HardieSoffit® Panel Products Description
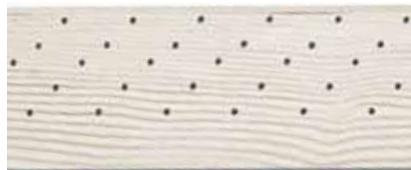
HARDIESOFFIT® PANELS

HardieSoffit® panels are 2,438mm (8 ft) and 3,658mm (12 ft) long, 6mm (¼ in) thick factory-primed fiber-cement panels designed to be used on the underside of eaves as soffit material. HardieSoffit panels are available as vented or non-vented boards. Vented HardieSoffit panels provide $3,225.8mm^2$ ($5 in^2$) of net free ventilation per lineal foot of soffit.

James Hardie offers HardieSoffit panels in a range of time-saving pre-cut widths common to rake and eave applications. HardieSoffit panels come in either a smooth finish or Select Cedarmill© textured finish. Check with your local dealer for product availability. HardieSoffit panels can be combined with HardieTrim® Fascia boards used for fascia rakes and frieze applications to complete the eaves detailing.

HardieSoffit panels are also available with ColorPlus® Technology. The ColorPlus® coating is a factory-applied, oven-baked finish available on a variety of James Hardie® siding and trim products. See your local dealer for details and availability of products, colors and accessories.

HardieSoffit Non-Vented – Smooth

HardieSoffit Vented – Cedarmill©

HardieSoffit Vented – Smooth

HardieSoffit Non-Vented – Cedarmill©

HardieSoffit Non-Vented – Smooth

HardieSoffit Vented – Smooth

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HardieTrim® Boards/Battens

HardieSoffit® Panels

HardiePlank® Lap Siding

HardieShingle® Siding

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INSTALLATION OF HARDIESOFFIT® PANELS

HardieSoffit® panels must be attached to solid framing such as 2x4 supports spaced no more than 610mm (24 in) o.c. For eaves install HardieSoffit panels with the long edge of the panel perpendicular to the ends of the rafters or joists. Eaves framing must include a subfascia, blocking, and/or ledger board to provide solid nailing along the long dimension of the soffit. All panel edges must be supported.

For rake overhangs 2x "look outs" spaced a maximum of 610mm (24 in) o.c. should support a rake subfascia to provide adequate nailing for the rake soffit. Blocking between the lookouts provides support for the rake soffit along the building.

8.1 **Soffit Framing**

All edges of the soffit panels must be supported

Intermediate supports should be no more than 610mm (24 in) o.c
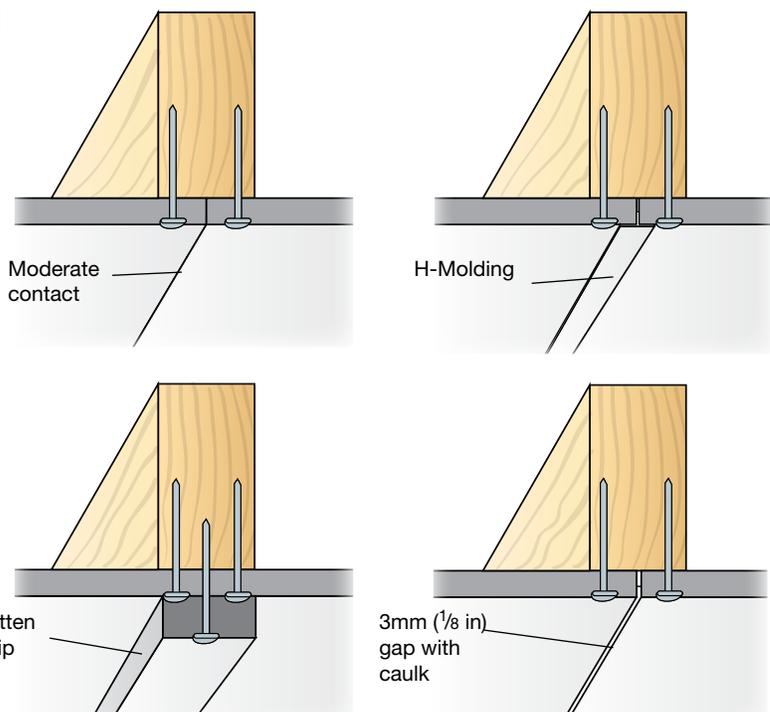
Subfascia

