Hardiplank®

LAP SIDING
INSTALLATION INSTRUCTIONS

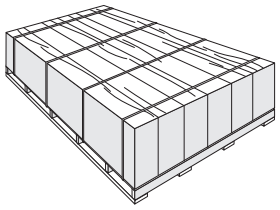
James Hardie®

NOVEMBER 2004

IMPORTANT: FAILURE TO INSTALL AND FINISH HARDIPLANK® LAP SIDING IN ACCORDANCE WITH APPLICABLE BUILDING CODE COMPLIANCE REPORTS AND JAMES HARDIE S WRITTEN APPLICATION INSTRUCTIONS MAY AFFECT SYSTEM PERFORMANCE, VIOLATE LOCAL BUILDING CODE REQUIREMENTS AND VOID THE PRODUCT ONLY WARRANTY.

HANDLING & STORAGE:

Store flat and keep dry. Installing Hardiplank siding wet or saturated may result in shrinkage at butt joints. Carry planks on edge.



⚠ RECOMMENDED CUTTING INSTRUCTIONS

OUTDOORS
1. Position cutting station so that wind will blow dust away from user or others in work area.
2. Use one of the following methods based on the required cutting rate:
   - a. Best: i. Score and snap; ii. Shears (Pneumatic or Handheld)
   - b. Better: i. Dust reducing circular saw equipped with Hardiblade and HEPA vacuum extraction
   - c. Good: i. Dust reducing circular saw with Hardiblade

INDOORS
1. Position cutting station in well-ventilated area; otherwise, additional mechanical ventilation (e.g. box fan, HEPA vacuum, etc.) is required
2. Cut only using score and snap, or shears (manual, electric or pneumatic).

- NEVER use a power saw indoors
- NEVER use a circular saw blade that does not carry the Hardiblade logo
- NEVER dry sweep

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 protection levels, you should always consult a qualified industrial hygienist.

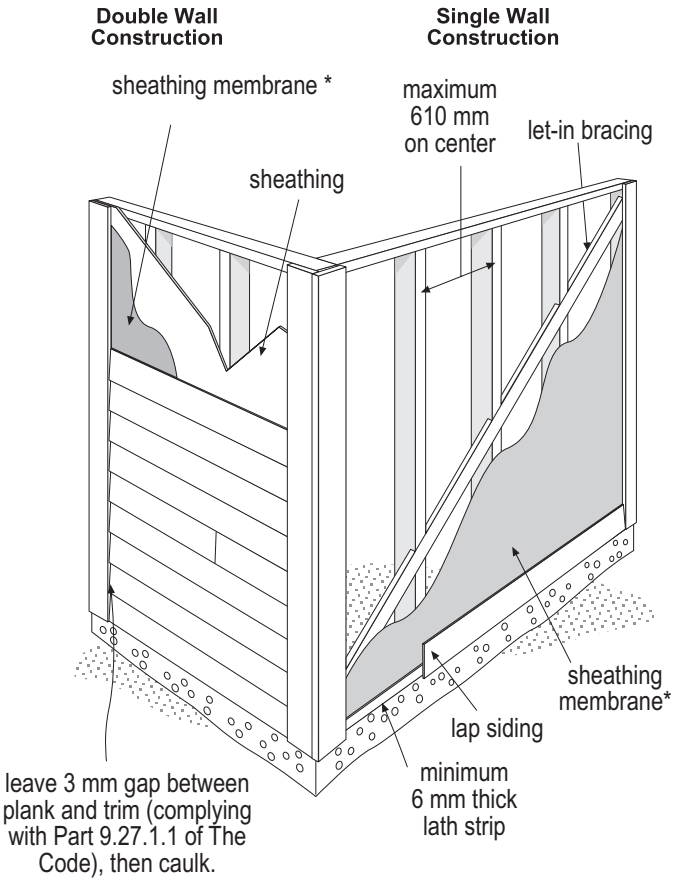
FRAMING REQUIREMENTS:

Hardiplank lap siding is installed over braced wood or steel framing spaced a maximum of 610 mm o.c. or to minimum 11.1 mm OSB sheathing or an equivalent thickness of plywood sheathing (Figure 1). Hardiplank lap siding can also be installed over foam insulation up to 25 mm thick. Irregularities in framing, sheathing, and/or foam insulation can mirror through the finished application. A sheathing membrane is required *.

