1—LAP SIDING INSTALLED VERTICALLY

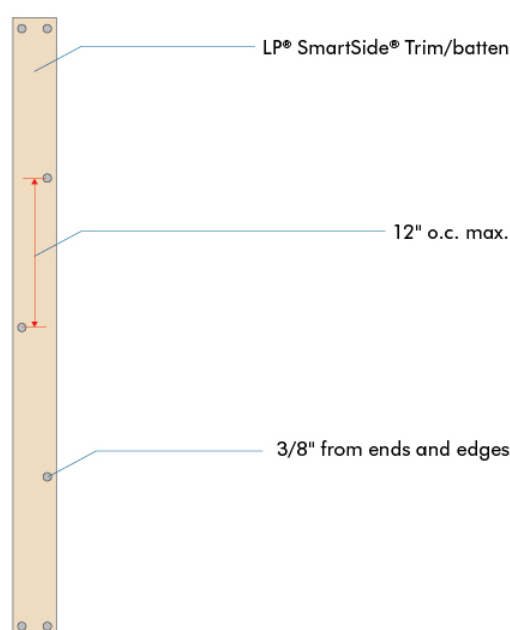


FIGURE 2—LP® SMARTSIDE® TRIM/BATTEN

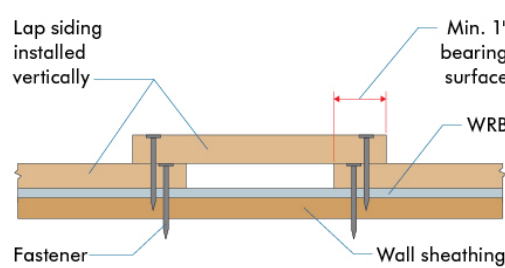


FIGURE 3—LAP SIDING ATTACHMENT DETAIL

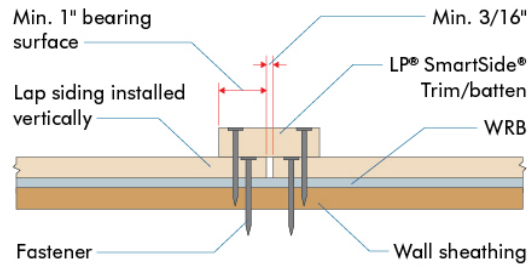


FIGURE 4—LP® SMARTSIDE® TRIM/BATTEN ATTACHMENT DETAIL

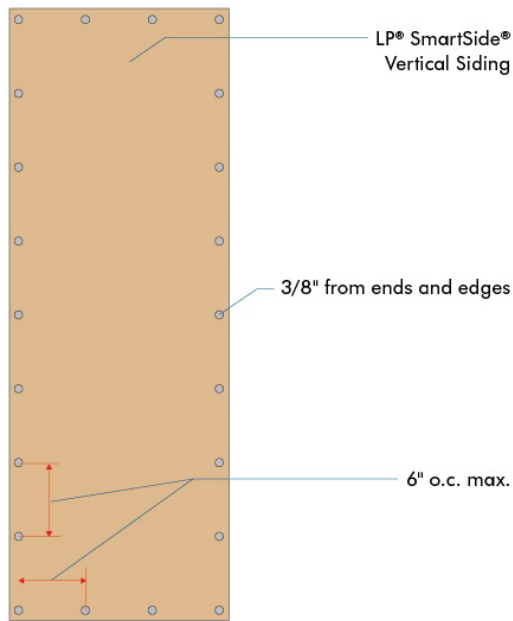


FIGURE 5—VERTICAL SIDING

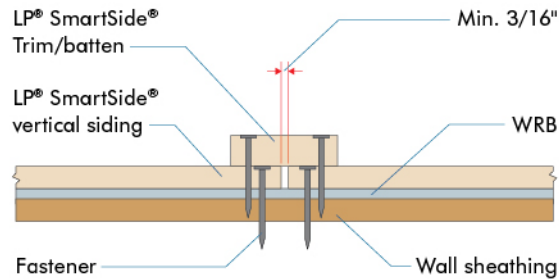


FIGURE 6—VERTICAL SIDING ATTACHMENT DETAIL

DISCLAIMER

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ICC-ES Evaluation Report

ESR-1301 LABC and LARC Supplement

Issued April 2020

This report is subject to renewal February 2022.

