

TJI® Joist Series, Custom Products

TJI®/35C Joist

Web Material: 7/16" Oriented Strand Board
Flange Material: Microllam™ LVL 1½" x 2¾"
Depths: 10", 11⅞" and 14" through 24" in 2" increments
Weight: 2.5 to 4.2 lbs./ft.
Profiles: Parallel

TJI®/55C Joist

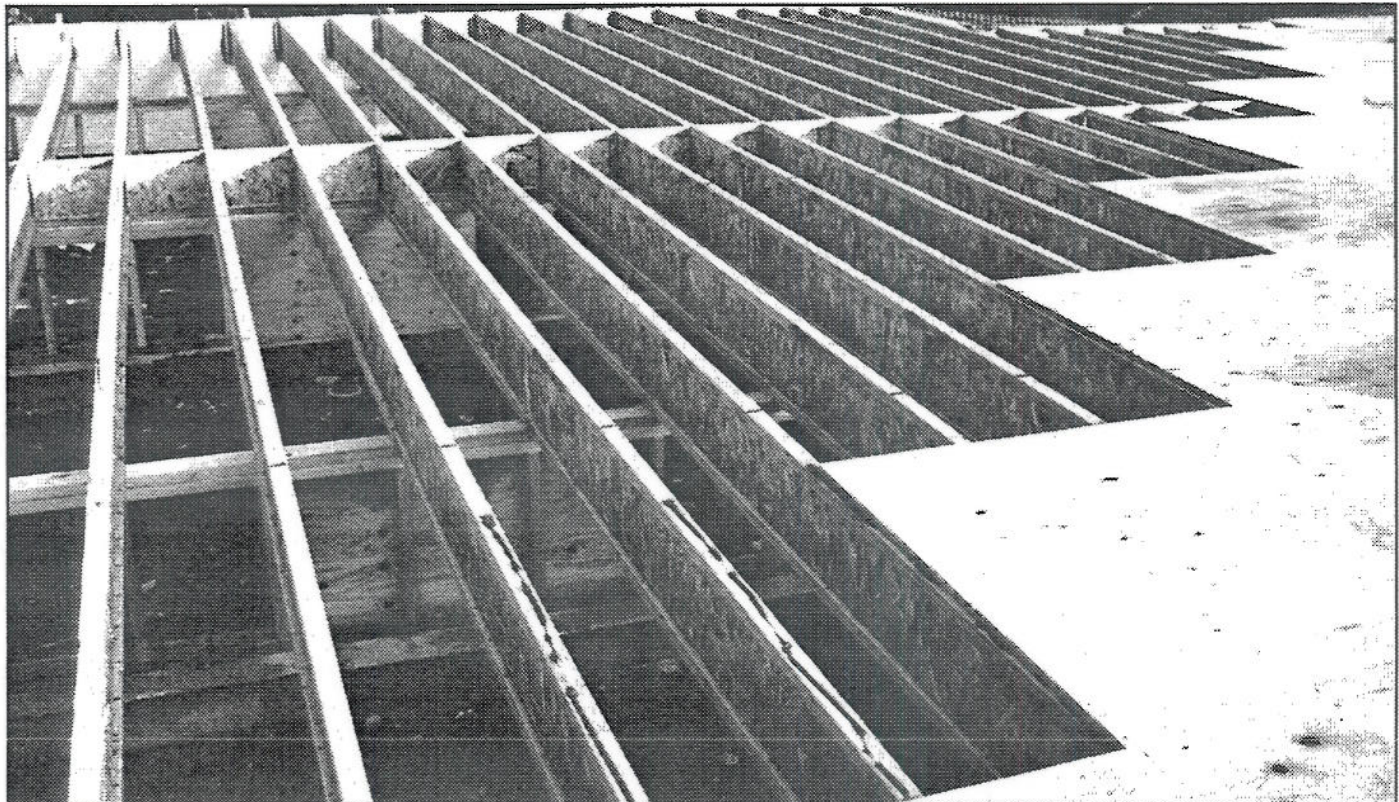
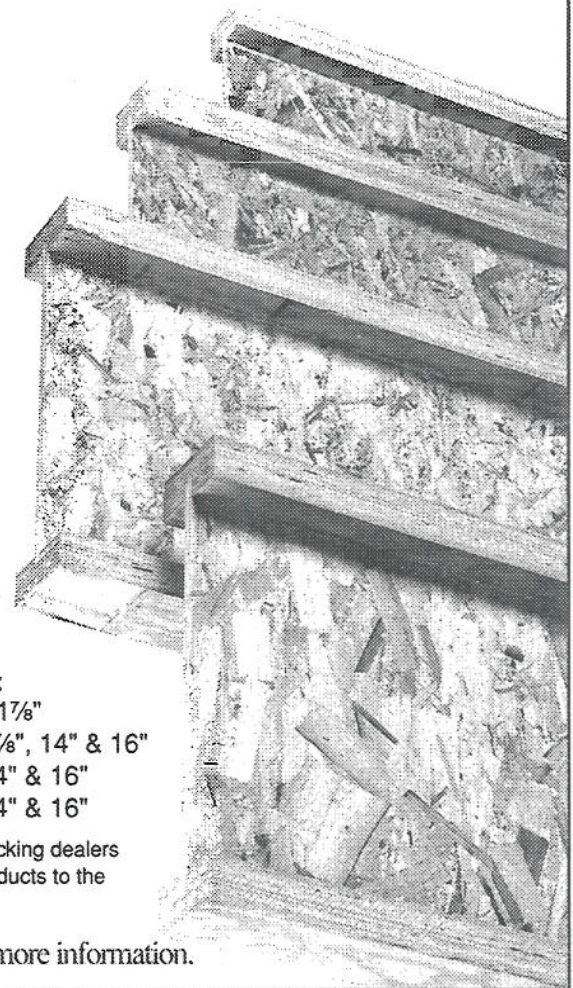
Web Material: 7/16" Oriented Strand Board
Flange Material: Microllam™ LVL 1½" x 3½"
Depths: 11⅞" and 14" through 24" in 2" increments
Weight: 3.6 to 5.0 lbs./ft.
Profiles: Parallel