*Sheathing membrane used in accordance with Part 9.23.17 of the 1995 National Building Code of Canada (The Code).

NOTE: The Code may exempt the use of a sheathing membrane. However, in most cases where a sheathing membrane is not used, wind driven rain and snow may penetrate the unprotected wall cavity. Therefore, James Hardie recommends the use of a "building paper type" sheathing membrane with all cladding products. James Hardie will assume no responsibility for moisture within the wall.

Figure 1

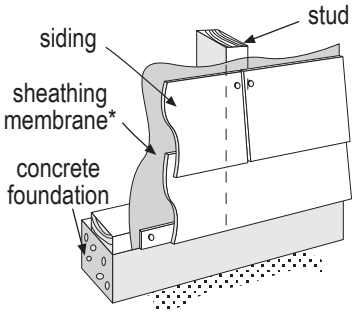


WARNING: AVOID BREATHING SILICA DUST

James Hardie products contain respirable crystalline silica which is known to the State of California to cause cancer. Inhalation of respirable silica can cause silicosis (a disabling lung disease), lung cancer, and has been linked, therefore, to death. When drilling, cutting, sanding, or grinding products during installation or handling: (1) Work outdoors where feasible, (2) Wear a dust mask, or use a NIOSH/MSHA approved respirator whenever US OSHA PEL is exceeded or as required by applicable law, (3) Warn others in area, (4) During clean-up, never dry sweep. According to some medical experts, and the US Surgeon General, cigarette smoking can significantly increase your likelihood of contracting lung-related diseases, including silica-related lung diseases. For further information, refer to our installation instructions and Material Safety Data Sheet available at www.jameshardie.com or by calling 1-800-9HARDIE. FAILURE TO ADHERE TO OUR WARNINGS, MSDS, AND INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

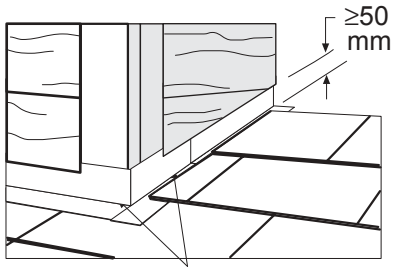
GRADE CLEARANCE Figure 2

Leave a minimum of 150 mm clearance between bottom edge of plank/framing and earth or finished landscaping.



ROOF CLEARANCE Figure 3

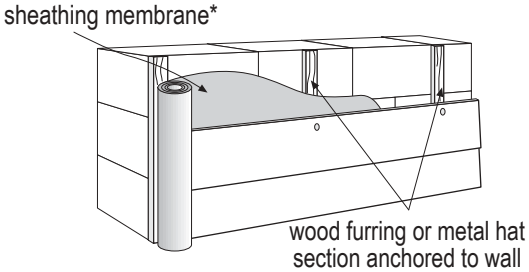
Part 9.27.2.3 of The Code requires a minimum 50 mm clearance between roofing and bottom edge of siding and as required by roofing product installation instructions.



flashing in accordance with part 9.27.3 of the Code.

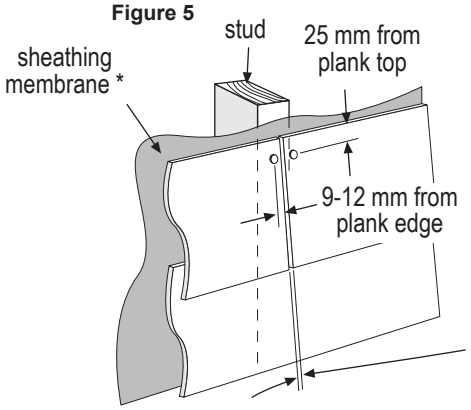
CONCRETE CONSTRUCTION Figure 4

When Hardiplank® siding is installed over concrete construction, the wall is furred out with wood framing or minimum 20 gauge metal hat sections anchored to the wall. Framing can be spaced up to 610 mm o.c. A sheathing membrane* is recommended between the framing and the siding.



