



NYC Department of Buildings  
280 Broadway, New York, NY 10007  
Patricia Lancaster, FAIA, Commissioner  
(212) 566-5000, TTY: (212) 566-4769

## Report of Materials and Equipment Acceptance Division

Pursuant to Administrative Code Section 27-131, the following equipment or material has been found acceptable for use subject to the terms and conditions contained herein.

### MEA 393-91-E Vol.4

**Manufacturer:** Jager Building Systems, Inc.  
86 Healey Road, Bolton, Ontario L7E 5A7, CANADA  
(Produced in Calgary AB, Blainville QC, & Bolton ON)

**Trade Name(s):** JSI

**Product:** Wooden I-joists

**Pertinent Code Section(s):** 27-617 through 27-624 and Reference Standard RS 10

**Prescribed Test(s):** ASTM D-5055

**Laboratory:** Jager Production Laboratory at each Plant with APA 3<sup>rd</sup> Party witness and PE approval signatures.  
All other reports sealed by J. Mark Bartel, New York State Professional Engineer - License No. 078345

**Test Report(s):** Blainville Plant: (JSI 2000, JSI 3000, JSI 4000, JSI 3500, JSI 5500 )  
APA Report T2005M-98, dated December 5, 2005  
APA Report T2007M-28, dated March 27, 2007  
APA Report T2007M-52, dated June 27, 2007  
Calgary Plant: (JSI 2000, JSI 3000, JSI 4000, JSI 4400)  
APA Report T2005M-77, dated October 26, 2005.  
Bolton Plant: (JSI 2000, JSI 3000).  
APA Report T2005M-88, dated November 14, 2005.

**Description:** The JSI Series I-Joists are pre-fabricated structural wood members using sawn lumber and Laminated Veneer Lumber (LVL) flanges and exterior-grade-oriented strand board (OSB) webs bonded together with exterior-grade adhesives forming an "I" cross-sectional shape. The web-to-flange connection is a proprietary, glue, tongue-and-groove joint. The web is mechanically pressed into the flange groove forming a self-locking joint. The web-to-web connection of the OSB panels is a full-depth, V-shaped glued joint. JSI Series I-Joists are uniform in depth from 9½ to 20 inches and are produced in lengths from 8 to 52 feet.

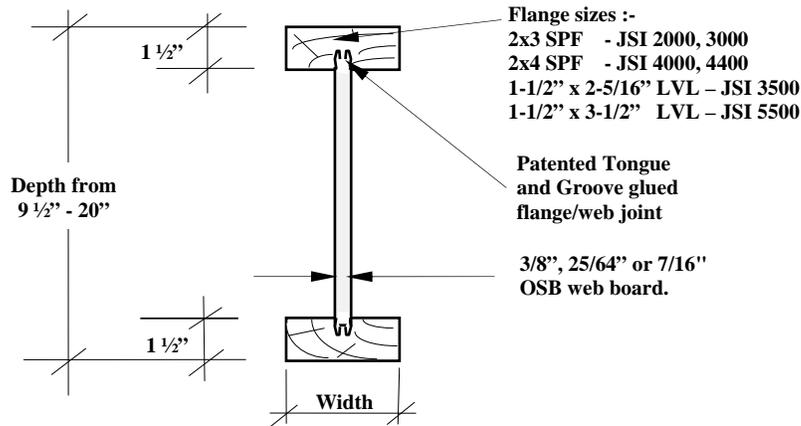
The adhesive used in the gluing operations meets the requirements of ASTM D-2559.

