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WEBSHIELD® PANELS

CSI Section:

06 17 33 Wood I-Joists

1.0 RECOGNITION

WEBshield® Panels recognized in this report have been evaluated for use as protective panels to enhance the fire performance of pre-fabricated wood I-joists. The fire-resistance properties of the WEBshield® Panels comply with the intent of the provisions of the following codes and regulations:

- 2018, 2015, and 2012 International Building Code® (IBC)
- 2018, 2015, and 2012 International Residential Code® (IRC)

2.0 LIMITATIONS

Use of the WEBshield® Panels recognized in this report is subject to the following limitations:

2.1 The panels shall be installed in accordance with the applicable code, the manufacturer’s published installation instructions, and this report. Where there is a conflict, the more restrictive requirements shall govern.

2.2 Except as prescribed in Section 3.5 of this report, cutting, drilling, or otherwise altering the panels is outside the scope of recognition.

2.3 The in-service moisture content of the WEBshield® Panels shall be 16 percent or less.

2.4 Installation of the WEBshield® Panels shall be by Pinkwood Ltd. certified installers.

2.5 The WEBshield® Panels recognized in this report are produced by Pinkwood Ltd. in Calgary, Alberta, Canada.

3.0 PRODUCT USE

3.1 General: WEBshield® Panels are used to protect the webs of wood I-joists to provide equivalent fire performance to 2-inch by 10-inch nominal dimension lumber (38.1 mm by 235 mm) in residential floor applications. The patented FRI Assembly consisting of I-joists and WEBshield® Panels

is recognized for installation without the prescribed minimum ½-inch-thick (12.7 mm) gypsum board or ⅝-inch-thick (15.9 mm) wood structural panel membrane in accordance with Exception 4 to 2012 IRC Section R501.3 or 2015 and 2018 IRC Section R302.13. Recognition for this application is limited to designs in accordance with Section 3.2 of this report and installation in accordance with Section 3.3 of this report.

3.2 Design: FRI Assembly shall be used for applications having a maximum live load of 40 psf (1,915 N/m²) and a maximum dead load of 20 psf (958 N/m²). For use in FRI Assembly, the allowable moment in the wood I-joist evaluation report shall be reduced to 82 percent for minimum WEBshield® coverage in accordance with Table 2 of this report. Panels added beyond the minimum WEBshield® coverage shall be installed symmetrically about the I-joist center-line in accordance with Table 3 of this report to increase web protection and reclaim part or all of the allowable moment capacity as per Table 3 of this report.

3.3 Installation: The WEBshield® Panels shall be installed in accordance with Figure 1 of this report. Installation of WEBshield® Panels shall also be in accordance with the applicable code, the manufacturer’s installation instructions, and this report. A copy of this evaluation report shall be available on the jobsite for quality control purposes during construction. The panels shall be used as a component in FRI Assembly and are described in Section 4.0 of this report.

WEBshield® Panels shall be installed under the supervision of installers certified by Pinkwood Ltd. The certifications may be verified at www.webshieldpanels.com.

3.4 Wood I-joists used in FRI Assembly: Wood I-joists used in FRI Assembly shall comply with ASTM D5055, shall be recognized in a evaluation report issued by an approved evaluation agency, shall be limited to 9½-inch (241 mm) through 14-inch (356 mm) depths, shall have solid sawn flanges and wood structural panel oriented strand board (OSB) webs, and shall conform to the minimum size and strength property requirements specified in Table 1 of this report.

3.5 Web holes in FRI Assembly: Holes in the webs of wood I-joists used in FRI Assembly are subject to the maximum size and location requirements specified in the code approved evaluation report for the wood I-joist complying with Section 3.4 of this report. Additionally, where the desired hole coincides with the location of a WEBshield® Panel, the following rules apply:

- A hole not exceeding 1½ inches (38.1 mm) in diameter may be located anywhere within a WEBshield® Panel.