TJI® Joist Series, Dealer Distributed Products*

	Performance Plus™	Microllam™ LVL	
	Web Material:	Flange Sizes:	Depths:
TJI®/15DF or SP Joist	3/8"	1½" x 1½"	9½" & 11⅞"
TJI®/25DF or SP Joist	3/8"	1½" x 1¾"	9½", 11⅞", 14" & 16"
TJI®/35DF or SP Joist	3/8"	1½" x 2¾"	11⅞", 14" & 16"
TJI®/55DF or SP Joist	7/16"	1½" x 3½"	11⅞", 14" & 16"

These products are intended for residential applications and are inventoried by our stocking dealers throughout the United States. Retail distribution means we can generally get these products to the end user more economically and with little or no production lead time required.

*See Our Specifier's Guides to the FrameWorks® Building System for more information.



TJI® Joist Section Properties/OSB Web Material

Joist Series	Depth (in.)	Maximum Resistive Moment (1)			Maximum Vertical Shear (2)			EI TJI Joist Only 10 ³ lbs. in. ²	EI (3) TJI Joist with Nailed Plywood Floor Sheathing 10 ³ lbs. in. ²	EI (3) TJI Joist with Glue-Nailed Plywood Floor Sheathing 10 ³ lbs. in. ²
		100%	115%	125%	100%	115%	125%			
		(Ft.-lbs.)	(Ft.-lbs.)	(Ft.-lbs.)	(lbs.)	(lbs.)	(lbs.)			
TJI 35C	10	4640	5335	5800	1720	1980	2150	276	313	345
TJI 35C	11 7/8	5765	6625	7205	1925	2215	2405	419	469	511
TJI 35C	14	7050	8105	8810	2125	2445	2655	622	688	743
TJI 35C	16	8265	9500	10330	2330	2680	2910	857	938	1003
TJI 35C	18	9160	10530	11450	2535	2915	3170	1137	1230	1306
TJI 35C	20	10340	11890	12925	2740	3150	3425	1464	1571	1656
TJI 35C	22	11495	13215	14365	2935	3375	3670	1841	1957	2052
TJI 35C	24	12165	13985	15205	3060	3520	3825	2270	2394	2493
TJI 55C	11 7/8	8925	10260	11155	1925	2215	2405	619	681	731
TJI 55C	14	10920	12555	13650	2125	2445	2655	912	996	1063
TJI 55C	16	12810	14730	16010	2330	2680	2910	1245	1348	1431
TJI 55C	18	14200	16330	17750	2535	2915	3170	1638	1762	1861
TJI 55C	20	16030	18430	20035	2740	3150	3425	2093	2236	2351
TJI 55C	22	17825	20495	22280	2935	3375	3670	2612	2774	2903
TJI 55C	24	18870	21700	23585	3060	3520	3825	3198	3376	3519

- (1) Maximum Resistive Moment values may be increased 4% for Repetitive Member Usage. See criteria below.
- (2) For possible increases in shear capability see below.
- (3) For deflection calculation only.

Shear Design

When joists are used as simple-span members, the design shear is equal to the end reaction.

When joists are used as multiple-span members and are either up through 16 inches deep — TJI 15SP, TJI 25SP and TJI 35SP joists — or 10 inches through 24 inches deep — TJI 35C and TJI 55C — the design shear is calculated by reducing the calculated shear at the face of the interior support by the lesser of 15 percent or the uniform load within a distance "d" (joist depth) from the face of the support. For other joist depths, the design shear is the calculated shear at the face of the support.

In residential floor construction for joists used as multiple-span members 12 inches or less in depth, the shear resistance may be increased by 10 percent.

Repetitive Member Design

Structural wood products used repetitively can be shown to share loads between adjacent members, increasing the total load carrying capacity of the system.

The criteria for increases in flexural stresses for repetitive member usage is as follows:

- 1) 3 or more members are adjacent.
- 2) Member spacing is 24" on-center or less.
- 3) The members are joined by transverse load-distributing elements (decking) adequate to support the design load.

Products with greater consistency, such as Microllam™ lumber, logically are given less credit for repetitive member increases; therefore, it has been determined that the increase in flexure shall be 7% for products utilizing machine stress rated grades of solid sawn lumber and 4% for products utilizing Microllam™ lumber.

Increases, where appropriate, are so indicated in the load tables.

TJI® Joist Allowable Uniform Load – Floor

Values shown are in pounds per lineal foot (PLF)

JOIST CLEAR SPAN (Ft.)	TJI®/15 SP				JOIST CLEAR SPAN (Ft.)
	9½" TJI®/15 SP		11½" TJI®/15 SP		
	LIVE LOAD L/480	TOTAL LOAD	LIVE LOAD L/480	TOTAL LOAD	
6		271		271	6
8		205		205	8
10	146	164		164	10
12	89	137		137	12
14	59	114	98	118	14
16	40	80	68	103	16
18	29	58	49	92	18
20	21	43	36	73	20
22	16	32	28	56	22

