

INSTALLATION INSTRUCTIONS

ET&F PINS FOR USE ATTACHING JAMES HARDIE BRAND FIBER CEMENT SIDING TO STEEL STUDS

Fasteners shall be ET&F series AKN-100 or AGS-100, depending upon fastening method (see below). Pins have a nominal $\frac{1}{4}$ " or $\frac{5}{16}$ " diameter head, knurled shank, ballistic point and are finished with Aerico® 1000 polymer coating. The pins are identified with an "E" logo on the head as shown in Figure 1.

To determine the proper length fastener, add the siding thickness to the total thickness of sheathing (if any) and add minimum $\frac{3}{8}$ " for penetration through the steel stud. Fasteners are available in 1- $\frac{1}{2}$ ", 2" and 2- $\frac{1}{2}$ " lengths. Fasteners may be installed using the ET&F Model 500, Model 510 or Model 610 pneumatic tools. Fasteners are collated with extruded plastic or sheet plastic. These various collation media are identified with the suffix "NA" (extruded plastic) or "HA" (sheet plastic). The pin determines which tool to use, which then determines the collation style.

For blind nailing application to 33 mil (20 ga.) to 68 mil (14 ga) studs use the Model 510 tool and AGS-100 Series pins with $\frac{5}{16}$ " diameter head and extruded plastic collation. Blind nailing fastens through one plank only, through the sheathing and then to the steel stud, as shown in Figure 2 below. Blind nailing is the most common method for attaching Hardiplank® to steel framing.



FIGURE 1

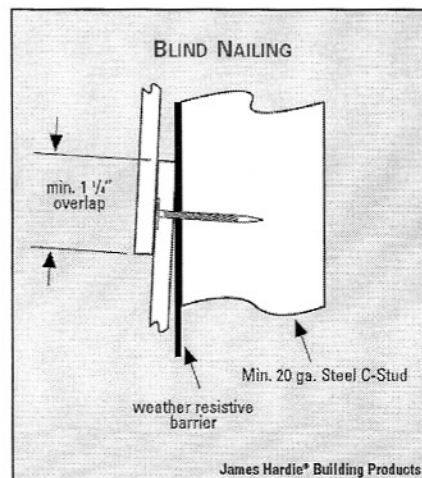


FIGURE 2

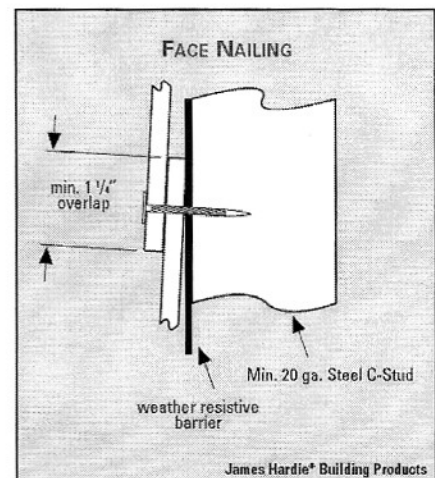


FIGURE 3

ET&F FASTENING SYSTEMS, INC.

29019 Solon Rd., Solon, Ohio 44139

PH: 800-248-2376 • 440-248-8655 Fax: 440-248-0423

For face nailing Hardiplank to 33 mil (20 ga.) to 68 mil (14 ga) 20-14 gauge studs use either the Model 500 or the Model 610 tool and AKN-100 series pins with 1/4" diameter head. The Model 500 requires extruded plastic collation and the Model 610 uses sheet plastic collated pins. Face nailing fastens through two overlapping Hardiplank boards, through the sheathing and then to the steel stud, as shown in Figure 3. Since the fastener is exposed the smaller (1/4") head is required. Face nailing is usually required in areas of high wind and/or when the exposure of the plank is eight inches or greater.

For best results, ET&F tools should be used with 3/8" ID air hoses. Use only 3/8" fittings on tools, hoses and compressors. Typically, air pressure requirements will be 90 – 120 psi, depending upon the thickness of steel stud. Set air pressure so that the fastener is driven flush with the surface of the siding. Be certain the compressor to be used will meet these requirements. Drain moisture from the air compressor tanks daily, more often during periods of high humidity.

See the James Hardie lap siding installation requirements for general instructions to be followed when installing siding. (Copy attached.) Refer to Table 4 in ET&F report RIO-2087C-07 for allowable wind speed based on building height, exposure category, plank width, stud spacing, fastener type and nailing pattern.



SELECT CEDARMILL® - SMOOTH - COLONIAL SMOOTH® - COLONIAL ROUGHSAWN® - BEADED CEDARMILL® BEADED SMOOTH - STRAIGHT-EDGE SHINGLE PLANK

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.