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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, issued February 2020 and revised April 2020

LP® SmartSide® 38 Series Strand Substrate Vertical Siding for Board & Batten Applications

This Technical Note provides guidance for the application of LP® SmartSide® 38 Series Strand Substrate Vertical Siding for Board & Batten Applications. Additional application information may be found in LP® SmartSide® Strand Substrate Panel Siding Application Instructions and LP® SmartSide® Trim and Fascia Application Instructions.

LP SmartSide 38 Series Strand Substrate Vertical Siding may be installed in Board & Batten application, according to the following requirements.

- Siding must be installed over a minimum 7/16 Category wood structural panels with an APA Trademark that contains the consensus Standard DOC PS 1 or PS 2.
 - Exception: LP® FlameBlock® Fire-Rated OSB Sheathing
- Vertical Siding or Batten may only span one plate-to-plate. Due to plate shrinkage, each vertical application is not to span beyond one floor to ceiling distance, or one floor to top of gable distance. *(See Figures 5a & 5b)*
- Vertical Siding SHALL NOT be installed horizontally.
- Battens may be a minimum 0.5 x 1.5 inches (13 x 38 mm) wide [actual size].
 - Caution: When selecting a batten less than 2.5 inches (64 mm) wide [actual size] it may be difficult for batten to conceal nail heads on vertical siding.
 - Visible nail heads that are not covered by battens are an aesthetic issue and not covered by the LP SmartSide Limited Warranty.
- **Must be installed over non-compressible drainable housewrap to provide drainage behind siding.**
- Finish/Paint:
 - Prime and paint all field cuts and exposed ends following the paint manufacturer's instructions
- Vertical Siding must be spaced a minimum of 3/16 inch (5 mm). *(See Figure 4a & 4b)*
- Sealant is not required in any vertical joint covered by Batten and backed by a WRB.
- Minimum Fastener Type for **Vertical Siding**:
 - Corrosion Resistant = hot-dip galvanized (ASTM A153) or equivalent
 - Ring Shank
 - Shank diameter = 0.092 inch
 - Length = fastener shall be long enough to fully penetrate wood structural panel sheathing by at least 1/4 inch (6 mm). Ensure that the ring shanks of the nail fully engage the sheathing.
 - Caution: Choose a fastener length that will not damage wiring or other utilities in the exterior wall assembly

- Fastener Placement for **Vertical Siding**:
 - Maximum 3/8 inch (10 mm) from ends and edges *(See Figure 3c)*
- Fastener Spacing for **Vertical Siding**:
 - Fastened a maximum of 6 inches (152 mm) o.c. along the perimeter *(See Figure 3c)*
- Minimum Fastener Type for **Batten**:
 - Corrosion Resistant = hot-dip galvanized (ASTM A153) or equivalent
 - Ring Shank
 - Ring Shank nails provide superior resistance to fastener pull-through. In Hurricane-Prone Regions or locations where negative wind loads are a concern, ring shank nails should be used.
 - Trim nails may be used in other locations with the following cautions: Do not overdrive or counter sink the fastener, nail flush with the surface of batten. Batten nails shall be installed per the length, placement, spacing and quantity requirements listed in this document. Detachment of batten is not covered by the LP SmartSide limited warranty whether ring shank or trim nails are used.
 - Shank diameter = 0.092 inch
 - Length = fastener shall be long enough to fully penetrate Vertical Siding by at least 1/4 inch (6 mm) *(See Figure 4a & 4b)*
 - Caution: Choose a fastener length that will not damage wiring or other utilities in the exterior wall assembly
- Fastener Placement for **Battens**:
 - Maximum 3/8 inch (10 mm) from ends and edges *(See Figure 3a or 3b)*
- Fastener Spacing for **Battens**:
 - Fastened with two nails at both ends, with additional fasteners spaced a max. of 12 inches (305 mm) o.c. along alternating edges the length of the batten *(See Figure 3a)*
 - Exception: For battens less than 2.5 inches (64 mm) wide, 1 nail is required at each end, with additional fasteners spaced a maximum of 24 inches (305 mm) o.c. along alternating edges *(See Figure 3b)*
- **DO NOT bridge floors with Vertical Siding or Battens.** *(See Figure 5a)*
 - Create a horizontal joint between floors.
 - Horizontal joint must be flashed with sloped metal Z-flashing
- Vertical Siding must be applied in a manner that will not allow moisture intrusion or water buildup.
- All other requirements of the LP® SmartSide® Panel Siding Application Instructions and LP® SmartSide® Trim and Fascia Application Instructions must be followed.
- When using SmartSide siding with other siding products like stucco, brick or cultured stone veneers it is important to use a capillary break so moisture absorbed into those veneers cannot be transferred into siding. Separate SmartSide siding from veneers with minimum 3/8 inch (10 mm) space for horizontal or vertical joints, use sealant. Backer rod may be required by the sealant manufacturer. *(See Figure 6)*

