

HardiePlank® **HL5** Lap Siding

INSTALLATION REQUIREMENTS - PRIMED & COLORPLUS® PRODUCTS



EFFECTIVE FEBRUARY 2014



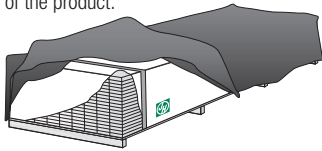
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IMPORTANT: FAILURE TO INSTALL AND FINISH THIS PRODUCT IN ACCORDANCE WITH APPLICABLE BUILDING CODES AND JAMES HARDIE WRITTEN APPLICATION INSTRUCTIONS MAY LEAD TO PERSONAL INJURY, AFFECT SYSTEM PERFORMANCE, VIOLATE LOCAL BUILDING CODES, AND VOID THE PRODUCT ONLY WARRANTY. BEFORE INSTALLATION, CONFIRM THAT YOU ARE USING THE CORRECT HARDIEZONE INSTRUCTIONS. TO DETERMINE WHICH HARDIEZONE APPLIES TO YOUR LOCATION, VISIT WWW.HARDIEZONE.COM OR CALL 1-866-942-7343 (866 9HARDIE)

STORAGE & HANDLING:

Store flat and keep dry and covered prior to installation. Installing siding wet or saturated may result in shrinkage at butt joints. Carry planks on edge. Protect edges and corners from breakage. James Hardie is not responsible for damage caused by improper storage and handling of the product.



CUTTING INSTRUCTIONS

OUTDOORS

- Position cutting station so that wind will blow dust away from user and others in working area.
- Use one of the following methods:
 - Best: i. Shears (manual, electric or pneumatic)
 - Better: i. Dust reducing circular saw equipped with a HardieBlade® saw blade and HEPA vacuum extraction
 - Good: i. Dust reducing circular saw with a HardieBlade saw blade (only use for low to moderate cutting)

INDOORS

- Cut only using shears (manual, electric or pneumatic).
 - Position cutting station in well-ventilated area
- NEVER use a power saw indoors
 - NEVER use a circular saw blade that does not carry the HardieBlade saw blade trademark
 - NEVER dry sweep – Use wet suppression or HEPA Vacuum

Important Note: For maximum protection (lowest respirable dust production), James Hardie recommends always using "Best"-level cutting methods where feasible.

NIOSH-approved respirators can be used in conjunction with above cutting practices to further reduce dust exposures. Additional exposure information is available at www.jameshardie.com to help you determine the most appropriate cutting method for your job requirements. If concern still exists about exposure levels or you do not comply with the above practices, you should always consult a qualified industrial hygienist or contact James Hardie for further information.

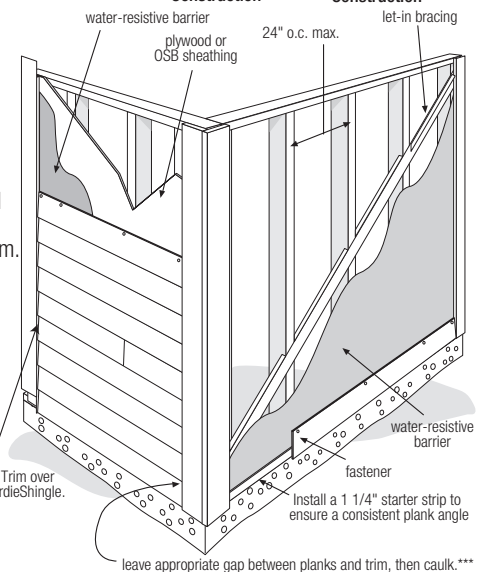
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IMPORTANT: To prevent damage to the drip edge, extra care should be taken when removing planks from the pallet, while handling, and when installing with a lap gauge. Please see additional handling requirements on page 4.