Rafter

Ledger

Blocking
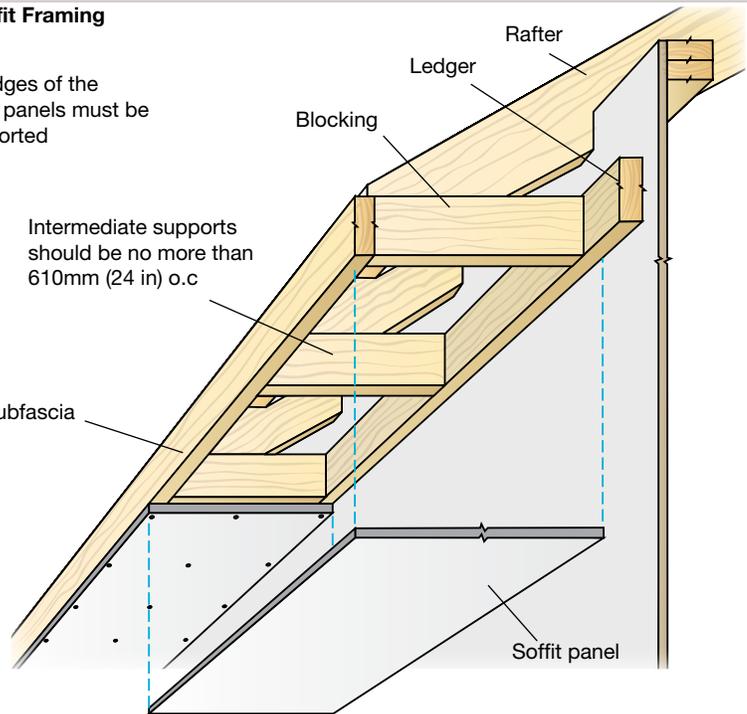
Soffit panel

TIP: To aid in soffit panel installation, make a "deadman" or "third hand" post to help hold and position the soffit panel. Factory built tools such as those made for drywall installation are available, or they can be fabricated from lumber on the job-site.
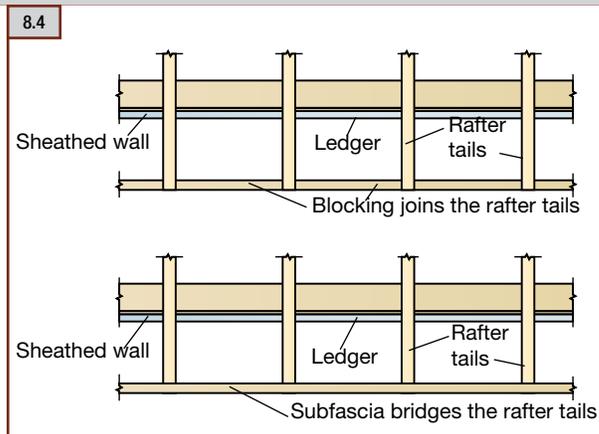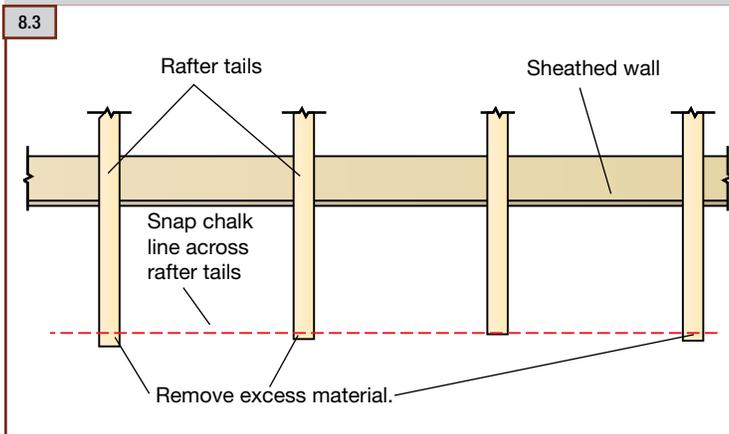
JOINT TREATMENT FOR HARDIESOFFIT PANELS

There are several ways to join the lengths of HardieSoffit panels. Panel ends may be lightly butted in moderate contact, the ends may be gapped 3mm (1/8 in) and caulked, joints can be covered with batten strips, or panels may be joined with PVC or metal H molding type connectors.