**Preferred Batten
2.5" (64 mm) wide
or greater**

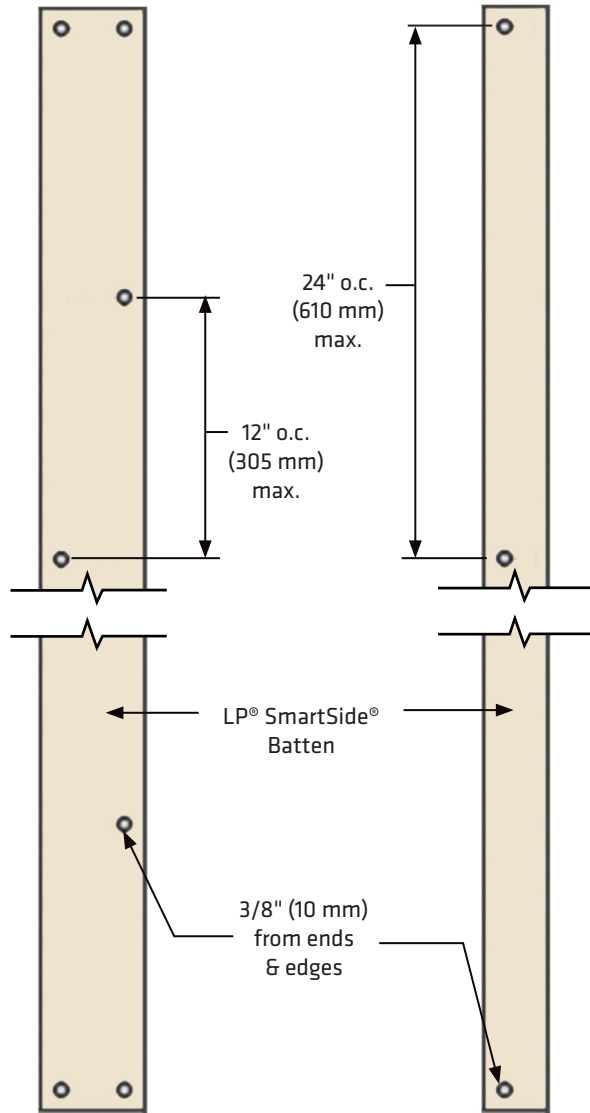


Figure 3a

**Alternate Batten less than
2.5" (64 mm) wide**

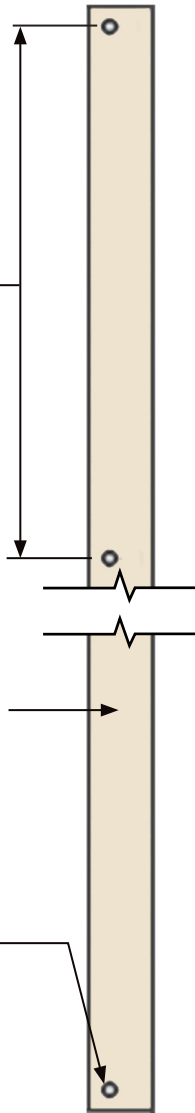


Figure 3b

Vertical Siding

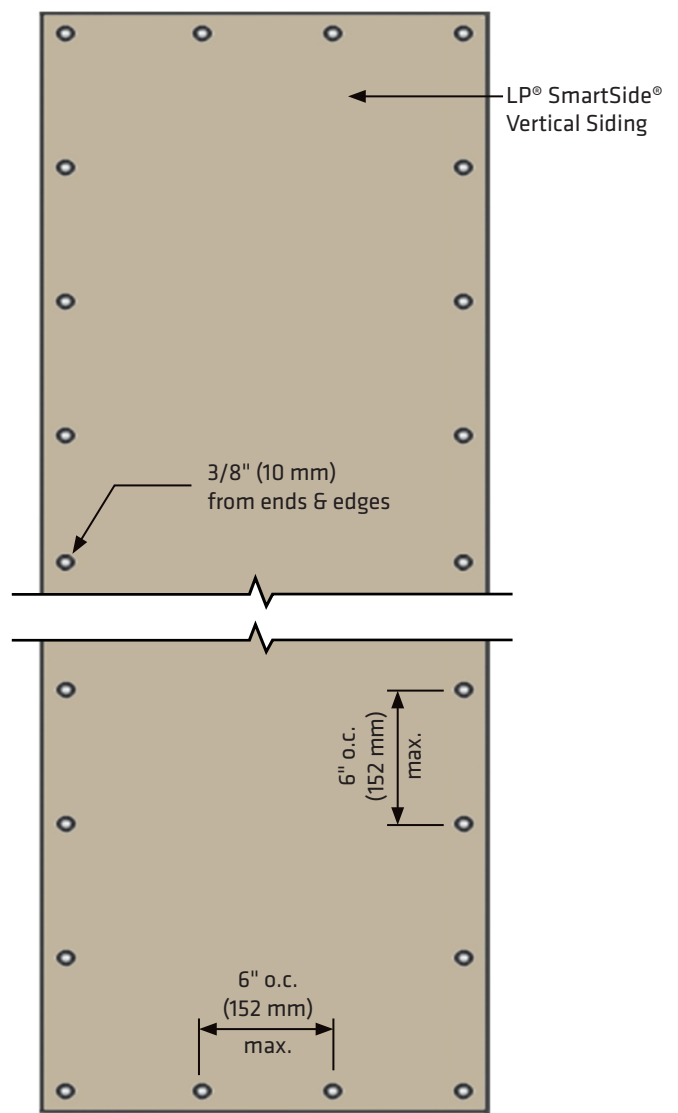


Figure 3c

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Preferred Batten Attachment 2.5" (64 mm) wide or greater