**Table 1 – Allowable Design Values for JSI Series I-Joist <sup>1</sup>**

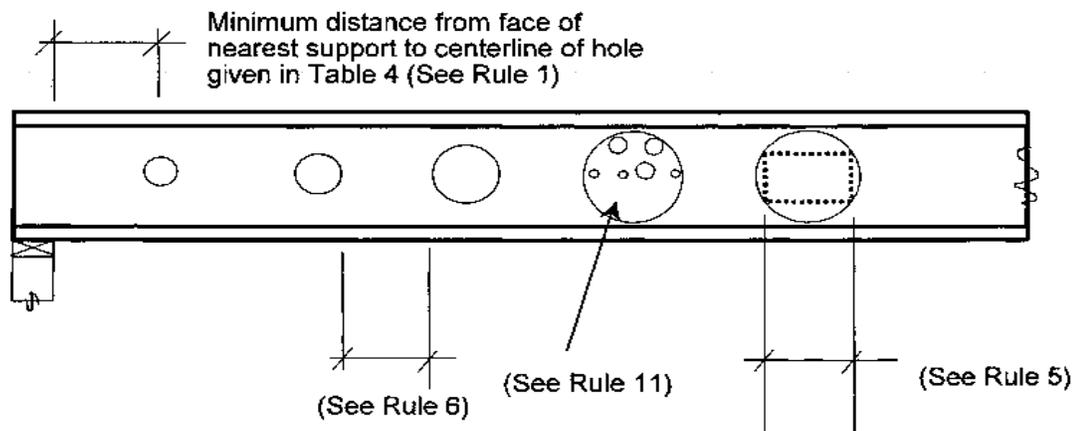
Joist Depth (in.)	Joist Series	Self Weight (lb / ft)	EI <sup>5</sup> (10 <sup>6</sup> lb-in. <sup>2</sup> )	Moment <sup>7</sup> (lb-ft)	Shear (lb)		Intermediate Reaction <sup>4</sup> (lb)	End Reaction <sup>2</sup> (lb)		K <sup>6</sup> (lb x 10 <sup>6</sup> )
					No Stiffener	Web Stiffener		1-1/2 in. Bearing	1-3/4 in. Bearing	
9-1/2	JSI 2000	2.52	193	2,735	1,120		2,160	1,070	1,080	4.94
	JSI 3000	2.62	231	3,780	1,120		2,160	1,070	1,080	4.94
	JSI 4000	3.37	320	5,355	1,120		2,470	1,070	1,080	4.94
11-7/8	JSI 2000	2.78	330	3,545	1,420	1,420	2,500	1,160	1,200	6.18
	JSI 3000	2.88	396	4,900	1,420	1,420	2,500	1,160	1,200	6.18
	JSI 3500	2.82	420	6,595	1,420	1,420	2,335	1,100	1,160	6.18
	JSI 4000	3.63	547	6,940	1,420	1,420	2,760	1,200	1,280	6.18
	JSI 4400	3.76	600	8,485	1,420	1,420	2,760	1,200	1,280	6.18
	JSI 5500	4.27	604	8,770	1,925	1,925	3,355	1,300	1,400	6.18
14	JSI 2000	3.02	482	4,270	1,550	1,710	2,500	1,160	1,200	7.28
	JSI 3000	3.11	584	5,895	1,550	1,710	2,500	1,160	1,200	7.28
	JSI 3500	3.07	613	7,865	1,550	1,710	2,335	1,100	1,160	7.28
	JSI 4000	3.87	802	8,360	1,550	1,710	3,020	1,200	1,280	7.28
	JSI 4400	4.00	876	10,215	1,550	1,710	3,020	1,200	1,280	7.28
	JSI 5500	4.64	881	10,460	1,885	2,125	3,355	1,300	1,400	7.28
16	JSI 2000	3.24	657	4,950	1,550	1,970	2,500	1,160	1,200	8.32
	JSI 3000	3.34	799	6,835	1,550	1,970	2,500	1,160	1,200	8.32
	JSI 3500	3.29	841	9,010	1,550	1,970	2,335	1,100	1,160	8.32
	JSI 4000	4.09	1,092	9,690	1,550	1,970	3,020	1,200	1,280	8.32
	JSI 4400	4.22	1,186	11,845	1,550	1,970	3,020	1,200	1,280	8.32
	JSI 5500	4.98	1,192	11,985	1,885	2,330	2,330	1,300	1,400	8.32
18	JSI 4000	4.31	1,398	10,960	N/A	2,230	3,020	1,700 <sup>3</sup>	1,990 <sup>3</sup>	9.36
	JSI 4400	4.44	1,546	13,390	N/A	2,230	3,020	1,700 <sup>3</sup>	1,990 <sup>3</sup>	9.36
20	JSI 4000	4.53	1,771	12,130	N/A	2,490	3,020	1,700 <sup>3</sup>	1,990 <sup>3</sup>	10.40
	JSI 4400	4.66	1,956	14,825	N/A	2,490	3,020	1,700 <sup>3</sup>	1,990 <sup>3</sup>	10.40