JOIST CLEAR SPAN (Ft.)	TJI®/25 SP								JOIST CLEAR SPAN (Ft.)
	9½" TJI®/25 SP		11½" TJI®/25 SP		14" TJI®/25 SP		16" TJI®/25 SP		
	LIVE LOAD L/480	TOTAL LOAD	LIVE LOAD L/480	TOTAL LOAD	LIVE LOAD L/480	TOTAL LOAD	LIVE LOAD L/480	TOTAL LOAD	
6		290		290		290		290	6
8		219		219		219		219	8
10	164	176		176		176		176	10
12	102	147		147		147		147	12
14	67	126	111	126		126		126	14
16	46	92	77	110		110		110	16
18	33	66	56	98	81	98		98	18
20	24	49	41	83	60	89	82	89	20
22	18	37	32	63	46	81	63	81	22
24	14	29	25	50	36	72	49	74	24
26	11	23	20	39	29	58	39	68	26
28			16	32	23	47	32	63	28
30			13	26	19	38	26	52	30

JOIST CLEAR SPAN (Ft.)	TJI®/35 SP						JOIST CLEAR SPAN (Ft.)
	11½" TJI®/35 SP		14" TJI®/35 SP		16" TJI®/35 SP		
	LIVE LOAD L/480	TOTAL LOAD	LIVE LOAD L/480	TOTAL LOAD	LIVE LOAD L/480	TOTAL LOAD	
6		333		333		333	6
8		251		251		251	8
10		201		201		201	10
12		168		168		168	12
14	137	144		144		144	14
16	96	127		127		127	16
18	70	113	100	113		113	18
20	52	101	75	101	101	101	20
22	40	80	58	92	78	92	22
24	31	62	45	85	61	85	24
26	25	50	36	72	49	78	26
28	20	40	29	59	40	73	28
30	17	33	24	48	33	65	30
32	14	27	20	40	27	54	32

JOIST CLEAR SPAN (Ft.)	TJI®/55 SP						JOIST CLEAR SPAN (Ft.)
	11½" TJI®/55 SP		14" TJI®/55 SP		16" TJI®/55 SP		
	LIVE LOAD L/480	TOTAL LOAD	LIVE LOAD L/480	TOTAL LOAD	LIVE LOAD L/480	TOTAL LOAD	
6		480*		480*		480*	6
8		362*		362*		362*	8
10		291*		291*		291*	10
12		243*		243*		243*	12
14	195*	209*		209*		209*	14
16	138	183*		183*		183*	16
18	101	163*	144*	163*		163*	18
20	76	147*	109	147*	144*	147*	20
22	59	117*	84	133*	112*	133*	22
24	46	92	66	122*	88	122*	24
26	36	73	53	106*	71	113*	26
28	30	59	43	86*	58	105*	28
30	24	49	35	71	47	95*	30
32	20	41	29	59	39	79*	32
34	17	34	25	50	33	67	34
36			21	42	28	56	36

GENERAL NOTES:

1. Load capacity assumes no composite action provided by sheathing.
2. These values reflect the most restrictive of simple span or multiple span applications.
3. Web stiffeners are required if the sides of the hanger do not laterally support the TJI® joist top flange. Web stiffeners are also required at all TJI®/55 SP joist hanger locations where joist reactions exceed 1200 pounds.

FLOOR JOIST SIZING:

4. To size a joist for use in a floor, it is necessary to check both live load and total load. When live load is not shown, total load will control.
5. Total Load column limits joist deflection to L/240. Live load column is based on joist deflection of L/480.
6. For live load deflection limits of L/360 (minimum code criteria), multiply value in live load column by 1.33. The resulting live load shall not exceed the total load shown.

* Joist reaction (simple span) exceeds 1200 lbs., web stiffeners are required at hanger locations. Web stiffeners may be required for other conditions, see note 3 below.

