



Report of Materials and Equipment Acceptance Division

NYC Department of Buildings
280 Broadway, New York, NY 10007
Robert D. LiMandri, Acting Commissioner
(212) 566-5000, TTY: (212) 566-4769

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 124-08-E

Manufacturer: Georgia-Pacific Wood Products South LLC
19953 US Highway 31, Thorsby, Alabama 35171

Trade Name(s): Broadspan™ I-Joists

Product: BSI-400, BSI-700 and BSI-900 series prefabricated wood I-joists

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

Prescribed Test(s): ASTM D5055: Allowable moment capacity, allowable shear capacity, stiffness and reaction capacities

Laboratory: APA-The Engineered Wood Association
Allowable clear spans and design stresses were certified by Scott K. Rutland, PE., New York State License #078840-1

Test Report(s): APA Supplemental Report T2003P-70-S1A to R2003P-70, December 17, 2007.
APA Report T2003P-70: ASTM D5055P-02 I-Joist Moment Capacities, November 5, 2003.

Description: Broadspan™ I-Joists are prefabricated I-joists, manufactured in accordance with ASTM D5055. The joist series are manufactured with laminated veneer lumber (LVL) flanges in accordance with the approved quality control manual. The web material is OSB-manufactured in accordance with Exposure 1 from DOC Voluntary Product Standards PS 1-07 and PS 2-92 and further requirements as specified in the plant manufacturing standards. The web-to-web and web-to-flange are proprietary tongue-and-groove glued joints. The joint adhesive is a phenol-resorcinol adhesive conforming to ASTM D2559. The top and bottom flanges are parallel forming a constant depth joist. These products have been tested and assigned design values for use in structural applications. Product quality and performance is assured through daily quality assurance checks and third party inspections.

Design Properties:

Broadspan™ Joist Series	Depth	EI ⁽²⁾ (10 ⁶ in. ² -lbs)	M ⁽³⁾ (ft.-lbs)	V ⁽⁴⁾ (lbs)	IR ⁽⁵⁾ (lbs)	ER ⁽⁶⁾ (lbs)	K ⁽⁷⁾ (10 ⁶ lbs)
BSI-400	9 1/2"	204	3250	1200	2600	1120	4.94
	11 7/8"	346	4200	1460	2600	1225	6.18
	14"	505	5050	1715	2600	1250	7.28
	16"	694	5850	1990	2600	1235	8.32
BSI-700	11 7/8"	435	6825	1600	3000	1275	6.18
	14"	638	8135	1800	3000	1300	7.28
	16"	868	9320	2050	3000	1350	8.32
BSI-900	11 7/8"	663	10480	1950	3800	1500	6.18
	14"	968	12500	2240	3800	1500	7.28
	16"	1317	14325	2330	3950	1650	8.32

NOTES:

- The tabulated design values are for normal duration of load. All values except for EI and K are permitted to be adjusted for other load durations permitted by code.
- Allowable bending stiffness (EI) of the I-joist.
- Allowable moment capacity (M) of the I-joist; SHALL NOT be increased by any code allowed repetitive member use factor.
- Allowable shear capacity (V) of the I-joist.
- Allowable intermediate reaction (IR) of the I-joist with a minimum bearing length of 3 1/2" without web stiffeners.
- Allowable end reaction (ER) of the I-joist with a minimum bearing length of 1 3/4" without web stiffeners. Higher end reactions are permitted. For a bearing length of 4", the end reaction may be set equal to the allowable shear value. Linear Interpolation of the end reaction between 1 3/4" and 4" bearing is permitted. For end reaction values greater than 1550 lbs (1900 lbs for BSI-900), web stiffeners are required.
- Coefficient of shear deflection (K), used to calculate deflections for I-joist applications. Equations 1 and 2 below are provided for uniform load and center point load conditions for simple spans.

Uniform Load:

$$[1] \delta = \frac{5\omega\ell^4}{384EI} + \frac{\omega\ell^2}{K}$$

Center-Point Load:

$$[2] \delta = \frac{P\ell^3}{48EI} + \frac{2P\ell}{K}$$

where:

δ = calculated deflection (in.)

ω = uniform load (lbs/in.)

ℓ = design span (in.)

P = concentrated load (lbs)

EI = bending stiffness of the I-joist (in²-lbs)

K = coefficient of shear deflection (lbs)

Allowable Floor Spans:

Live Load = 40 psf, Dead Load = 10 psf

Broadspan™ Joist Series	Depth	Simple-Span				Multiple-Span			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
BSI-400	9.5"	18' - 3"	16' - 8"	15' - 9"	14' - 9"	19' - 11"	18' - 2"	17' - 2"	15' - 11"
	11.875"	21' - 9"	19' - 10"	18' - 9"	17' - 6"	23' - 8"	21' - 7"	20' - 3"	18' - 1"
	14"	24' - 8"	22' - 6"	21' - 3"	19' - 10"	26' - 10"	24' - 5"	22' - 3"	19' - 11"
	16"	27' - 4"	25' - 0"	23' - 7"	21' - 6"	29' - 10"	26' - 3"	24' - 0"	20' - 7"
BSI-700	11.875"	23' - 3"	21' - 3"	20' - 0"	18' - 8"	25' - 4"	23' - 1"	21' - 9"	20' - 4"
	14"	26' - 5"	24' - 1"	22' - 9"	21' - 2"	28' - 9"	26' - 3"	24' - 9"	23' - 0"
	16"	29' - 3"	26' - 8"	25' - 2"	23' - 5"	31' - 11"	29' - 1"	27' - 5"	23' - 9"
BSI-900	11.875"	26' - 4"	24' - 0"	22' - 7"	21' - 0"	28' - 8"	26' - 1"	24' - 6"	22' - 9"
	14"	29' - 11"	27' - 2"	25' - 7"	23' - 10"	32' - 7"	29' - 7"	27' - 10"	25' - 10"
	16"	33' - 1"	30' - 2"	28' - 4"	26' - 4"	36' - 1"	32' - 10"	30' - 10"	28' - 8"

Live Load = 40 psf, Dead Load = 20 psf

Broadspan Joist Series	Depth	Simple- Span				Multiple-Span			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
BSI-400	9.5"	18' - 3"	16' - 8"	15' - 9"	14' - 7"	19' - 11"	17' - 10"	16' - 3"	14' - 6"
	11.875"	21' - 9"	19' - 10"	18' - 7"	16' - 7"	23' - 5"	20' - 3"	18' - 6"	16' - 6"
	14"	24' - 8"	22' - 4"	20' - 4"	18' - 2"	25' - 9"	22' - 3"	20' - 4"	17' - 1"
	16"	27' - 4"	24' - 0"	21' - 11"	19' - 7"	27' - 9"	24' - 0"	21' - 5"	17' - 1"
BSI-700	11.875"	23' - 3"	21' - 3"	20' - 0"	18' - 8"	25' - 4"	23' - 1"	21' - 9"	19' - 9"
	14"	26' - 5"	24' - 1"	22' - 9"	21' - 2"	28' - 9"	26' - 3"	24' - 9"	19' - 9"
	16"	29' - 3"	26' - 8"	25' - 2"	22' - 4"	31' - 11"	29' - 1"	24' - 9"	19' - 9"
BSI-900	11.875"	26' - 4"	24' - 0"	22' - 7"	21' - 0"	28' - 8"	26' - 1"	24' - 6"	22' - 9"
	14"	29' - 11"	27' - 2"	25' - 7"	23' - 10"	32' - 7"	29' - 7"	27' - 10"	25' - 0"
	16"	33' - 1"	30' - 2"	28' - 4"	26' - 4"	36' - 1"	32' - 10"	30' - 10"	26' - 1"

NOTES:

(Clear Spans, L/480 Live Load, L/240 Total Load)

1. These spans are limited to L/480 live load deflection (for better performance) and L/240 total load deflection. The spans are based on uniform loads only, as noted for each table. Floor performance is greatly influenced by the stiffness of the floor joists. Experience has shown that joists designed to the code minimum (L/360) live load deflection will result in a floor which may not meet the expectations of some end users. Limiting the floor spans for Broadspan I-joists to those given above (with L/480 live load deflection) is recommended.
2. Maximum spans shown above are clear distances between supports, and are based on composite action with glue-nailed 23/32" nominal (48/24) APA Rated sheathing. Sheathing fastened with glue and nails or glue and screws is recommended over nailing only. Reduce spans by 12" for nailed sheathing only.
3. Minimum end bearing length is 1 3/4". Minimum intermediate bearing length is 3 1/2".
4. End spans of multiple-span joists must be at least 40% of the adjacent span.
5. For loading other than that shown above, refer to Uniform Load Tables or software.
6. Web stiffeners are not required to attain the tabulated spans for the given loading and conditions.

Terms and Conditions: The Broadspan™ I-Joists are accepted on condition that:

1. All uses, locations and installations comply with the applicable requirements of the New York City Building Code, and Technical Policy and Procedures #8, 1992 (August 19, 1992) and #2, 2000 (July 24, 2000).
2. Structures designed using Broadspan™ I-Joists shall conform to the manufacturer's design specifications except that appropriate design load(s), deflection limitation(s) and other performance standards of the New York City Building Code shall apply.
3. The glue (adhesive) used shall not delaminate during a fire.
4. Broadspan™ I-Joists shall be used indoors.
5. Broadspan™ I-Joists, when stored out-of-doors or exposed to wet weather conditions during construction, shall be inspected by the user for flange-web separation, swelling or warping etc., and replaced if damaged.
6. The size and location of any cutouts in the web of the I-joist shall not exceed the manufacturer's recommendations and shall be subject to controlled inspections.
7. Except for cutting to length and as indicated in the manufacturer's design specifications, top and bottom flanges shall not be cut, notched, drilled or bored.
8. Fire stopping shall be provided between the ceiling and the 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 the MEA stamp or label on each I-joist, 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 installation of Broadspan™ I-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, 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
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 may require the use of such material to be restricted or discontinued if necessary to secure safety.

Final Acceptance May 15, 2008.
Examined By 