For SI: 1 inch = 25.4 mm, 1 pound = 4.4482 N, 1 lb-ft = 1.3558 N-m, 1 lb-in<sup>2</sup> = 2.8698 kN-mm<sup>2</sup>, 1 lb/ft = 14.594 N/m.

- 1 Allowable design values, except EI and K, may be adjusted for the appropriate load duration factor as permitted by the applicable code.
- 2 Allowable end reactions of joists with a bearing length of 1½ inches (38 mm) or inches 1¾ inch (44 mm) are for I-joists without bearing stiffeners; except as shown in shaded area. For a bearing length of 4 inches (102 mm), the allowable end reaction may be set equal to the tabulated allowable shear value. Interpolation of allowable end reactions between the 1¾-inch (44 mm) and 4-inch (102 mm) bearing lengths is permitted. For end reaction values over 1550lb. (6.89 kN), bearing stiffeners are required with the exception of the JSI 5500 Series, which requires stiffeners when end reactions values exceed 1,885lb, (8.38 kN).
- 3 For the 18- and 20-inch (457 and 508 mm) joist depths, bearing stiffeners must be used at end reactions.
- 4 Allowable intermediate reactions are for I-joists without bearing stiffeners, and a minimum intermediate reaction bearing length of 3½ inches (89 mm). For the 18- and 20-inch (457 and 508 mm) joist depths, the allowable intermediate may be set equal to 3980 lb (17.7 kN) where bearing stiffeners are used.
- 5 Bending stiffness (EI) for the I-Joist.
- 6 Coefficient of shear deflection (K) for the I-Joist.
- 7 Repetitive member use factor is equal to 1.00.



**Figure No. 1 - Typical JSI® Joist Cross - Section**



**Rules for cutting holes in the web of JSI Series I-Joists**

1. The distance between the inside edge of the support and the centerline of any hole must be in compliance with the requirements of Table 2.
2. I-Joist top and bottom flanges must never be cut, notched, or otherwise modified.
3. Whenever possible, field-cut holes should be centered on the middle of the web.
4. The maximum size hole that may be cut into an I-Joist web is equal the clear distance between the flanges minus 1/4 inch (6.35 mm). A minimum of 1/8 inch (3.18 mm) must always be maintained between the top or bottom of the hole and the adjacent I-Joist flange.
5. The sides of square holes or longest sides of rectangular holes must not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
6. Where more than one hole is necessary, the distance between adjacent hole edges shall equal or exceed twice the diameter of the largest round hole or twice the size of the largest square hole (or twice the length of the longest side of the longest rectangular hole) and each hole must be sized and located in compliance with the requirements of Table 2.
7. No more than 3 maximum size holes are permitted per span.
8. 1 1/2 inch (38 mm) diameter holes are permitted anywhere in a cantilevered section of a JSI Series I-Joist. Holes of greater size may be permitted, subject to verification by a design professional or the I-Joist manufacturer.
9. A 1 1/2 inch (38 mm) diameter hole can be placed anywhere in the web provided that it meets the requirements of Rule 6 above.
10. For I-joists with more than one span, use the longest span to determine hole location in either span.
11. A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