8.2

Moderate contact

H-Molding

Batten strip

3mm (1/8 in) gap with caulk

FRAMING PREP FOR SOFFIT PANELS

8.3

Rafter tails

Sheathed wall

Snap chalk line across rafter tails

Remove excess material.

8.4

Sheathed wall

Ledger

Rafter tails

Blocking joins the rafter tails

Sheathed wall

Ledger

Rafter tails

Subfascia bridges the rafter tails

8.5

Ledger

Rafter tails

Subfascia
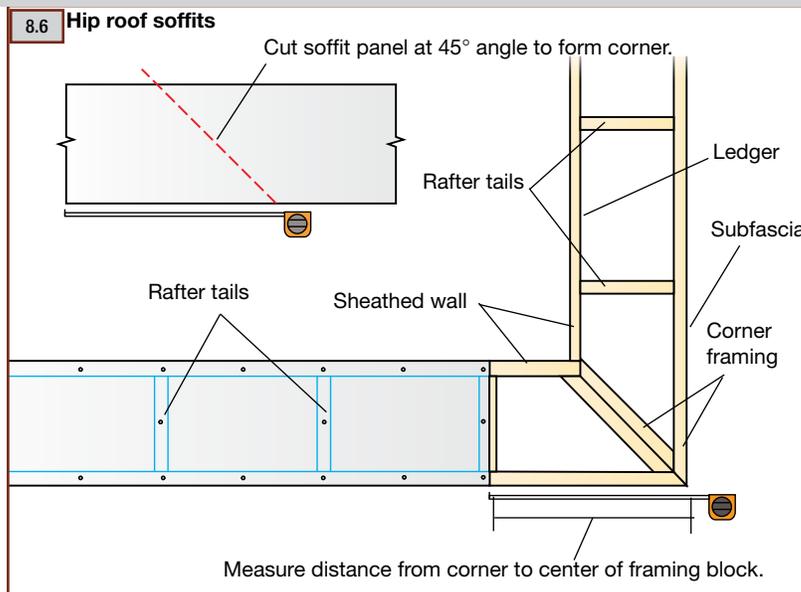
Soffit

Sheathed wall

When installing the soffit:

1) Straighten the rafter tails by pulling and snapping a chalk line across the ends of the tails and then trimming them as necessary.

2) Install a solid wood sub-fascia on the ends of the rafter tails or install blocking between the rafter tails as needed.

3) If the soffit is to be installed level across its width, add nailers at every rafter or truss to provide support.

4) If the eaves are longer than 3,658mm (12 ft), measure and trim the first HardieSoffit® panel making sure that the end falls in the middle of a nailer.

5) Using the subfascia as a guide along the edge, carefully position the panel and secure with 4d common galvanized nails spaced no greater than 203mm (8 in) o.c. at all panel edges and on all intermediate framing members.

6) Continue with additional pieces until the run is complete.
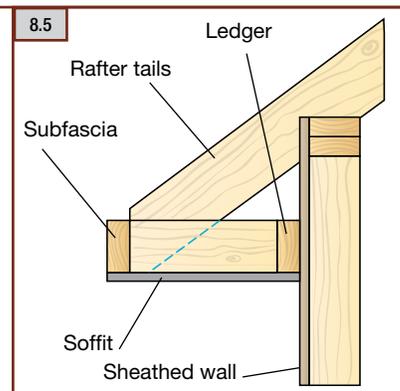
CUTTING 45° HIP ROOF SOFFITS

Hip roof soffits continue level around the corners of a house. The soffit panels should join at the corner with 45° angle cuts. To create these corners:

1) First measure from the corner to the perpendicular framing member closest to, but not over 3,658mm (12 ft).

2) Using that measurement and pulling from the factory cut end of the soffit panel, mark the outside edge of the soffit panel for the long point of the 45° cut.