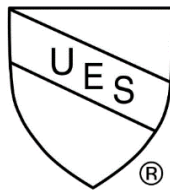
b. When a 1½-inch-diameter (38.1 mm) hole is insufficient for the specific end-use application, a single maximum 6-inch-diameter (152 mm) hole may be cut in a WEBshield® Panel. When such a hole is cut, additional 6-inch-wide (152 mm) full-depth WEBshield® Panels shall be installed back-to-back adjacent to the penetrated panels and fastened to the web as described in Figure 1 of this report, using fasteners at the top and bottom of each panel in accordance with the installation instructions.

4.0 PRODUCT DESCRIPTION

WEBshield® Panels are Exposure 1 OSB panels, nominally 15/32 inch (11.9 mm) thick, by 24 inches (610 mm) long, and manufactured to fit between the top and bottom flanges of eligible I-joists to protect the webs in FRI Assembly. The panels are designated as ws-10 for use with 9½-inch-depth (241 mm) I-joists; ws-12 for use with 117/8-inch-depth (302 mm) I-joists; and ws-14 for use with 14-inch-depth (356 mm) I-joists. Six-inch (152 mm) and 12-inch (305 mm) nominal-width, full-depth WEBshield® partial panels may be cut from undamaged WEBshield® Panels.

5.0 IDENTIFICATION

WEBshield® Panels are identified by the product name (WEBshield®), and the evaluation report number (ER-653) printed on both ends. Pallets of WEBshield® Panels are identified with the designation corresponding to the I-joist depth (ws-10, ws-12, or ws-14). The identification includes the IAPMO Uniform Evaluation Service Mark of Conformity. Either Mark of Conformity may be used as shown below:



or

IAPMO UES ER-653

6.0 SUBSTANTIATING DATA

6.1 Data and analysis in accordance with ASTM D5055, Standard Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists.

6.2 Documentation describing the manufacturer’s quality management system.

6.3 I-joist floor installation details and product descriptive literature.

6.4 Reports of fire-resistance testing in accordance with AC14 Section A4.4 –Fire Protection of Floors, demonstrating equivalent fire performance to 2-inch by 10-inch nominal dimension lumber (38.1 mm by 235 mm).

7.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research carried out by IAPMO Uniform Evaluation Service on Pinkwood Ltd.’s FRI Assembly to assess conformance to the codes shown in Section 1.0 of this report and serves as documentation of the product certification. WEBshield® Panels are manufactured at locations noted in Section 2.5 of this report under a quality control program with periodic inspection under the supervision of IAPMO UES.

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For additional information about this evaluation report please visit www.uniform-es.org or email us at info@uniform-es.org



TABLE 1 - REQUIREMENTS FOR I-JOISTS USED IN FRI ASSEMBLY

Flange ³			Webstock	Min. Design Properties ¹ (ASD)	
Min. Specific Gravity	Min. Size (inches)		Min. Thickness (inches)	Allowable Moment ² (lbf-ft)	Bending Stiffness EI (x10 ⁶ lbf-in ²)
	Depth	Width			
0.42	1 1/2	2 1/2	3/8	2365	168

For S.I.: 1 inch = 25.4 mm; 1 lbf-ft = 1.4 N-m; 1 lbf-in² = 0.00284 N-m²

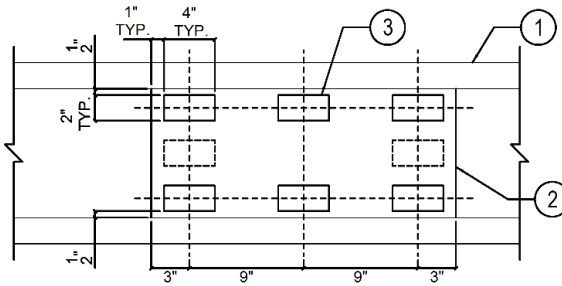
1. Min. Design Properties refer to the design preoperties of Allowable Stress Design (ASD) published in the code evaluation report by the I-joist manufacturers.
2. The Allowable Moment refers to the published design value before the reduction factor 0.82 is applied.
3. The flanges shall be solid sawn lumber, full length or finger-jointed using approved glue meeting the heat durability requirements for I-joists per ASTM D5055.