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 wind will blow dust away from user and others in working area.
2. Use one of the following methods:
 - a. Best:
 - i. Score and snap
 - ii. Shears (manual, electric or pneumatic)
 - b. Better:
 - i. Dust reducing circular saw equipped with a Hardieblade™ saw blade and HEPA vacuum extraction
 - c. Good:
 - i. Dust reducing circular saw with a Hardieblade saw blade (only use for low to moderate cutting)

INDOORS

1. Cut only using score and snap, or shears (manual, electric or pneumatic).
2. 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.

SD083105

GENERAL REQUIREMENTS

- Hardieplank™ lap siding can be installed over braced wood or steel studs spaced a maximum of 24" o.c. or directly to minimum 7/16" thick OSB sheathing*. Irregularities in framing and sheathing can mirror through the finished application.
- Hardieplank lap siding can also be installed over foam insulation/sheathing up to 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 local building code requirements. The water-resistive barrier must be appropriately installed with penetration and junction flashings in accordance with local building code requirements. James Hardie will assume no responsibility for water infiltration.
- Install James Hardie® products with a minimum 6" clearance to the finished grade on the exterior of the building or in accordance with local building codes if greater than 6" is required (fig. 3).
- Maintain a 1" - 2" clearance between James Hardie products and roofs, decks, paths, steps and driveways (figs. 4, 5 & 6).
- Maintain a 1/4" clearance between James Hardie products and horizontal flashing (fig. 7).
- Ensure gutters have end caps. Maintain a minimum 1" gap between end caps and siding & trim (fig.8).
- Install kickout flashing at roof-wall junctions (fig. 9).
- Adjacent finished grade must slope away from the building in accordance with local building codes - typically a minimum of 6" in the first 10'.
- Do not install James Hardie products, such that they may remain in contact with standing water.
- Hardieplank lap siding may be installed on vertical wall applications only.
- DO NOT use stain on James Hardie® products.

INSTALLATION:

JOINT TREATMENT - OPTION 1 (Preferred Option)

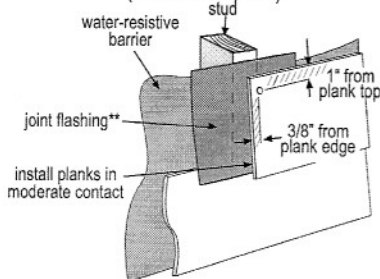
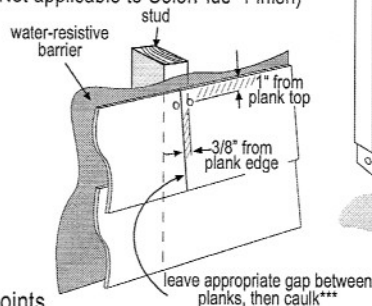


Figure 2

JOINT TREATMENT - OPTION 2 (Not applicable to ColorPlus® Finish)



Install factory finished edges together at butt joints.

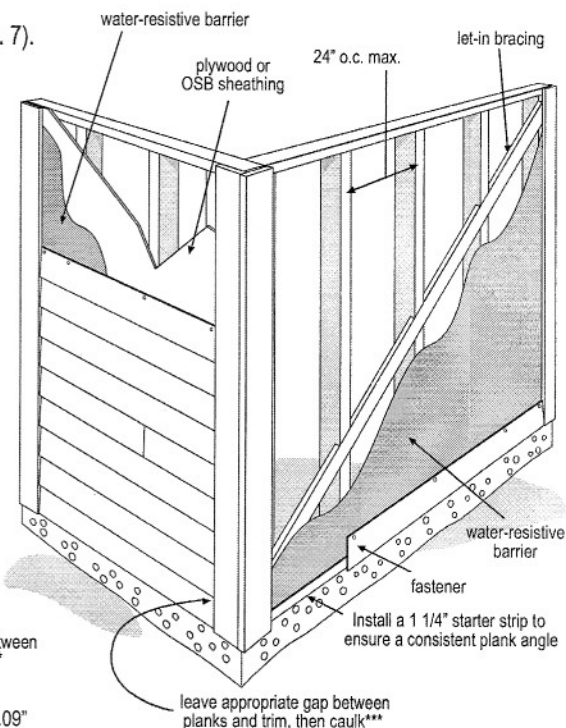
For other jointing options, refer to local building code or NER 405.

* If only nailed to sheathing, plank can be a maximum 9-1/4" wide and must be face nailed at 12" o.c. with 0.09" shank x 0.221" HD x 1.5" long corrosion resistant nails.