APPLYING HARDIPLANK SIDING:

Figure 5



- Top Edge (blind nail)
  Place fasteners 25 mm from top plank edge.
- Side Edge
  Place fasteners no closer than 9 mm and no further than 12 mm from the plank side edge.
- Bottom Edge (face nail)
  Place fasteners no closer than 19 mm and no further than 25 mm from the plank bottom edge.

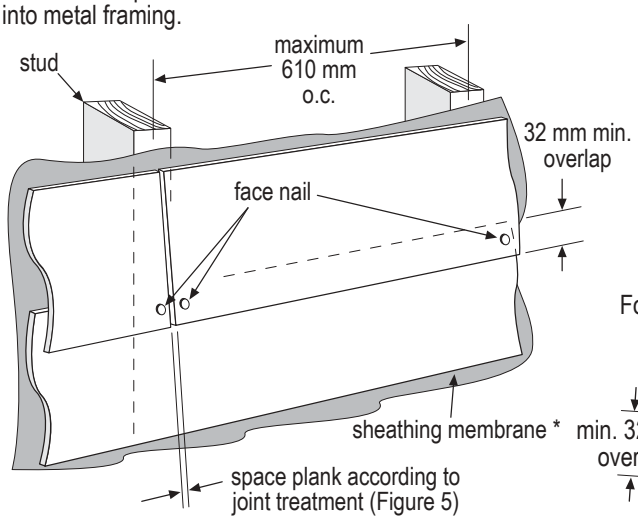
Space plank according to joint treatment either in "moderate contact" (joints not caulked) or in accordance with caulking manufacturer's written application instructions (joints caulked).

FACE NAIL: (planks installed horizontally) Figure 6

(For vertical application of plank, Figure 8)

Corrosion Resistant Nails (galvanized or stainless steel)
- 6d common nail (2.9 mm shank x 6.7 mm HD x 50 mm long)
- Siding nail (2.3 mm shank x 5.6 mm HD x 50 mm long) **

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



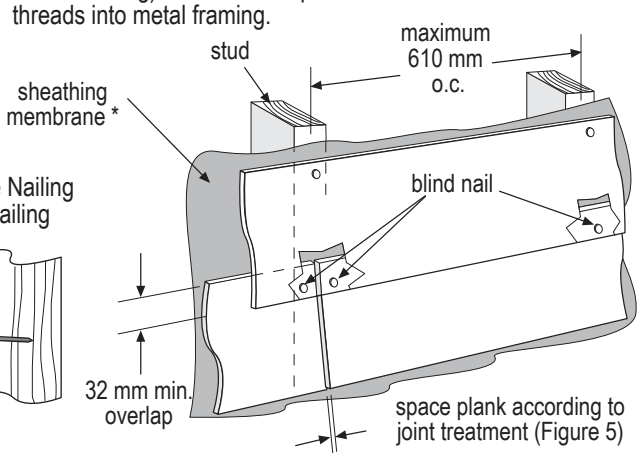
BLIND NAIL Figure 7

305 mm wide Hardiplank siding cannot be blind nailed.

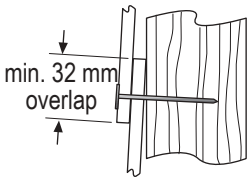
Corrosion Resistant Nails (galvanized or stainless steel)
≤ 241 mm Hardiplank siding
- Roofing nail (3 mm shank x 9.5 mm HD x 32 mm long) **

≤ 210 mm Hardiplank siding
- Minimum Requirement: Siding nail (2.4 mm shank x 5.6 mm HD x 50 mm long) **

Corrosion Resistant Screws
(≤ 241 mm Hardiplank lap only)
- Ribbed wafer-head or equivalent (No. 8 x 9.5 mm HD x 32 mm long). Screws must penetrate 6 mm or 3 full threads into metal framing.



For Both Face Nailing and Blind Nailing

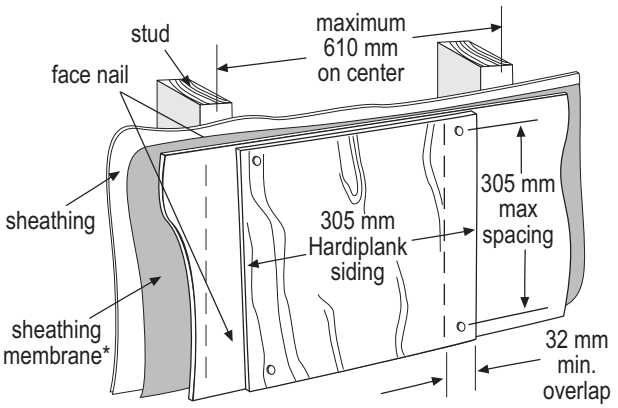


** The use of a siding nail, common nail or roofing nail may not be applicable to all installations where greater windloads or higher exposure categories of wind resistance is required by the Local Building Code. Consult The Code for specific details.