PSF TO PLF CONVERSION TABLE

Load in pounds per lineal foot (PLF)

O.C. SPACING	LOAD IN LBS. PER SQUARE FOOT (PSF)								
	20	25	30	35	40	45	50	55	60
12"	20	25	30	35	40	45	50	55	60
16"	27	34	40	47	54	60	67	74	80
19.2"	32	40	48	56	64	72	80	88	96
24"	40	50	60	70	80	90	100	110	120

TJI® Joist Allowable Uniform Load – Roof

Values shown are in pounds per lineal foot (PLF)

JOIST CLEAR SPAN ⁽⁶⁾ (Ft.)	TJI®/15 SP					
	9½" TJI®/15 SP			11½" TJI®/15 SP		
	TOTAL LOAD		DEFL.	TOTAL LOAD		DEFL.
	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240
6	311	338		311	338	
8	235	256		235	256	
10	188	205		188	205	
12	157	171		157	171	
14	131	142	117	135	147	
16	101	107	80	118	128	
18	77	77	58	105	115	98
20	57	57	43	86	93	73
22	43	43	32	71	74	56
24	33	33	25	57	57	43
26	26	26	20	46	46	35
28				37	37	28
30				30	30	23

JOIST CLEAR SPAN ⁽⁶⁾ (Ft.)	TJI®/25 SP															
	9½" TJI®/25 SP				11½" TJI®/25 SP				14" TJI®/25 SP				16" TJI®/25 SP			
	TOTAL LOAD		DEFL.	L/240	TOTAL LOAD		DEFL.	L/240	TOTAL LOAD		DEFL.	L/240	TOTAL LOAD		DEFL.	L/240
	Snow 115%	Non-Snow 125%	Snow 115%		Non-Snow 125%	Snow 115%	Non-Snow 125%		Snow 115%	Non-Snow 125%	Snow 115%		Non-Snow 125%			
6	333	362		333	362		333	362		333	362					
8	251	273		251	273		251	273		251	273					
10	202	220		202	220		202	220		202	220					
12	169	183		169	183		169	183		169	183					
14	144	157	134	144	157		144	157		144	157					
16	118	123	92	126	137		126	137		126	137					
18	88	88	66	112	122	111	112	122		112	122					
20	65	65	49	101	110	83	102	111		102	111					
22	49	49	37	83	84	63	93	101	92	93	101					
24	38	38	29	66	66	50	85	92	72	85	92					
26	30	30	23	52	52	39	73	77	58	78	85	79				
28				42	42	32	62	62	47	72	78	64				
30				34	34	26	51	51	38	65	69	52				
32				28	28	21	42	42	32	57	58	44				
34							35	35	26	48	48	36				

JOIST CLEAR SPAN ⁽⁶⁾ (Ft.)	TJI®/35 SP								
	11½" TJI®/35 SP			14" TJI®/35 SP			16" TJI®/35 SP		
	TOTAL LOAD		DEFL.	TOTAL LOAD		DEFL.	TOTAL LOAD		DEFL.
	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240
6	382	416		382	416		382	416	
8	288	313		288	313		288	313	
10	231	251		231	251		231	251	
12	193	210		193	210		193	210	
14	165	180		165	180		165	180	
16	146	158		146	158		146	158	
18	129	141	140	129	141		129	141	
20	116	126	104	116	126		116	126	
22	105	106	80	105	115		105	115	
24	83	83	62	97	106	91	97	106	
26	66	66	50	89	96	72	89	97	
28	53	53	40	78	78	59	83	91	80
30	44	44	33	64	64	48	78	85	65
32	36	36	27	53	53	40	72	72	54
34	30	30	23	45	45	34	61	61	46