GENERAL REQUIREMENTS:

- References to the 2005 National Building Code (NBC) of Canada are made throughout this document. Local building code requirements may supersede the NBC in some locations.
- Where local building code requires a capillary break (Rainscreens, Furring, Etc.), fastener specifications per the CCMC can still be used as long as the required fastener penetration is achieved into an approved nailable substrate.
- HardiePlank® lap siding can be installed over braced wood or steel studs spaced a maximum of 610mm (24") o.c. or directly to minimum 11.1mm (7/16") thick OSB sheathing*. See general fastening requirements. Irregularities in framing and sheathing can mirror through the finished application. HardiePlank lap siding can also be installed over furring strips (in accordance with local building code requirements).
- HardiePlank lap siding can also be installed over foam insulation/sheathing up to 25mm (1") thick. When using foam insulation/sheathing, avoid over-driving nails (fasteners), which can result in dimpling of the siding due to the compressible nature of the foam insulation/sheathing. Extra caution is necessary if power-driven nails (fasteners) are used for attaching siding over foam insulation/sheathing.
- A water-resistive barrier is required in accordance with Part 9.27.3.2 of the NBC. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with Part 9.27.3 of the NBC. **James Hardie will assume no responsibility for water infiltration.**
- When installing James Hardie products all clearance details in figs. 3-14 must be followed.
- Adjacent finished grade must slope away from the building in accordance with local building codes.
- Do not use HardiePlank® lap siding in Fascia or Trim applications.
- Do not install James Hardie products, such that they may remain in contact with standing water.
- HardiePlank lap siding may be installed on flat vertical wall applications only.
- DO NOT use stain, oil/alkyd base paint, or powder coating on James Hardie® Products.
- For larger projects, including commercial and multi-family projects, where the span of the wall is significant in length, the designer and/or architect should take into consideration the coefficient of thermal expansion and moisture movement of the product in their design. These values can be found in the Technical Bulletin "Expansion Characteristics of James Hardie® Siding Products" at www.JamesHardie.com.

Figure 1 Double Wall Construction Single Wall Construction



INSTALLATION: JOINT TREATMENT

One or more of the following joint treatment options are required by code (as referenced 2009 IRC R703.3.2)

- Joint Flashing (James Hardie recommended)
- Caulking* (Caulking is not recommended for ColorPlus for aesthetic reasons as the Caulking and ColorPlus will weather differently. For the same reason, do not caulk nail heads on ColorPlus products.)
- "H" jointer cover

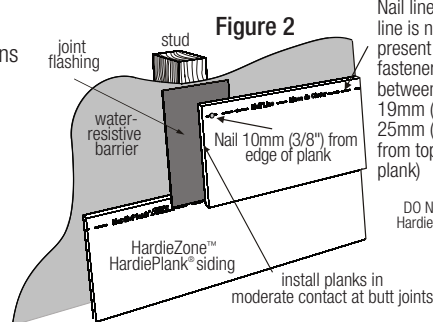


Figure 2
Nail line (If nail line is not present place fastener between 19mm (3/4") & 25mm (1") from top of plank)

DO NOT Install Trim over HardiePlank /HardieShingle.

Install a 1/4" starter strip to ensure a consistent plank angle
leave appropriate gap between planks and trim, then caulk.***

Note: Field painting over caulking may produce a sheen difference when compared to the field painted PrimePlus. *Refer to Caulking section in these instructions.

WARNING: AVOID BREATHING SILICA DUST

James Hardie® products contain respirable crystalline silica, which is known to the State of California to cause cancer and is considered by IARC and NIOSH to be a cause of cancer from some occupational sources. Breathing excessive amounts of respirable silica dust can also cause a disabling and potentially fatal lung disease called silicosis, and has been linked with other diseases. Some studies suggest smoking may increase these risks. During installation or handling: (1) work in outdoor areas with ample ventilation; (2) use fiber cement shears for cutting or, where not feasible, use a HardieBlade® saw blade and dust-reducing circular saw attached to a HEPA vacuum; (3) warn others in the immediate area; (4) wear a properly-fitted, NIOSH-approved dust mask or respirator (e.g. N-95) in accordance with applicable government regulations and manufacturer instructions to further limit respirable silica exposures. During clean-up, use HEPA vacuums or wet cleanup methods - never dry sweep. For further information, refer to our installation instructions and Material Safety Data Sheet available at www.jameshardie.com or by calling 1-800-9HARDIE (1-800-942-7343). FAILURE TO ADHERE TO OUR WARNINGS, MSDS, AND INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

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CLEARANCE AND FLASHING REQUIREMENTS