3) After cutting the 45° angle, position the panel on the soffit framing and check the fit on both ends before fastening.

4) Begin nailing at the 45° cut end and work toward the factory end.

8.6 **Hip roof soffits**

Cut soffit panel at 45° angle to form corner.

Ledger

Rafter tails

Subfascia

Rafter tails

Sheathed wall

Corner framing

Measure distance from corner to center of framing block.

⚠ **WARNING**

When using vented soffit, place the vented section of the panel toward the outside of the eave for optimum airflow.

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TREATMENT OPTIONS FOR THE SIDING/SOFFIT JUNCTURE

In addition to the frieze board treatments described above, there are several other options for finishing the juncture where the siding meets the soffit.

8.7 Caulk joint between siding and soffit.

8.8 Crown molding covers the joint between siding and soffit.

CAULK THE SIDING/SOFFIT JOINT

A fast and economical method of finishing the siding/soffit juncture is simply to run a bead of quality caulk along the top edge of the siding where it meets the soffit. A straight rip cut along the top edge of the siding ensures an aesthetically pleasing fit where it meets the soffit.

8.9 J-Channel covers the top edge of the siding at the soffit.
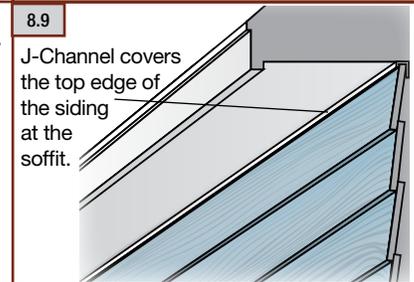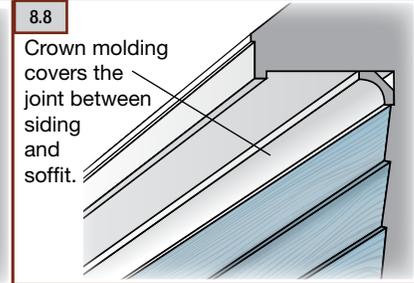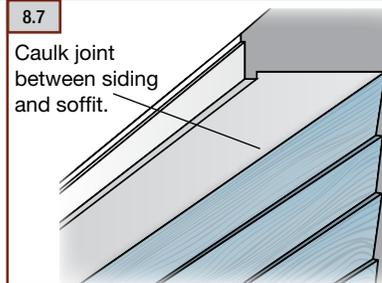
INSTALL CROWN MOLDING

Crown molding is another way of finishing and sealing the soffit/siding juncture. Install and finish the crown molding according to the manufacturer's specifications.

OVER THE TOP OF THE SIDING WITH 'J' CHANNEL

Once the soffit is in place, install a vinyl "J" channel upside down with the base of the "J" against the soffit. Then rip the final course of siding so that it fits inside the channel.

INSECT SCREEN

In areas where additional insect protection is desired, a screen may be applied to the back side of the panel prior to soffit installation. After the screen type and size is selected, cut the screen to fit so that it covers the vent holes and overlaps the non-vented area of the soffit by 25mm (1 in) to 50mm (2 in). Secure the screen to the backside of the soffit panel using a bead of construction adhesive.

TIP: Stainless steel fasteners are recommended when installing James Hardie® products.

HARDIESOFFIT® PANEL FASTENER SPECIFICATIONS

The Fastener Specifications table shows fastener options for a variety of different nailing substrates. Please refer to the applicable wind load table to determine which fastener meets your wind load design criteria.

Fastening Substrate		Approved Fastener	Fastening Types
wood studs	406mm (16 in) o.c	① ⑥	① 4d 3mm x 6.8mm x 38mm (.118 in x .267 in x 1.5 in)
	572mm (22.5 in) o.c.	⑥	⑥ ring shank siding nail 2.1mm x 4.7mm x 38mm (.083 in x .187 in x 1.5 in)
	610mm (24 in) o.c.	①	
steel studs	406mm (16 in) o.c	⑦	⑦ screw Ribbed Bugle-Head No. 8 8.2mm x 41.3mm (.323 in x 1.625 in)

⚠ **WARNING**

Please note that the addition of an insect screen reduces the total amount of vent area of the soffit depending on the size screen used.