JOIST CLEAR SPAN ⁽⁶⁾ (Ft.)	TJI®/55 SP											
	11½" TJI®/55 SP				14" TJI®/55 SP				16" TJI®/55 SP			
	TOTAL LOAD		DEFL.	L/240	TOTAL LOAD		DEFL.	L/240	TOTAL LOAD		DEFL.	L/240
	Snow 115%	Non-Snow 125%	Snow 115%		Non-Snow 125%	Snow 115%	Non-Snow 125%					
6	551*	600*		551*	600*		551*	600*				
8	416*	452*		416*	452*		416*	452*				
10	334*	363*		334*	363*		334*	363*				
12	279*	303*		279*	303*		279*	303*				
14	240*	261*		240*	261*		240*	261*				
16	210*	228*		210*	228*		210*	228*				
18	187*	203*	203*	187*	203*		187*	203*				
20	169*	183*	152*	169*	183*		169*	183*				
22	152*	156*	117*	152*	166*		152*	166*				
24	122*	122*	92	140*	152*	132*	140*	152*				
26	97*	97*	73	129*	141*	106*	129*	141*				
28	79	79	59	114*	114*	86*	120*	131*	116*			
30	65	65	49	94*	94*	71	112*	122*	95*			
32	54	54	41	78*	78*	59	105*	105*	79*			
34	45	45	34	66	66	50	89*	89*	67			
36	38	38	29	56	56	42	75*	75*	56			
38	33	33	25	48	48	36	64*	64*	48			
40	28	28	21	41	41	31	56	56	42			

* Joist reaction (simple span) exceeds 1200 lbs., web stiffeners are required at hanger locations. Web stiffeners may be required for other conditions, see note 3 below.

GENERAL NOTES:

1. Load capacity assumes no composite action provided by sheathing.
2. These values reflect the most restrictive of simple span or multiple span applications.
3. Web stiffeners are required if the sides of the hanger do not laterally support the TJI® joist top flange. Web stiffeners are also required at all sloped hanger locations, all birdsmouth cut locations, and for TJI®/55 SP joists at all hanger locations where joist reactions exceed 1200 pounds.

ROOF JOIST SIZING:

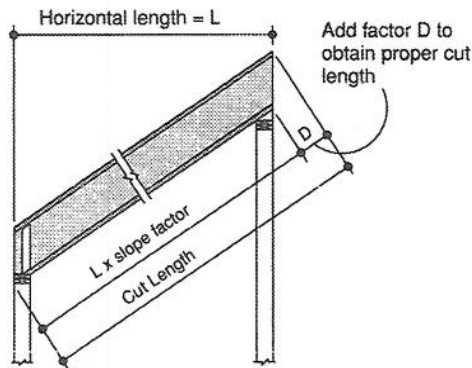
4. Roof surface must be sloped ¼" in 12" minimum to provide positive drainage.
5. Total Load column limits joist deflection to L/180. For stiffer deflection criteria, check the L/240 column. Some codes may require an L/240 live load deflection limit; check the L/240 column at live load. Check your local code for roof deflection criteria.
6. For roof slopes greater than 2"/12", consideration must be given to the increased dead load and deflection caused by actual sloped length. Approximate this effect by multiplying the horizontal clear span by the slope factor from the *SLOPE FACTOR TABLE* on page 18 to determine the *JOIST CLEAR SPAN*.

TJI® Joist Slope Factor Tables

SLOPE FACTOR TABLE

SLOPE	FACTOR
2½ in 12	1.022
3 in 12	1.031
3½ in 12	1.042
4 in 12	1.054
4½ in 12	1.068
5 in 12	1.083
6 in 12	1.118
7 in 12	1.158
8 in 12	1.202
9 in 12	1.250
10 in 12	1.302
11 in 12	1.357
12 in 12	1.414

TJI® JOIST CUT LENGTH CALCULATION

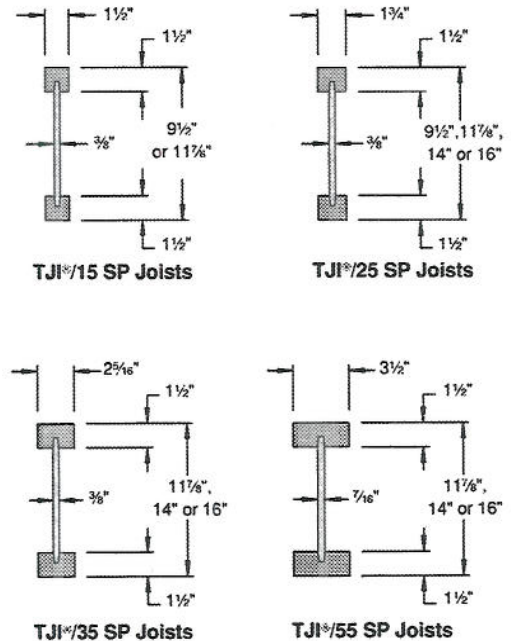


Actual cut length can be approximated by multiplying the horizontal length by the slope factor and adding the D factor.