Figure 3
Roof to Wall

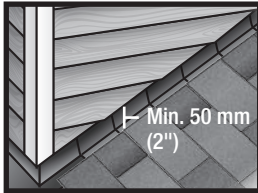


Figure 4
Horizontal Flashing

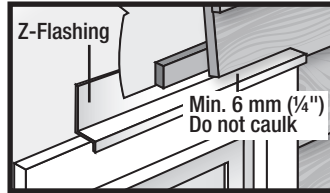


Figure 5
Kickout Flashing

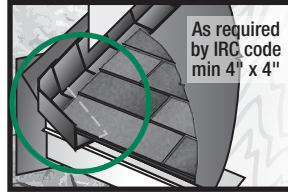


Figure 6
Slabs, Path, Steps to Siding

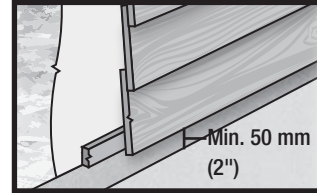


Figure 7
Deck to Wall

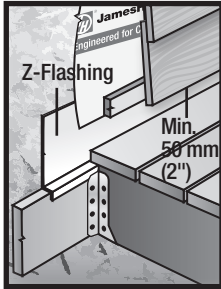


Figure 8
Ground to Siding

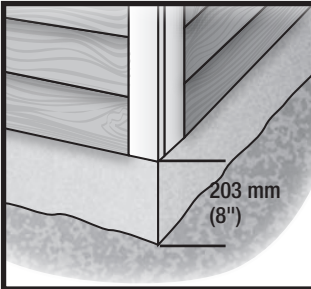


Figure 9
Gutter to Siding

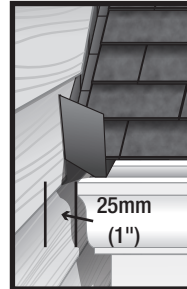


Figure 10
Sheltered Areas

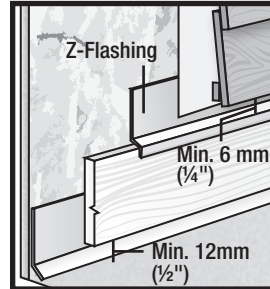


Figure 11
Mortar/Masonry

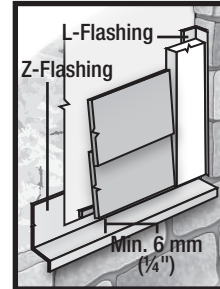


Figure 12
Drip Edge

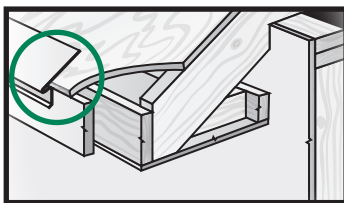


Figure 13
Block Penetration

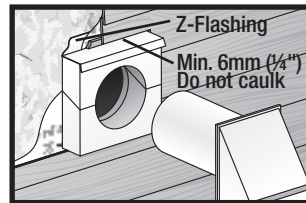
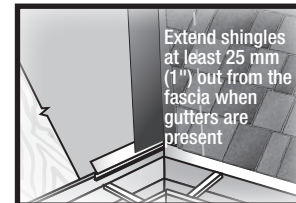


Figure 14
Valley/Shingle Extension



FASTENER REQUIREMENTS**

Blind Nailing is the preferred method of installation for HardiePlank® lap siding products. Face nailing should only be used where required by code for high wind areas and must not be used in conjunction with Blind nailing (Please see JH Tech bulletin 17 for exemption when doing a repair). **For Fastening schedule refer to Wind Load Table on page 4 of this document. Pin-backed corners may be done for aesthetic purposes only. Pin-backs shall be done w/finish nails only, and are not a substitute for blind or face nailing.**

BLIND NAILING

Corrosion Resistant Nails (galvanized or stainless steel)

- Roofing nail (3 mm shank x 9.5 mm HD x 32 mm (1 1/4") long)
- Minimum Requirement: Siding nail (2.4 mm shank x 5.6 mm HD x 50 mm (2") long)

Corrosion Resistant Screws

- Ribbed wafer-head or equivalent (No. 8 x 9.5 mm HD x 32 mm (1 1/4") long). Screws must penetrate 6 mm or 3 full threads into metal framing.