FACE NAIL: (planks installed vertically)
Hardiplank® siding can be installed vertically using the following guidelines:

- Install planks vertically with either a minimum of 32 mm overlap (as shown in Figure 8) or with butted vertical joints (not shown) and protected with batten strips, caulking, or other suitable method.
- Fasten planks with minimum 4d (2.3 mm shank x 5.7 mm HD x 38 mm long) corrosion-resistant nails spaced a maximum of 305 mm o.c.

Figure 8



SEE NEXT PAGE FOR WIND LOAD TABLES

PNEUMATIC FASTENING:

Hardiplank siding can be hand nailed or fastened with the use of a pneumatic tool. Set your air pressure so that the fastener is driven snug with the siding surface.

RECOMMENDED:

Use a flush mount attachment on pneumatic tool. This will help control the depth that the nail is driven. This will be especially helpful when more than one pneumatic tool is driven off the same compressor.

DO NOT STAPLE

FASTENING REQUIREMENTS:

- Drive fasteners perpendicular to siding and framing.
- Fastener heads should fit snug against siding (no air space). (Fig. A & B)
- Do not over-drive nail heads or drive nails at an angle.
- If nail is countersunk, caulk nail hole and add a nail. (Fig. C)

figure A

figure B

figure C

do not under drive nails

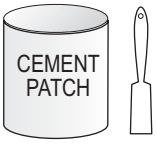
NAIL TYPE:

Fasteners must be corrosion resistant, galvanized or stainless steel. Electro-galvanized nails are acceptable for use with James Hardie Siding Products, 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.)

FINISHING SIDING:

Patching:

Dents, chips and cracks can be filled with a cementitious patching compound.

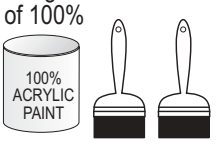


Caulking:

A high quality, paintable latex caulk is required in accordance with Part 9.27.4 of the Code. For best results use a latex sealant that complies with either ASTM C 834 or ASTM C 920 (Grade NS, Class 25). Caulking should be applied in accordance with caulking manufacturers written instructions.

Painting:

Hardiplank lap siding must be painted James Hardie recommends the application of alkali-resistant primer along with a minimum of one topcoat of 100% acrylic paint.†



†Note: Please refer to paint manufacturers specifications (JH Technical Bulletin No. S-100) for application rates and required topcoats.

COMPLIANCE:

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

When tested in accordance with ASTM E-84 and evaluated for compliance with (CAN/ULC-S102), the product is recognized to have the following properties.

Flame Spread Rating: 0(<5)
Smoke Developed Classification: 5(†10)

When tested in accordance with ASTM E 136 and evaluated for compliance with (CAN/ULC-S114) the product is recognized as noncombustible.

RECOGNITION:

HARDIPLANK 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.

FIRE-RESISTIVE CONSTRUCTION:

Hardiplank 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

WIND LOAD TABLE

NOMINAL PRODUCT WIDTH (mm)	PRODUCT THICKNESS (mm)	FASTENER TYPE	FASTENER SPACING	FRAME TYPES	MAXIMUM STUD SPACING (mm)	ULTIMATE LOAD @FAILURE kPa	psf
≤241	7.5	2.3 mm shank x 5.6 mm HD x 50 mm long galvanized siding nail	Through Overlap	Nominal 2x4 wood[2]	406	5.08	106
≤241	7.5	6d common 50 mm long	Through Overlap	Nominal 2x4 wood[1]	406	9.53	199
					610	4.50	94
305	7.5	6d common 50 mm long	Through Overlap	Nominal 2x4 wood[1]	610	3.60	75
101	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through Overlap	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	406	23.75	496
152	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through Overlap	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	406	15.85	331
158	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through Overlap	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	406	15.18	317
184	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through Overlap	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	406	12.93	270
190	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through Overlap	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	406	12.45	260
203	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through Overlap	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	406	11.54	241
209	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through Overlap	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	406	11.16	233
241	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through Overlap	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	406	9.48	198
304	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through Overlap	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	406	7.23	151
101	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through Overlap	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	610	12.93	270
152	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through Overlap	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	610	8.62	180
158	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through Overlap	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	610	8.28	173
≤305	7.5	Min. No. 8 x 8.2 mm HD x 41 mm long Hi-Lo®S® or S-12™ ribbed bugle screws	Through Overlap	Min. No 16 ga. x 91 mm x 35 mm metal C-stud	610	4.43	93