INSTALLATION REQUIREMENTS - PRIMED & COLORPLUS® PRODUCTS

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
1. Position cutting station so that airflow blows dust away from the user and others near the cutting area.
2. Cut using one of the following methods:
   a. Best: Circular saw equipped with a HardieBlade® saw blade and attached vacuum dust collection system. Shears (manual, pneumatic or electric) may also be used, not recommended for products thicker than 7/16 in.
   b. Better: Circular saw equipped with a dust collection feature (e.g. Roan® saw) and a HardieBlade saw blade.
   c. Good: Circular saw equipped with a HardieBlade saw blade.

INDOORS
DO NOT grind or cut with a power saw indoors. Cut using shears (manual, pneumatic or electric) or the score and snap method, not recommended for products thicker than 7/16 in.

- DO NOT dry sweep dust; use wet dust suppression or vacuum to collect dust.
- For maximum dust reduction, James Hardie recommends using the "Best" cutting practices. Always follow the equipment manufacturer's instructions for proper operation.
- For best performance when cutting with a circular saw, James Hardie recommends using HardieBlade® saw blades.
- Go to jameshardiepros.com for additional cutting and dust control recommendations.

IMPORTANT: The Occupational Safety and Health Administration (OSHA) regulates workplace exposure to silica dust. For construction sites, OSHA has deemed that cutting fiber cement with a circular saw having a blade diameter less than 8 inches and connected to a commercially available dust collection system per manufacturer's instructions results in exposures below the OSHA Permissible Exposure Limit (PEL) for respirable crystalline silica, without the need for additional respiratory protection.

If you are unsure about how to comply with OSHA silica dust regulations, consult a qualified industrial hygienist or safety professional, or contact your James Hardie technical sales representative for assistance. James Hardie makes no representation or warranty that adopting a particular cutting practice will assure your compliance with OSHA rules or other applicable laws and safety requirements.

GENERAL REQUIREMENTS:

- References to the 2015 National Building Code (NBC) of Canada are made throughout this document. Local building code requirements may supersede the NBC in some locations.
- HardieSoffit® panels may be installed as a soffit or ceiling over either wood or steel 20 gauge (33 mils) minimum to 16 gauge (54 mils) framing complying with the local building code. Install soffits to nominal 2 x 4 framing members spaced a maximum of 610mm (24") on center (fig.4), with the long dimension perpendicular to the rafter or joist framing.
- All edges must be supported by framing. (figs. 3 & 4)
- Install water barriers (compliant with Part 9.27.3.2 of the NBC) and air barriers as required by local building codes. James Hardie will assume no responsibility for moisture infiltration.
- DO NOT use stain on James Hardie® products.
- James Hardie Building Products provides installation /wind load information for buildings with a maximum mean roof height of 25.9m (85 ft).

INSTALLATION:

- HardieSoffit® panels must be fastened to a solid, nailable substrate such as a wood 2x subfascia.
- Additional framing may be needed to ensure proper fastening.
- Soffits can be installed as shown in figure 1. Position the vent holes toward the outside of the eave for optimal airflow.
- 305mm (12") to 610mm (24") wide Vented HardieSoffit panels, provide [5 square inches of net free ventilation per lineal foot].
- Alternatively vents can be installed into non-vented soffit.
- If necessary, an insect screen can be installed using construction adhesive. Note: net free ventilation will be reduced.

Fastener Requirements
- Position fasteners 9.5mm (3/8") from panel edges and no closer than 50mm (2") away from corners when using soffit greater than 305mm (12") wide (fig. 4) and no closer than 25mm (1") away from corners when using soffit that is less than or equal to 305mm (12") wide (fig. 3).

Jointing Methods
- Install panels in moderate contact at ends, provide PVC or metal jointers, battens or leave appropriate gap and caulk (fig 2).