Corrosion Resistant Fasteners

ET & F Panelfast (2.5mm shank x 8mm HD x 38mm (1 1/2") long)

FACE NAILING

Corrosion Resistant Nails (galvanized or stainless steel)

- 6d common nail (2.9 mm shank x 6.7 mm HD x 50 mm (2") long)
- Siding nail (2.3 mm shank x 5.6 mm HD x 50 mm (2") long)
- Siding nail (2.3 mm shank x 5.6 mm HD x 38 mm (1 1/2") long)*

Corrosion Resistant Screws

Ribbed bugle-head or equivalent (No. 8-18 x 8.2 mm HD x 41 mm (1 5/8") long). Screws must penetrate 6 mm or 3 threads into metal framing.

Corrosion Resistant Fasteners

ET & F pin (2.5mm shank x 6.4mm HD x 38mm (1 1/2") long)

Figure 15

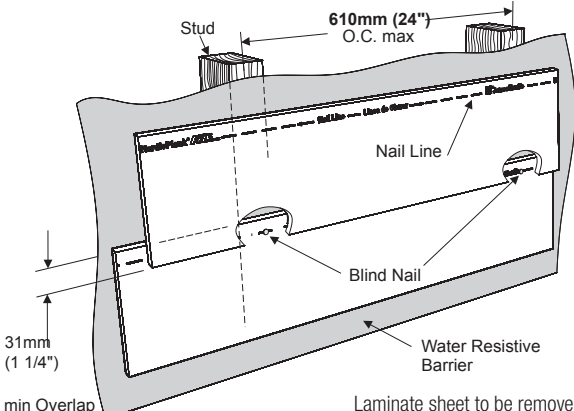
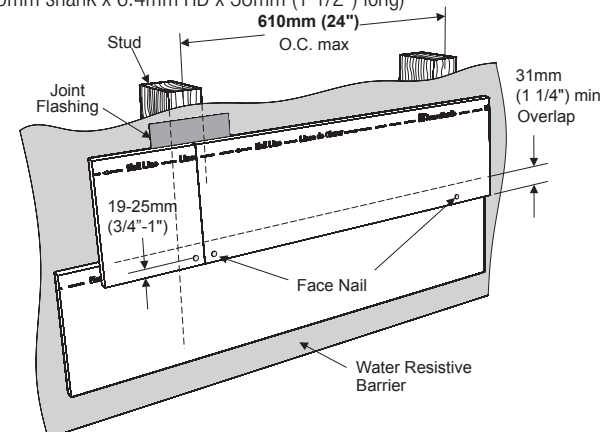
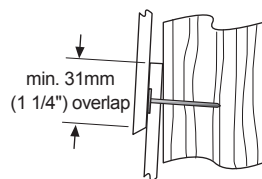


Figure 16

Minimum overlap for Both Face and Blind Nailing



Laminate sheet to be removed immediately after installation of each course for ColorPlus® products.

* When face nailing to OSB, planks must be no greater than 8 1/4" wide and fasteners must be 305mm (12") o.c. or less. ** Also see General Fastening Requirements.

GENERAL FASTENING REQUIREMENTS

Fasteners must be corrosion resistant, galvanized, or stainless steel. Electro-galvanized are acceptable but may exhibit premature corrosion. James Hardie recommends the use of quality, hot-dipped galvanized nails. James Hardie is not responsible for the corrosion resistance of fasteners. Stainless steel fasteners are recommended when installing James Hardie® products near the ocean, large bodies of water, or in very humid climates.

Manufacturers of ACQ and CA preservative-treated wood recommend spacer materials or other physical barriers to prevent direct contact of ACQ or CA preservative-treated wood and aluminum products. Fasteners used to attach HardieTrim Tabs to preservative-treated wood shall be of hot dipped zinc-coated galvanized steel or stainless steel and in accordance to 2009 IRC R317.3 or 2009 IBC 2304.9.5

PNEUMATIC FASTENING

James Hardie products can be hand nailed or fastened with a pneumatic tool. Pneumatic fastening is highly recommended. Set air pressure so that the fastener is driven snug with the surface of the siding. A flush mount attachment on the pneumatic tool is recommended. This will help control the depth the nail is driven. If setting the nail depth proves difficult, choose a setting that under drives the nail. (Drive under driven nails snug with a smooth faced hammer - Does not apply for installation to steel framing).