TABLE 2 - MINIMUM QUANTITY OF WEBSHIELD PANELS

Joist Span	WEBSHIELD Length		Joist Span	WEBSHIELD Length		Joist Span	WEBSHIELD Length	
	24"	12"		24"	12"		24"	12"
≤	Min. Quantity		≤	Min. Quantity		≤	Min. Quantity	
26'	12		18'	8		10'	4	
25'	12		17'	8		9'	4	
24'	12		16'	8		8'	4	
23'	10	2	15'	6	2	7'	2	2
22'	10		14'	6		6'	2	
21'	10		13'	6		5'	2	
20'	10		12'	6		4'	2	
19'	8	2	11'	4	2	3'		2

For S.I.: 1 inch = 25.4 mm; 1 ft = 305 mm

- 1) Wood I-joint per plan
- 2) WEBshield panels
- 3) Fastener zones - one fastener to be installed in each of the 8 zones

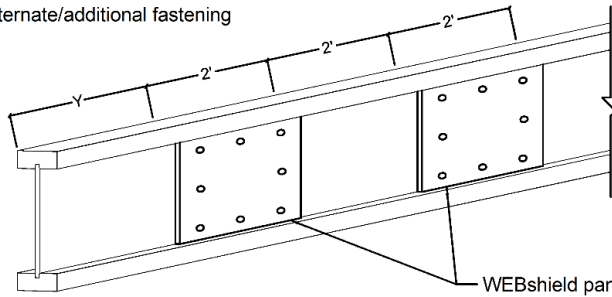


WEBshield panels shall be installed tightly against the I-joint web at prescribed intervals, back-to-back on each side, to protect the web against exposure to flame. Fasten each panel using 16-gauge by 7/16-inch-crown staples, or equivalent, according to the following specifications.

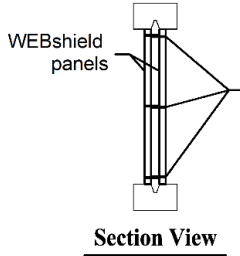
Installation Details: Use (8) 3/4-inch-long staples, minimum, to attach 15/32-inch-thick WEBshield panels as shown. WEBshield panels shall be installed at 4-foot-on center spacing intervals with a 0.5" spacing tolerance. End panels shall begin within 2 feet from the ends of the I-joints (dimension y).

The 3/4-inch-long fasteners shall be installed at 90 degrees to the panel surface for adequate penetration to hold the panel against the I-joint web.

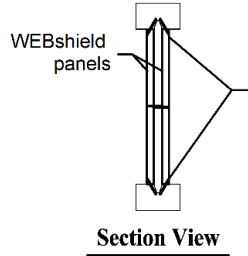
See Table 4 for alternate/additional fastening requirements



See Table 2 - Minimum Quantity of WEBshield Panels



Fasteners in WEBshield panels on opposite sides of the web shall be staggered to avoid interference.



Using longer fasteners is permissible provided the fasteners are installed at an angle. Care must be taken to ensure the fasteners penetrate sufficiently into the I-joint to secure the panels, and also to avoid punching through and detaching the WEBshield panels on the opposite side of the web.

TABLE 4 - PRESCRIBED FASTENING FOR WEBSHIELD PANEL INSTALLATION USING STAPLES

Fastening Options	Fastening at 90 degrees to WEBshield Panel Surface				Fastening at Angle to WEBshield Panel Surface			
	Edge Staples		Mid-depth Staples		Edge Staples		Mid-depth Staples	
	Staple Count	Staple Length	Staple Count	Staple Length	Staple Count	Staple Length	Staple Count	Staple Length
15/32" WEBshield	6	3/4"	2	3/4"	6	1-1/4"	2	3/4" ⁽¹⁾

For SI: 1 inch = 25.4 mm

1) 3/4-inch mid-depth staple shall be driven at 90 degrees to the panel surface.

FIGURE 1 - WEBshield Installation Details