## Figure No. 2 - Hole Cutting Rules for JSI® Joists

**Table 2—Allowable Web Holes - 40 PSF Live load & 10 PSF Dead Load** <sup>1,2,3,4,5,6,7</sup>

Joist Depth (in.)	Joist Series	Minimum Distance from Inside Face of Any Support to Centre of Hole														
		Round Hole Diameter (in.)														
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4
9-1/2	JSI 2000	0'-9"	2'-0"	3'-3"	4'-7"	6'-1"	6'-6"									
	JSI 3000	2'-4"	3'-7"	4'-11"	6'-5"	8'-3"	8'-10"									
	JSI 4000	3'-6"	4'-10"	6'-5"	8'-3"	10'-3"	10'-9"									
11-7/8	JSI 2000	0'-7"	0'-8"	1'-6"	2'-9"	4'-1"	4'-5"	5'-6"	7'-0"	8'-3"						
	JSI 3000	0'-11"	2'-2"	3'-5"	4'-9"	6'-2"	6'-6"	7'-8"	9'-6"	11'-2"						
	JSI 3500	0'-7"	1'-8"	3'-3"	4'-10"	6'-7"	7'-0"	8'-6"	10'-10"	12'-4"						
	JSI 4000	2'-4"	3'-8"	5'-3"	7'-0"	8'-9"	9'-3"	10'-8"	12'-9"	14'-1"						
	JSI 4400	2'-6"	4'-1"	5'-9"	7'-5"	9'-3"	9'-9"	11'-2"	13'-3"	14'-8"						
	JSI 5500	0'-8"	2'-3"	4'-0"	5'-9"	7'-7"	8'-0"	9'-6"	11'-7"	13'-0"						
14	JSI 2000	0'-7"	0'-8"	0'-10"	2'-0"	3'-2"	3'-6"	4'-5"	5'-8"	6'-7"	7'-1"	8'-8"	10'-7"			
	JSI 3000	0'-7"	0'-8"	1'-9"	3'-2"	4'-8"	5'-0"	6'-2"	7'-10"	8'-11"	9'-7"	11'-10"	14'-1"			
	JSI 3500	0'-7"	0'-8"	1'-3"	3'-0"	4'-9"	5'-2"	6'-7"	8'-6"	9'-10"	10'-7"	13'-0"	15'-3"			
	JSI 4000	2'-2"	3'-5"	4'-9"	6'-3"	7'-11"	8'-3"	9'-6"	11'-3"	12'-6"	13'-4"	15'-8"	17'-7"			
	JSI 4400	2'-8"	4'-1"	5'-7"	7'-2"	8'-9"	9'-2"	10'-5"	12'-3"	13'-5"	14'-1"	16'-4"	18'-3"			
16	JSI 5500	1'-0"	2'-4"	3'-9"	5'-3"	6'-9"	7'-2"	8'-4"	10'-4"	11'-8"	12'-6"	14'-10"	16'-8"			
	JSI 2000	0'-7"	0'-8"	1'-2"	2'-2"	3'-3"	3'-6"	4'-4"	5'-5"	6'-1"	6'-7"	7'-9"	8'-10"	9'-3"	11'-5"	13'-4"
	JSI 3000	0'-7"	0'-8"	1'-5"	2'-8"	4'-0"	4'-3"	5'-4"	7'-0"	8'-1"	8'-8"	10'-6"	11'-11"	12'-6"	15'-2"	17'-3"
	JSI 3500	0'-7"	0'-8"	0'-8"	1'-9"	3'-5"	3'-11"	5'-5"	7'-7"	8'-11"	9'-10"	12'-1"	13'-11"	14'-7"	17'-3"	19'-5"
	JSI 4000	2'-3"	3'-7"	4'-10"	6'-2"	7'-7"	7'-11"	9'-2"	10'-11"	12'-0"	12'-9"	14'-8"	16'-2"	16'-9"	19'-6"	21'-9"
	JSI 4400	2'-7"	4'-1"	5'-7"	7'-2"	8'-10"	9'-3"	10'-6"	12'-4"	13'-5"	14'-2"	16'-1"	17'-8"	18'-2"	20'-5"	22'-6"
18 <sup>7</sup>	JSI 5500	0'-9"	2'-3"	3'-9"	5'-4"	6'-11"	7'-4"	8'-7"	10'-4"	11'-6"	12'-2"	14'-1"	15'-7"	16'-2"	18'-6"	20'-7"
	JSI 4000	0'-7"	0'-8"	1'-7"	2'-11"	4'-3"	4'-7"	5'-7"	6'-11"	7'-10"	8'-4"	9'-10"	11'-0"	11'-5"	13'-2"	14'-11"
20 <sup>7</sup>	JSI 4400	0'-7"	1'-8"	2'-11"	4'-3"	5'-7"	5'-11"	7'-0"	8'-5"	9'-4"	10'-0"	11'-10"	13'-3"	13'-9"	15'-10"	17'-5"
	JSI 4000	0'-7"	0'-8"	0'-8"	1'-3"	2'-7"	2'-10"	3'-10"	5'-2"	6'-1"	6'-7"	8'-0"	9'-1"	9'-5"	11'-0"	12'-2"
	JSI 4400	0'-7"	0'-8"	0'-8"	1'-8"	2'-11"	3'-3"	4'-4"	6'-0"	7'-1"	7'-8"	9'-6"	10'-10"	11'-3"	13'-2"	14'-8"