CAULKING

For best results use an Elastomeric Joint Sealant complying with ASTM C920 Grade NS, Class 25 or higher or a Latex Joint Sealant complying with ASTM C834. Caulking/Sealant must be applied in accordance with the caulking/sealant manufacturer's written instructions. **Note: OSI Quad as well as some other caulking manufacturers do not allow tooling. DO NOT caulk nail heads when using ColorPlus products, refer to the ColorPlus touch-up section.**

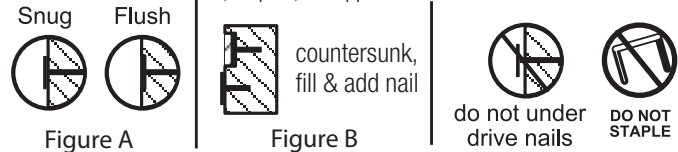
- Consult applicable code compliance report for correct fasteners type and placement to achieve specified design wind loads.

NOTE: Published wind loads may not be applicable to all areas where Local Building Codes have specific jurisdiction. Consult James Hardie Technical Services if you are unsure of applicable compliance documentation.

- Drive fasteners perpendicular to siding and framing.
- Fastener heads should fit snug against siding (no air space). (fig. A)
- Do not over-drive nail heads or drive nails at an angle.
- If nail is countersunk, fill nail hole and add a nail. (fig. B)
- For wood framing, under driven nails should be hit flush to the plank with a hammer (For steel framing, remove and replace nail).

NOTE: Whenever a structural member is present, HardiePlank should be fastened with even spacing to the structural member. The tables allowing direct to OSB or plywood should only be used when traditional framing is not available.

- Do not use aluminum fasteners, staples, or clipped head nails.



CUT EDGE TREATMENT

Caulk, paint or prime all field cut edges. James Hardie touch-up kits are required to touch-up ColorPlus products.

PAINTING

DO NOT use stain on James Hardie® products. James Hardie products must be painted within 180 days for primed product and 90 days for unprimed. 100% acrylic topcoats are recommended. Do not paint when wet. For application rates refer to paint manufacturers specifications. Back-rolling is recommended if the siding is sprayed.

COLORPLUS® TECHNOLOGY CAULKING, TOUCH-UP & LAMINATE

- Care should be taken when handling and cutting James Hardie® ColorPlus products. During installation use a wet soft cloth or soft brush to gently wipe off any residue or construction dust left on the product, then rinse with a garden hose.
- Touch up nicks, scrapes and nail heads using the ColorPlus® Technology touch-up applicator. Touch-up should be used sparingly. If large areas require touch-up, replace the damaged area with new HardiePlank® lap siding with ColorPlus Technology.
- Laminate sheet must be removed immediately after installation of each course.
- Terminate non-factory cut edges into trim where possible, and caulk. Color matched caulks are available from your ColorPlus® product dealer.
- Treat all other non-factory cut edges using the ColorPlus Technology edge coat, available from your ColorPlus product dealer.

Note: James Hardie does not warrant the usage of third party touch-up or paints used as touch-up on James Hardie ColorPlus products.

Problems with appearance or performance arising from use of third party touch-up paints or paints used as touch-up that are not James Hardie touch-up, will not be covered under the James Hardie ColorPlus Limited Finish Warranty.

PAINTING JAMES HARDIE® SIDING AND TRIM PRODUCTS WITH COLORPLUS® TECHNOLOGY

When repainting ColorPlus products, James Hardie recommends the following regarding surface preparation and topcoat application:

- Ensure the surface is clean, dry, and free of any dust, dirt, or mildew
- Repriming is normally not necessary
- 100% acrylic topcoats are recommended
- DO NOT use stain or oil/alkyd base paints on James Hardie® products
- Apply finish coat in accordance with paint manufacturers written instructions regarding coverage, application methods, and application temperature