Figure 1

venting to outside of eave
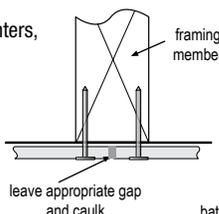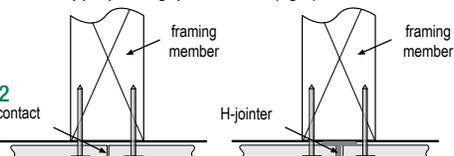
fascia

(wood) subfascia

HardieSoffit® vented panel

shim

siding

Figure 3
less than or equal to 305mm (12") Wide Soffit

25mm (1") from end of soffit

9.5mm (3/8") from edge of soffit

framing member
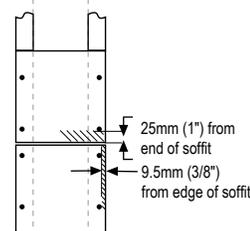
Figure 4
Greater than 305mm (12") Wide Soffit

keep fasteners 50mm (2") away from corners

9.5mm (3/8") from edge of soffit

610mm (24") o.c. max.

framing member

Figure 2
moderate contact

framing member

H-jointer

framing member

leave appropriate gap and caulk

framing member

batten

JamesHardie
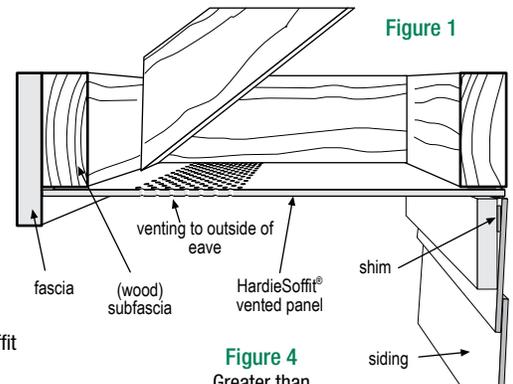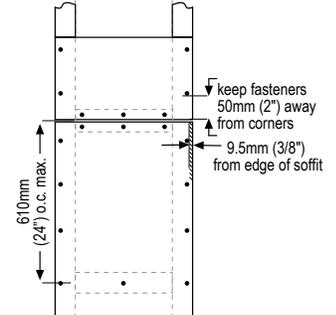
Maintain a minimum 25mm (1") gap between gutter end caps and siding & trim.

Figure 5

- siding
- 25mm (1")
- fascia
- gutter and end cap

Figure 6

- Step flashing
- Self-adhering membrane
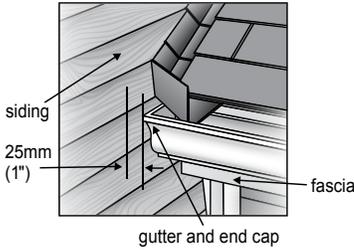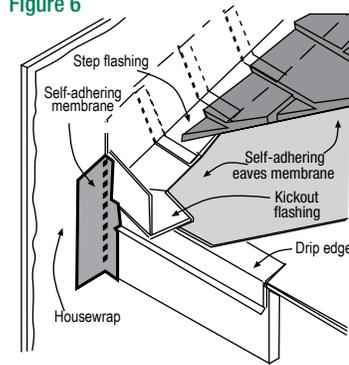- Self-adhering eaves membrane
- Kickout flashing
- Drip edge
- Housewrap

KICKOUT FLASHING

Because of the volume of water that can pour down a sloped roof, one of the most critical flashing details occurs where a roof intersects a sidewall. The roof must be flashed with step flashing. Where the roof terminates, install a kickout to deflect water away from the siding.

It is best to install a self-adhering membrane on the wall before the subfascia and trim boards are nailed in place, and then come back to install the kickout.

Figure 6, Kickout Flashing To prevent water from dumping behind the siding and the end of the roof intersection, install a "kickout" as required by IRC code R905.2.8.3 : "...flashing shall be a min. of 4" high and 4" wide." James Hardie recommends the kickout be angled between 100º - 110º to maximize water deflection

FASTENER REQUIREMENTS

- Fasteners must be installed with a minimum 9.5mm (3/8") edge distance and 50mm (2") clearance from end of panel.
  For wood frame construction a minimum 4d common nails spaced 200mm (8") o.c. at panel edges and intermediate framing members spaced up to 610mm (24") on center are suitable in most locations*.
- For conventional 20ga - 16ga steel frame construction a minimum No. 8-18 x 8.2mm x 25mm (1") long ribbed bugle screws spaced 150mm (6") o.c. at panel edges and intermediate framing members spaced up to 610mm (24") on center are suitable in most locations*.
  *Minimum Basic Wind Speed differs by locality. Where specified levels of wind resistance are required, refer to tables 1 & 2 in this document.