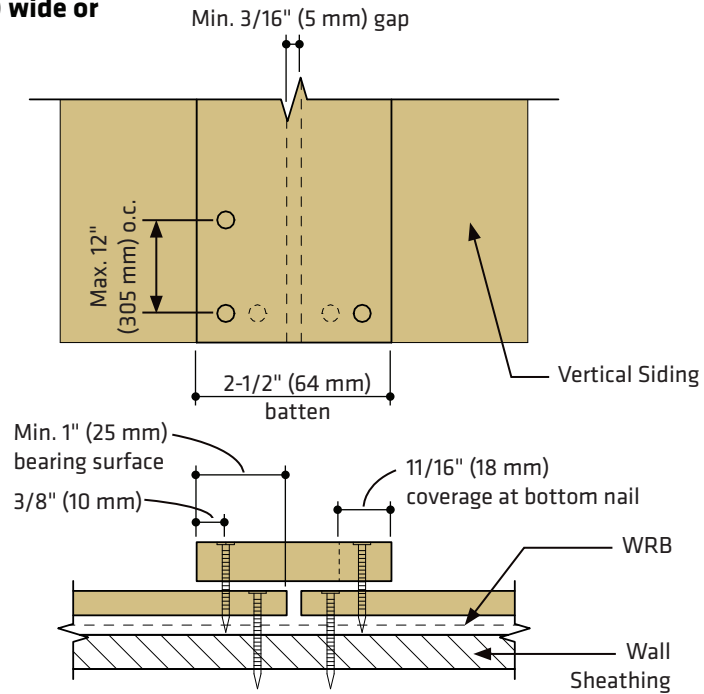


Figure 4a

Alternate Batten Attachment less than 2.5" (64 mm) wide

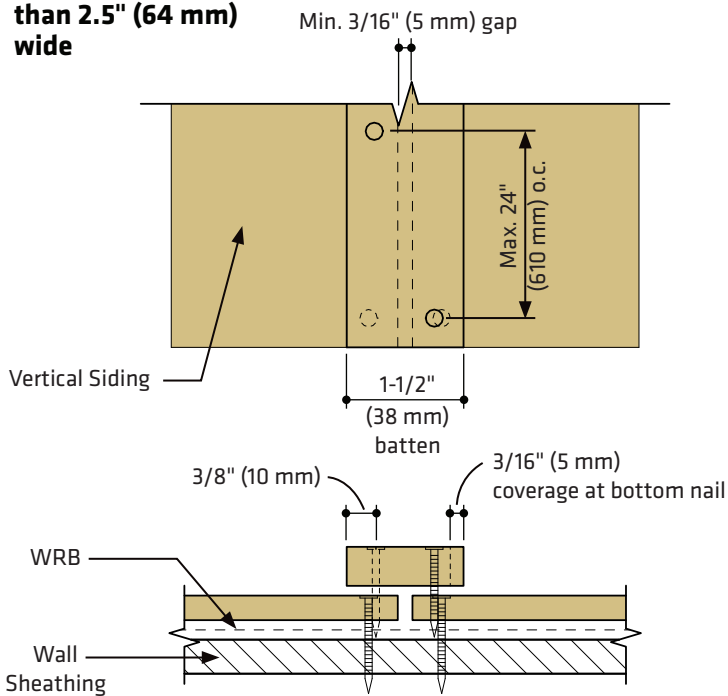


Figure 4b

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**Two Story
One Floor to Ceiling
Horizontal Joint Between Floors**