COVERAGE CHART/ESTIMATING GUIDE

Number of 12' planks, does not include waste

| COVERAGE AREA LESS OPENINGS | | HARDIEPLANK SIDING WIDTH | | | | | | |
|-----------------------------|--------------------------|--------------------------|------------|------------|------------|----------------|------------|------------|
| SQ (1 SQ = 100 sq.ft.) | Sq. Meters (1 SQ = 9.29) | (exposure) | 5 1/4 4 | 6 1/4 5 | 7 1/4 6 | 7 1/2 6 1/4 | 8 6 3/4 | 8 1/4 7 |
| 1 | (9.29) | | 25 | 20 | 17 | 16 | 15 | 14 |
| 2 | (18.58) | | 50 | 40 | 33 | 32 | 30 | 29 |
| 3 | (27.87) | | 75 | 60 | 50 | 48 | 44 | 43 |
| 4 | (37.16) | | 100 | 80 | 67 | 64 | 59 | 57 |
| 5 | (46.45) | | 125 | 100 | 83 | 80 | 74 | 71 |
| 6 | (55.74) | | 150 | 120 | 100 | 96 | 89 | 86 |
| 7 | (65.03) | | 175 | 140 | 117 | 112 | 104 | 100 |
| 8 | (74.32) | | 200 | 160 | 133 | 128 | 119 | 114 |
| 9 | (83.61) | | 225 | 180 | 150 | 144 | 133 | 129 |
| 10 | (92.9) | | 250 | 200 | 167 | 160 | 148 | 143 |
| 11 | (102.19) | | 275 | 220 | 183 | 176 | 163 | 157 |
| 12 | (111.48) | | 300 | 240 | 200 | 192 | 178 | 171 |
| 13 | (120.77) | | 325 | 260 | 217 | 208 | 193 | 186 |
| 14 | (130.06) | | 350 | 280 | 233 | 224 | 207 | 200 |
| 15 | (139.35) | | 375 | 300 | 250 | 240 | 222 | 214 |
| 16 | (148.64) | | 400 | 320 | 267 | 256 | 237 | 229 |
| 17 | (157.93) | | 425 | 340 | 283 | 272 | 252 | 243 |
| 18 | (167.22) | | 450 | 360 | 300 | 288 | 267 | 257 |
| 19 | (176.51) | | 475 | 380 | 317 | 304 | 281 | 271 |
| 20 | (185.8) | | 500 | 400 | 333 | 320 | 296 | 286 |

This coverage chart is meant as a guide. Actual usage is subject to variables such as building design. James Hardie does not assume responsibility for over or under ordering of product.

RECOGNITION: In accordance with ICC-ES Evaluation Report ESR-2290, HardiePlank® lap siding is recognized as a suitable alternate to that specified in: the 2006, 2009, & 2012 International Residential Code for One- and Two-Family Dwellings, and the 2006, 2009, & 2012 International Building Code. HardiePlank lap siding is also recognized for application in the following: City of Los Angeles Research Report No. 24862, State of Florida listing FL#889, Dade County, Florida NOA No. 02-0729.02, U.S. Dept. of HUD Materials Release 1263c, Texas Department of Insurance Product Evaluation EC-23, City of New York MEA 223-93-M, and California DSA PA-019. These documents should also be consulted for additional information concerning the suitability of this product for specific applications.

COMPLIANCE:

HardiePlank® lap siding complies with ASTM Specification C1186 (Grade II, Type A) and ISO Standard 8336 (Category 3, Type A).

When tested in accordance with CAN/ULC-S102, the product is recognized to have the following properties: Flame Spread Rating: 0, Smoke Developed Classification: 0.

When tested in accordance with CAN/ULC-S114, the product is recognized as noncombustible.

RECOGNITION:

HardiePlank lap siding is recognized as an exterior wall cladding in CCMC Evaluation Report 12678-R. This document should also be consulted for additional information concerning the suitability of this product for specific applications. For technical assistance, call 1-800-9-HARDIE.

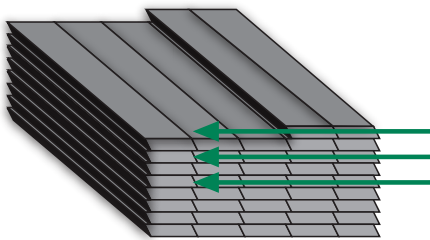
ADDITIONAL HANDLING REQUIREMENTS

IMPORTANT: To prevent damage to the drip edge, extra care should be taken when removing planks from the pallet, while handling, and when installing with a lap gauge. Planks are interlocked together on the pallet, therefore they should be removed from the pallet horizontally (side to side) to allow planks to unlock themselves from one another.