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

- Distances in this table apply to uniformly loaded joists, simple or continuous span, with dead loads of 10 psf (479 Pa) and live loads of 40 psf (1920 Pa).
- Hole location distance is measured from inside face of support to center of hole.
- Minimum distances are valid for I-Joist spacing of 24 inches (610 mm) o.c. or less, where decking is glued and nailed to top flanges. Where joist spacing is 24 inches (610 mm) o.c., a minimum of 23/32-inch (18.3 mm) OSB decking must be used. Where spacing is less than 24 inches (610 mm) o.c., a minimum of 19/32-inch (15.1 mm) OSB decking must be used.
- For continuous joists with more than one span, use the longest span to determine hole location in either span.
- See Figure 2 for illustration of hole placement.
- Based on a maximum live load deflection of L/360.
- For the 18- and 20-inch (457 and 508 mm) joist depths, bearing stiffeners must be used at end reactions.

**Terms and Conditions:** The above JSI joists are accepted on the condition that:

- All uses, locations and installations shall comply with the applicable requirements of the New York City Building Code and Technical Policy and Procedure Notice #8, 1992, dated August 19, 1992 (attached) and TPPN #2, 2000 dated July 24, 2000 (attached).
- Structure designs using the JSI joists shall conform to the manufacturer's specifications except that appropriate design load(s), deflection limitation(s) and other performance standards of the New York City Building Code shall apply.
- The glue used shall not delaminate during a fire.
- JSI joists shall be used indoors.

5. When stored out-of-doors, or exposed to wet weather conditions during construction, JSI joists shall be inspected by the user for flange-web separation, swelling or warping and replaced if so damaged.
6. The size and location of any cutouts in the web of the joist shall not exceed the manufacturer's recommendations and shall be subject to controlled inspection.
7. The flanges of JSI joists shall not be cut, notched or bored.
8. Fire-stopping shall be provided between the ceiling and floor or roof above and shall be divided into approximately equal areas not greater than 500 square feet.
9. All shipments and deliveries of such materials shall be provided with a label, suitably placed, certifying that the materials shipped or delivered are equivalent to those tested and accepted for use, as provided in Section 27-131 of the New York City Building Code.
10. The building permit applicant shall notify the Fire Department of the proposed installment of JSI joists prior to the Building Department issuance of a construction permit. Evidence of such notification shall be a certifying statement submitted on Form TR-1, Technical Report, reading as follows:

I hereby state that I have mailed a copy of this statement to the Fire Department Bureau of Fire Prevention, Technology Management Unit, as notification of the proposed installation of "Prefabricated Wood I-Joists" at this location.

This statement shall be placed on the reverse side of the form in the lower right-hand box.

The copy of the completed form TR-1 shall be mailed to the new address at:  
Chief-in-Charge of the Bureau of Fire Prevention  
Fire Department of the City of New York  
Technology Management Unit  
9 MetroTech Center  
Brooklyn, N.Y. 11201-3857

**Note:** In accordance with Section 27-131 (d), all materials tested and accepted for use shall be subject to periodic retesting as determined by the Commissioner; and any material which upon retesting is found not to comply with Code requirements or the requirements set forth in the approval of the Commissioner, shall cease to be acceptable for the use intended. During the period for such retesting, the Commissioner requires the use of such material to be restricted or discontinued, if necessary, to secure safety.

Final Acceptance May 6, 2008  
Examined By Donald J. J. J.