WIND LOAD TABLE

NOMINAL PRODUCT WIDTH (mm)	PRODUCT THICKNESS (mm)	FASTENER TYPE	FASTENER SPACING	FRAME TYPES	MAXIMUM STUD SPACING (mm)	ULTIMATE LOAD @FAILURE kPa	psf
≤190	7.5	Min. 2.4 mm shank x 5.6 mm HD x 50 mm long galvanized roofing nail	Through top edge of plank	Nominal 2x4 wood[2]	406	4.39	92
203 210	7.5	Min. 2.4 mm shank x 5.6 mm HD x 50 mm long galvanized roofing nail	Through top edge of plank	Nominal 2x4 wood[2]	406	3.93	82
≤241 w/off stud/ splice	7.5	No. 11 ga.x 9.5 mm HD x 32 mm long galvanized roofing nail	Through top edge of plank	Nominal 2x4 wood[1]	406 610	6.77 4.41	141 92
184	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through Overlap	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	610	7.28	152
190	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through Overlap	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	610	6.75	141
203	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through Overlap	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	610	6.27	131
209	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through Overlap	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	610	6.08	127
241	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through Overlap	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	610	5.17	108
304	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through Overlap	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	610	3.88	81
101	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through top edge of plank	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	406	6.32	132
152	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 7.29 mm head diameter	Through top edge of plank	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	406	4.21	88
158	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 7.29 mm head diameter	Through top edge of plank	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	406	4.07	85
184	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 7.29 mm head diameter	Through top edge of plank	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	406	3.95	83
190	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 7.29 mm head diameter	Through top edge of plank	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	406	3.40	71
203	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 7.29 mm head diameter	Through top edge of plank	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	406	3.16	66
209	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 7.29 mm head diameter	Through top edge of plank	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	406	3.06	64

WIND LOAD TABLE

NOMINAL PRODUCT WIDTH (mm)	PRODUCT THICKNESS (mm)	FASTENER TYPE	FASTENER SPACING	FRAME TYPES	MAXIMUM STUD SPACING (mm)	ULTIMATE LOAD @FAILURE kPa	psf
≤241	7.5	Min. No. 8 x 9.5 mm HD x 32 mm long Hi-Lo®S® or S-12™ ribbed phillips Waferhead screws	Through top edge of plank	Min. No 20 ga. x 91 mm x 35 mm metal C-stud	406	8.10	169
≤241	7.5	38 mm long with head dia. 5.7 mm and shank dia. 2.3 mm galvanized siding nails	Through Overlap	11.1 mm OSB rated sheathing	NA	3.45	72
101	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 6.4 mm head diameter	Through top edge of plank	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	610	4.98	104
152	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 7.29 mm head diameter	Through top edge of plank	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	610	3.30	69
158	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 7.29 mm head diameter	Through top edge of plank	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	610	3.16	66
184	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 7.29 mm head diameter	Through top edge of plank	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	610	2.82	59
190	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 7.29 mm head diameter	Through top edge of plank	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	610	2.63	55
203	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 7.29 mm head diameter	Through top edge of plank	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	610	2.49	52
209	7.5	ET & F pin fastener, 2.5 mm shank, 38 mm long with 7.29 mm head diameter	Through top edge of plank	Min. No 20 ga. x 41 mm x 89 mm metal C-stud	610	2.39	50

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	23/64	38	1-1/2	241	9-1/4
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	15/64	19	3/4	150	6		
6.7	17/64	25	1	190	7-1/2		

Additional Installation Information, Warranties, and Warnings are available at www.jameshardie.com

James Hardie®