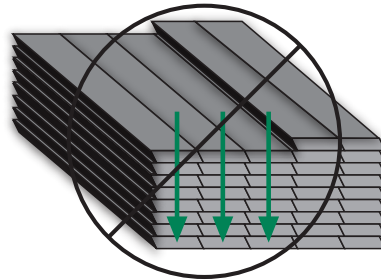
FIRE-RESISTIVE CONSTRUCTION:

HardiePlank lap siding is recognized as a component in 1-hour fire-related wall construction. Details of this assembly (Design No. JH/WA 60-04) may be found at: www.Intertek-ETLSemko.com

Pull from across the stack



Do not go down the stack



WIND LOAD TABLE

Refer to CCMC Evaluation Report 12678-R for steel stud application.

| NOMINAL PRODUCT WIDTH (mm) | PRODUCT THICKNESS | FASTENER TYPE | NAILING | FRAME TYPES | MAXIMUM STUD SPACING | ULTIMATE LOAD @FAILURE | |
|--------------------------------------|-------------------|-----------------------------------------------------------------------------------------|---------------------------|------------------------------|----------------------------|------------------------|-----------|
| | | | | | | kPa | psf |
| <190 (7.5") | 7.5mm (5/16") | Min. 2.4 mm shank x 5.6 mm HD x 50 mm (2") long galvanized roofing nail | Through top edge of plank | Nominal 2x4 wood 2 | 406mm (16") | 4.39 | 92 |
| 203 (8") 210 (8.25") | 7.5mm (5/16") | Min. 2.4 mm shank x 5.6 mm HD x 50 mm (2") long galvanized roofing nail | Through top edge of plank | Nominal 2x4 wood 2 | 406mm (16") | 3.93 | 82 |
| <241 (9.5") w/off stud/ splice | 7.5mm (5/16") | No. 11 ga. x 9.5 mm HD x 32 mm (1 1/4") long galvanized roofing nail | Through top edge of plank | Nominal 2x4 wood 1 | 406mm (16") 610mm (24") | 6.77 4.41 | 141 92 |
| <241 (9.5") | 7.5mm (5/16") | 2.3 mm shank x 5.6 mm HD x 50 mm (2") long galvanized siding nail | Through Overlap | Nominal 2x4 wood 2 | 406mm (16") | 5.08 | 106 |
| <241 (9.5") | 7.5mm (5/16") | 6d common 50 mm long (2") | Through Overlap | Nominal 2x4 wood 1 | 406mm (16") 610mm (24") | 9.53 4.50 | 199 94 |
| 305 (12") | 7.5mm (5/16") | 6d common 50 mm long (2") | Through Overlap | Nominal 2x4 wood 1 | 610mm (24") | 3.60 | 75 |
| <241 (9.5") | 7.5mm (5/16") | 38 mm (1 1/2") long with head dia. 5.7 mm and shank dia. 2.3 mm galvanized siding nails | Through Overlap | 7/16" mm OSB rated sheathing | NA | 3.45 | 72 |

WIND LOAD TABLE FOOT NOTES:

1. Values are for species of wood having a specific gravity of 0.42 or greater.
2. Values are for species of wood having a specific gravity of 0.36 or greater.

METRIC TO IMPERIAL CONVERSION TABLE

The following table provides a conversion of the nominal metric measurements presented in these installation instructions to nominal Imperial fraction measurement values

| mm | inches | mm | inches | mm | inches | mm | inches |
|---------|--------|------|--------|-----|--------|-----|--------|
| 2.3 | 3/32 | 7.5 | 5/16 | 32 | 1-1/4 | 203 | 8 |
| 2.4 | 3/32 | 8.2 | 21/64 | 35 | 1-3/8 | 210 | 8-1/4 |
| 2.9 1/8 | | 9.2 | 3/64 | 38 | 1-1/2 | 241 | 9-1/2 |
| 3.1 | /8 | 9.5 | 3/8 | 41 | 1-5/8 | 305 | 12 |
| 5.6 | 7/32 | 11.1 | 7/16 | 50 | 2 | 406 | 16 |
| 5.7 | 7/32 | 12 | 15/32 | 91 | 3-5/8 | 610 | 24 |
| 6.1 | 5/64 | 19 | 3/4 | 150 | 6 | | |
| 6.7 | 17/64 | 25 | 1 | 190 | 7-1/2 | | |