As required by local building code *Apply caulk in accordance with caulk manufacturers written application instructions.

Figure 1 Double Wall Construction

Single Wall Construction



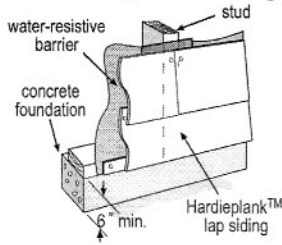
WARNING: AVOID BREATHING SILICA DUST

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.

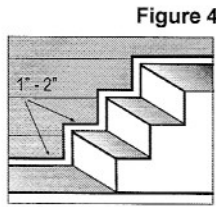
SD069005

CLEARANCES

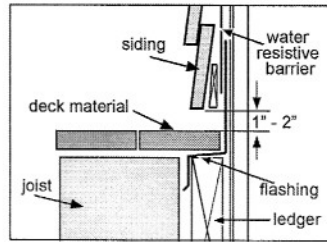
Install siding and trim products in compliance with local building code requirements for clearance between the bottom edge of the siding and the adjacent finished grade. **Figure 3**



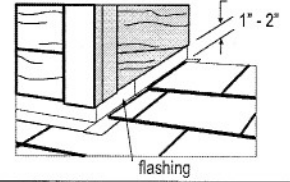
Maintain a 1" - 2" clearance between James Hardie® products and paths, steps and driveways. **Figure 4**



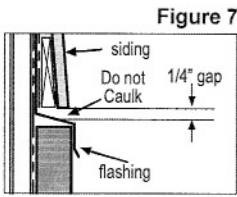
Maintain a 1" - 2" clearance between James Hardie products and decking material. **Figure 5**



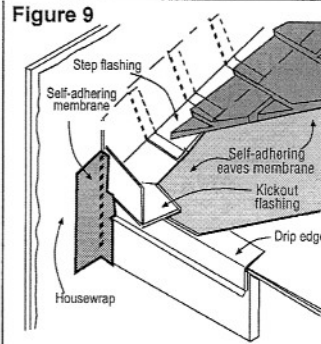
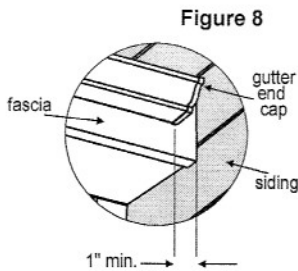
At the juncture of the roof and vertical surfaces, flashing and counterflashing shall be installed per the roofing manufacturer's instructions. Provide a 1" - 2" clearance between the roofing and the bottom edge of the siding and trim. **Figure 6**



Maintain a 1/4" clearance between the bottom of James Hardie products and horizontal flashing. Do not caulk gap. **Figure 7**



Maintain a minimum 1" gap between gutter end caps and siding & trim. **Figure 8**



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 9, Kickout Flashing† To prevent water from dumping behind the siding and the end of the roof intersection, install a "kickout" of sufficient length and angle to direct the water running down the roof away from the siding.

FASTENER REQUIREMENTS**

FACE NAILING

Nails - Wood

- 6d (0.113" shank x 0.267" HD x 2" long)
- Siding nail (0.09" shank x 0.221" HD x 2" long)
- Siding nail (0.09" shank x 0.221" HD x 1-1/2" long)*

Screws - Steel

- Ribbed Bugle-head or equivalent (No. 8-18 x 1-5/8" long x 0.323" HD) Screws must penetrate 1/4" or 3 threads into metal framing.

Nails - Steel

- ET & F pin or equivalent (0.10" shank x 0.25" HD x 1-1/2" long)