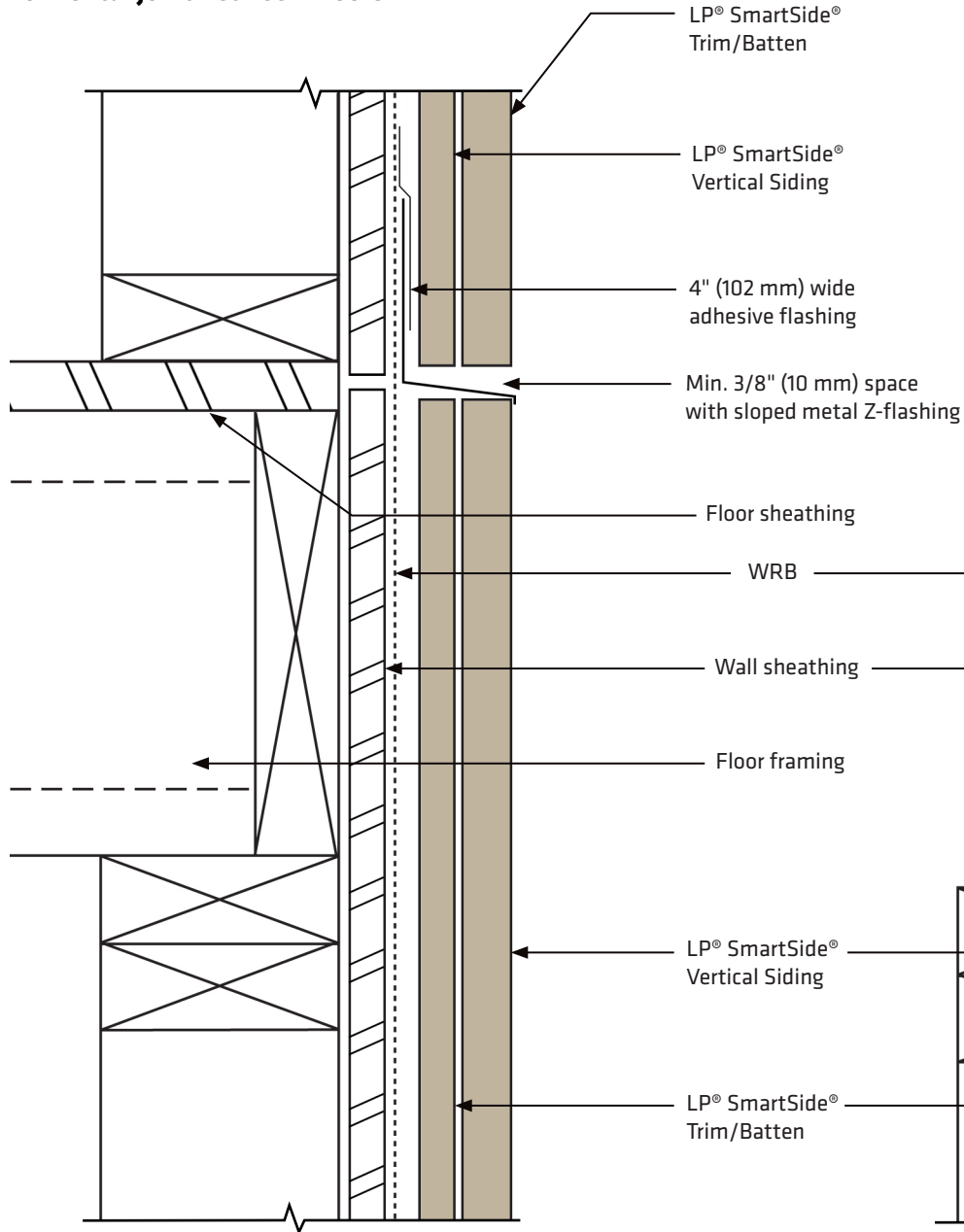


Figure 5a

**One Story
One Plate-to-Plate**

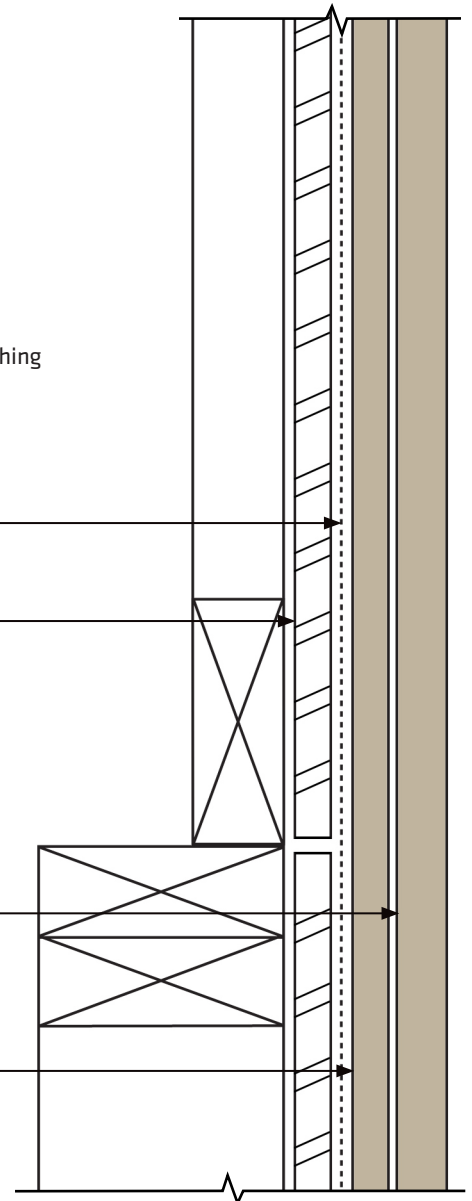


Figure 5b

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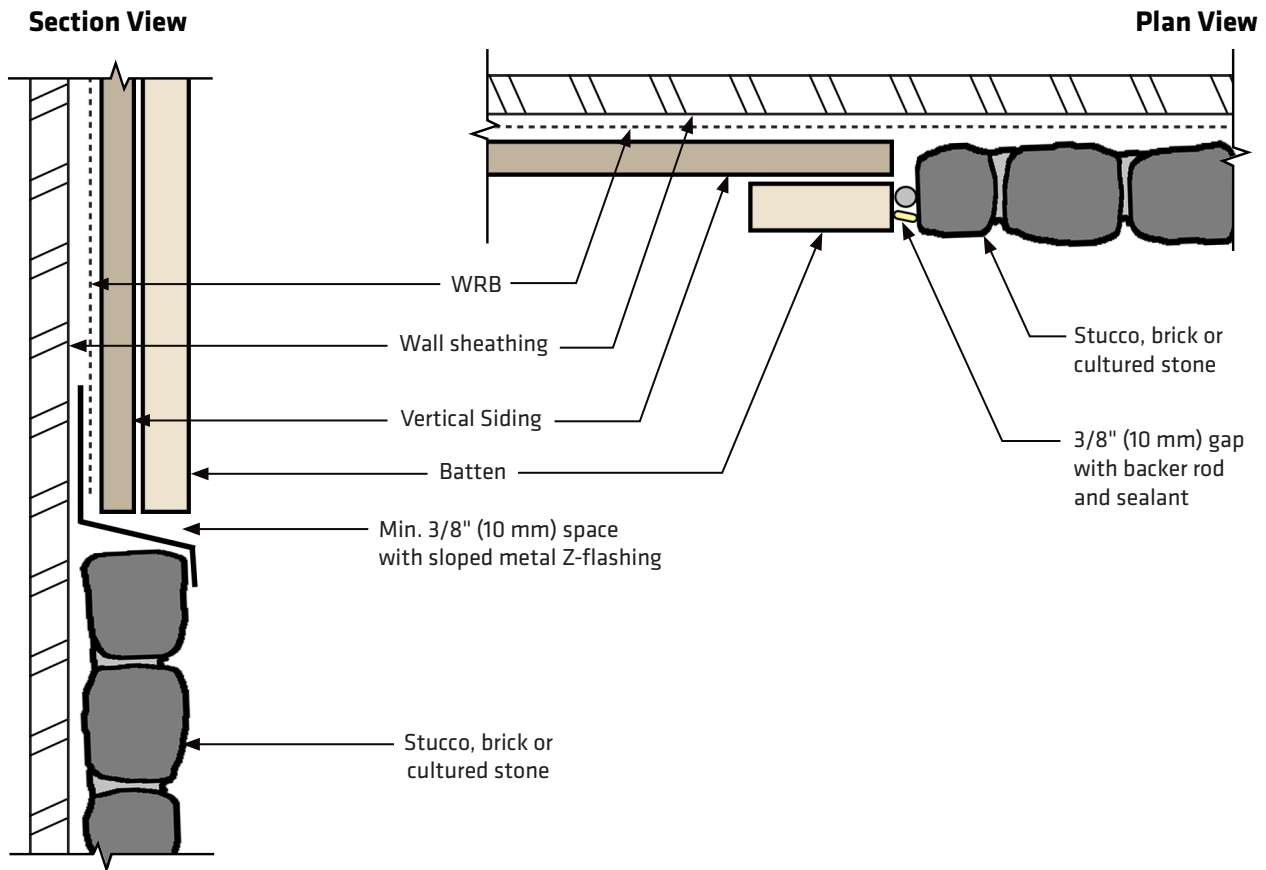


Figure 6

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Installing LP® SmartSide® Trim and Lap Siding on Concrete or Masonry Walls over Furring Strips (V_{ult} Wind Speeds)

This Technical Note is an addendum to the LP® SmartSide® Trim and Fascia, and LP® SmartSide® Lap siding Application Instructions (“Instructions”). It is intended to provide an alternative fastening option for LP SmartSide trim and lap siding on concrete or masonry walls over furring strips. The Instructions remain effective except as may be modified by this Note. Refer to the Instructions for all other aspects of product installation.

Trim and lap siding may be installed on concrete or masonry walls over furring strips:

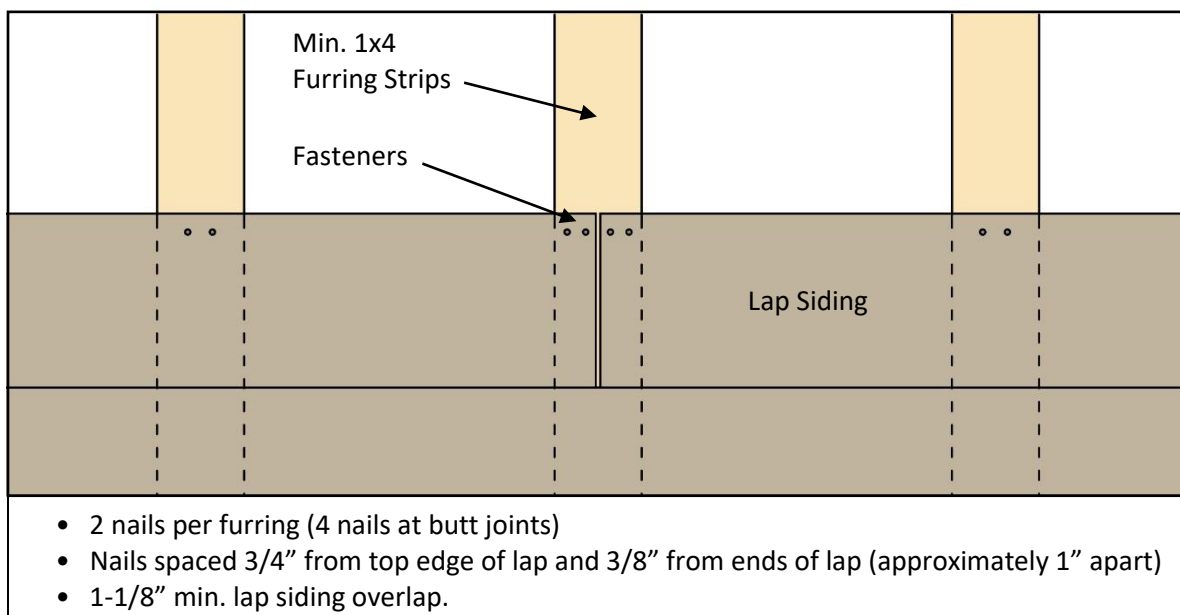
- Trim and lap siding must be installed over a minimum 1x4 nominal size Southern Pine furring strips with a specific gravity greater than or equal to 0.55.
 - Install furring strips no more than 16”o.c. in wind speed areas less than or equal to 200 MPH¹
- Siding shall be installed to safely support all loads, including wind loads, of the locally adopted building codes. The installation of siding shall result in a system that provides a load path that meets the requirements for the transfer of loads from their point of origin through the load-resisting elements to the structure. The mechanical connection of the furring strip to the concrete or masonry structure is the responsibility of a design professional. LP assumes no liability for any loss or damage caused by the design of the mechanical connection of the furring strip to the concrete or masonry structure and is expressly released by the purchaser or owner from any such loss or liability.
- Minimum Fastener Type:
 - Corrosion Resistant – Hot Dipped Galvanized or equal (ASTM A153)²
 - Ring Shank³
 - Shank diameter = 0.120 inch
 - Head diameter = 0.270 inch
 - Length = fastener shall fully penetrate a minimum 1/2 inch into nailable furring

Caution: fastener shall not bottom out on masonry wall leaving the fastener head less than flush with the face of trim or siding.

- The IRC and Florida Residential Code require a water-resistant barrier be used on all exterior walls, except over concrete or masonry walls per Exception 1 in Section R703.1.1 of both Codes. LP always requires the use of a WRB behind LP® SmartSide® products. LP has no responsibility for any damage arising from a failure to use a WRB.

Lap Siding

- Limitations:
 - For use with Strand substrate lap (all widths) and/or Fiber substrate lap (up to 8 inches wide only)