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

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

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).

Figure A

SNUG   FLUSH
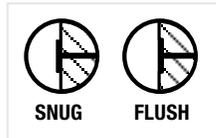
DO NOT	DO NOT		DO NOT USE
UNDER DRIVE	OVER DRIVE	SLANT	ALUMINUM FASTENERS
IF, THEN	IF, THEN ADDITIONAL NAIL		CLIPPED HEAD NAILS
WOOD FRAME / STEEL FRAME	FACE NAIL		STAPLES
HAMMER FLUSH / REMOVE & REPLACE	COUNTERSINK & FILL		

Figure B

CUT EDGE TREATMENT

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

CAULKING

Elastomeric Joint Sealant is required in accordance with Part 9.27.4 of the NBC, 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: some caulking manufacturers do not allow "tooling".

PAINTING

DO NOT use stain, oil/alkyd base paint, or powder coating 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 HardieTrim® batten boards with ColorPlus Technology.
- Laminate sheet must be removed immediately after installation.
- 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 coaters, 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, oil/alkyd base paint, or powder coating on James Hardie® Products.
- Apply finish coat in accordance with paint manufacturers written instructions regarding coverage, application methods, and application temperature
- DO NOT caulk nail heads when using ColorPlus products, refer to the ColorPlus touch-up section

COMPLIANCE:

HardieSoffit panels comply with ASTM Specification C1186 (Grade II, Type A) and ISO Standard 8336 (Category A, Class 2, Level I). 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.

WIND LOAD TABLE

Table 1 – Ultimate wind load for non-vented HardieSoffit® panels

PRODUCT THICKNESS	FASTENER TYPE	FASTENER SPACING	FRAME TYPES	MAXIMUM STUD SPACING	ULTIMATE LOAD @ FAILURE	
					(kPa)	(psf)
4.5mm (.2")	4d common nail 38 mm (1.5") long	150 mm (6") on center	Nominal 2 x wood (s.g > .42)	406mm (16")	4.48	93.5
4.5mm (.2")	Min. No. 8 x 8.2 mm HD x 25 mm (1") long ribbed bugle head screw	150 mm (6") on center	Min. No. 20 ga x 92 mm x 35 mm (1.4") metal framing	406mm (16")	4.69	97.9
6.4mm (.25")	4d common nail 38 mm (1.5") long	200 mm (8") on center	Nominal 2 x wood (s.g > .42)	406mm (16")	4.24	88.6
6.4mm (.25")	4d common nail 38 mm (1.5") long	200 mm (8") on center	Nominal 2 x wood (s.g > .42)	406mm (16")	3.07	64.2
6.4mm (.25")	Min. No. 8 x 8.2 mm HD x 25 mm (1") long ribbed bugle head screw	150 mm (6") on center	Min. No. 20 ga x 92 mm x 35 mm (1.4") metal framing	610mm (24")	8.13	169.9

Table 2 – Ultimate wind load for Vented HardieSoffit panel

PRODUCT THICKNESS (mm)	FASTENER TYPE	FASTENER SPACING	FRAME TYPES	MAXIMUM STUD SPACING (mm)	ULTIMATE LOAD @ FAILURE	
					(kPa)	(psf)
6.4mm (.25")	Minimum 2.1 mm x 4.8 mm HD x 38 mm (1.5") long OR Min. No. 8 x 8.2 mm HD 25 mm (1") long ribbed bugle head screw	200 mm (8") on center at all bearing edges	Nominal 2 x wood (s.g > .40) OR Min. No. 20 ga x 92 mm x 35 mm (1.4") metal framing	406mm (16")	3.38	81

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		92	3/64	38	1-1/2	241	9-1/2
31	/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
61	5/64	19	3/4	150	6		
6.7	17/64	25	1	190	7-1/2		

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Product warranties, safety information and additional installation information are available at jameshardiepros.com

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