BLIND NAILING

Nails - Wood

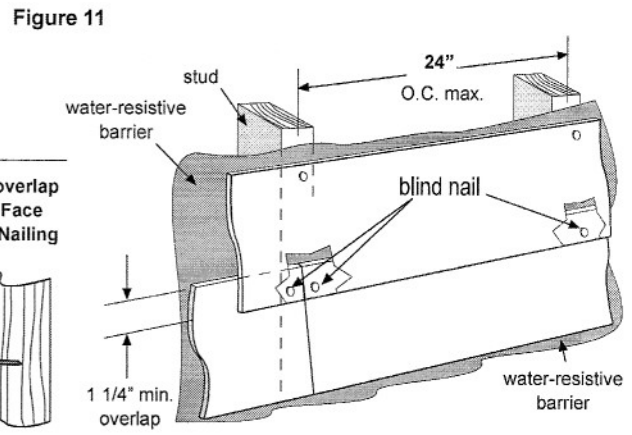
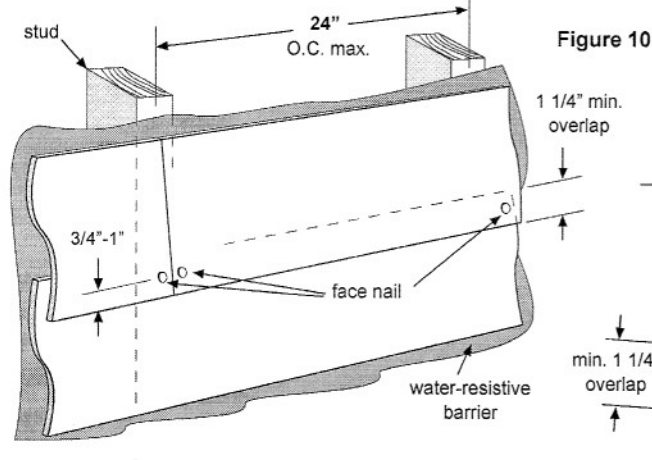
- Siding nail (0.09" shank x 0.221" HD x 2" long)
- 11ga. roofing nail (0.121" shank x 0.371" HD x 1.25" long)

Screws - Steel

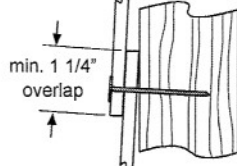
- Ribbed Wafer-head or equivalent (No. 8 x 1 1/4" long x 0.375" HD) Screws must penetrate 1/4" or 3 threads into metal framing.

Nails - Steel

- ET & F Panelfast® nails or equivalent (0.10" shank x 0.313" HD x 1-1/2" long)



Minimum overlap for Both Face and Blind Nailing



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

† The illustration (figure 9) and associated text was reprinted with permission of THE JOURNAL OF LIGHT CONSTRUCTION. For subscription information, call (800) 375-5981 or visit www.jlconline.com.

* When face nailing to OSB, planks must be no greater than 9 1/4" wide and fasteners must be 12" o.c. or less.

** Also see General Fastening Requirements.

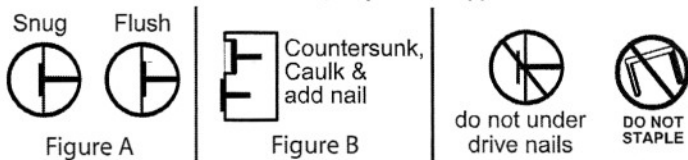
GENERAL FASTENING REQUIREMENTS

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.

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).

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



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 or ASTM C1193.

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

- Touch up nicks, scrapes and nail heads using the ColorPlus® technology touch-up applicator. Touch-up paint 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.

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
- Oil/alkyd base paints or semi transparent stains are not recommended
- 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 (1 SQ = 100 sq.ft.)	HARDIEPLANK™ LAP SIDING WIDTH									
	(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	9 1/4 8	9 1/2 8 1/4	12 10 3/4
1		25	20	17	16	15	14	13	13	9
2		50	40	33	32	30	29	25	25	19
3		75	60	50	48	44	43	38	38	28
4		100	80	67	64	59	57	50	50	37
5		125	100	83	80	74	71	63	63	47
6		150	120	100	96	89	86	75	75	56
7		175	140	117	112	104	100	88	88	65
8		200	160	133	128	119	114	100	100	74
9		225	180	150	144	133	129	113	113	84
10		250	200	167	160	148	143	125	125	93
11		275	220	183	176	163	157	138	138	102
12		300	240	200	192	178	171	150	150	112
13		325	260	217	208	193	186	163	163	121
14		350	280	233	224	207	200	175	175	130
15		375	300	250	240	222	214	188	188	140
16		400	320	267	256	237	229	200	200	149
17		425	340	283	272	252	243	213	213	158
18		450	360	300	288	267	257	225	225	167
19		475	380	317	304	281	271	238	238	177
20		500	400	333	320	296	286	250	250	186

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 Legacy Report NER-405, Hardieplank™ lap siding is recognized as a suitable alternate to that specified in: the BOCA National Building Code/1999, the 1997 Standard Building Code, the 1997 Uniform Building Code, the 1998 International One- and Two-Family Dwelling Code, the 2003 International Building Code, and the 2003 International Residential Code for One-and Two-Family Dwellings. 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.

© 2008 James Hardie International Finance B.V. All rights reserved.
TM, SM, and ® denote trademarks or registered trademarks of
James Hardie International Finance B.V. ® is a registered trademark
of James Hardie International Finance B.V.

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

Panelfast is a registered trademark of ET&F Fastening Systems, Inc.



JamesHardie