 - Excluding Cedar Shake Fiber Lap, Bold Profiles Fiber Lap, Self-Aligning Fiber Lap, and SmartLock™ Strand Lap
- Fastening Requirements:
 - Place fasteners 3/4 inch from top edge of lap siding
 - Increase minimum lap siding overlap to 1-1/8 inch
 - Blind nail two fasteners per furring strip (**every 16" o.c.**)



Trim

- Limitations:
 - In Hurricane-Prone Regions or locations where negative wind loads are a concern, box or common nails should be used.
 - Trim nails may be used in Non-Hurricane-Prone Regions with the following cautions: Do not overdrive or counter sink the fastener, nail flush with the surface of trim. Detachment of trim is not covered by the LP® SmartSide® limited warranty whether common, box, or trim nails are used.
- Fastening Requirements:
 - Two fasteners spaced a maximum of every 24 inches o.c. along the length of the trim, or two fasteners at both ends with additional fasteners spaced a maximum of every 12 inches o.c. along alternating edges the length of the trim.
 - Trim under 7 inches wide use a minimum of 2 nails per width. Trim 7 to 12 inches wide use a minimum of 3 nails per width. Trim over 12 inches wide use a minimum of 4 nails per width.

¹ Wind speed is Ultimate Design Wind Speed/ Zone 5/ 10 ft²/ 30 foot height.

² Corrosion resistance and capable of preventing rust, stain and deterioration of the fasteners under normal outdoor environmental conditions for a period of no less than 50 years. For further information or guidance, consult your nail supplier/manufacturer.

³ Ring shank nails shall be capable of the performance specified in Table 1A Ring-Shank Nail Withdrawal Loads of APA publication TT-109, *Wood Structural Panels Used as Nailable Sheathing* when tested in accordance with ASTM D 1761, *Standard Test Method for Mechanical Fasteners in Wood* and NDS-2015. For further information or guidance, consult your nail supplier/manufacturer.