SLOPE	D FACTOR			
	9½"	11⅞"	14"	16"
2½ in 12	2"	2½"	3"	3⅝"
3 in 12	2⅝"	3"	3½"	4"
3½ in 12	2⅞"	3⅜"	4⅞"	4¾"
4 in 12	3¼"	4"	4¾"	5⅝"
4½ in 12	3⅝"	4½"	5¼"	6"
5 in 12	4"	5"	5⅞"	6¾"
6 in 12	4¾"	6"	7"	8"
7 in 12	5⅝"	7"	8¼"	9⅝"
8 in 12	6⅝"	8"	9⅞"	10¾"
9 in 12	7⅞"	9"	10½"	12"
10 in 12	8"	10"	11¼"	13⅝"
11 in 12	8¾"	11"	12⅞"	14¾"
12 in 12	9½"	11⅞"	14"	16"

TJI® Joist Design Properties (100% Load Duration)

Joist Series	Joist Depth (Inches)	Joist Weight (Lbs./Ft.)	EI x 10 ⁶ (in ⁴ Lbs.)	Max. Vertical Shear (Lbs.)	Max. End Reaction (Lbs.)	Max. Intermediate Reaction (Lbs.)		Maximum Resistive Moment (Ft.-Lbs.)
						No Web Stiffeners	With Web Stiffeners	
TJI®/15 SP	9½"	2.1	164	1120	945	2085	N.A.	2860
	11⅞"	2.4	286	1420	945	2085	N.A.	3800
TJI®/25 SP	9½"	2.3	190	1120	1115	2230	N.A.	3370
	11⅞"	2.6	329	1420	1115	2230	2480	4480
	14"	2.8	490	1710	1115	2230	2480	5480
	16"	3.1	677	1970	1115	2230	2480	6425
TJI®/35 SP	11⅞"	3.1	423	1420	1275	2555	2910	5960
	14"	3.3	626	1710	1275	2555	2910	7300
TJI®/55 SP	11⅞"	3.6	859	1970	1275	2555	2910	8560
	14"	3.9	932	2125	1540	3690	4165	11195
	16"	4.1	1273	2330	1540	3690	4165	13135



GENERAL NOTES:

- Design reaction includes all loads on the joist. Design shear is computed at the face of supports including all loads on the span(s). Allowable shear may sometimes be increased at interior supports in accordance with NER-200 and these increases are reflected in span tables.
- The reaction values above are based on an assumed minimum bearing length of 1¼" at ends, 3½" at intermediate supports.

The following formula approximates the uniform load deflection of Δ (inches):

$$\Delta = \frac{22.5wL^4}{EI} + \frac{2.67wL^2}{d \times 10^5} \quad \text{For TJI®/15 SP, TJI®/25 SP and TJI®/35 SP Joists}$$

$$\Delta = \frac{22.5wL^4}{EI} + \frac{2.29wL^2}{d \times 10^5} \quad \text{For TJI®/55 SP Joists}$$

w = uniform load in pounds per lineal foot

L = clear span in feet

d = out to out depth of the joist in inches

EI = value from table

Material Weights

Include TJI® joist weights in dead load calculations – see chart above for joist weights.

Southern Pine Sheathing*

(Based on 40 pcf for plywood, 44 pcf for OSB)

½" plywood	1.7 psf
⅝" plywood	2.0 psf
¾" plywood	2.5 psf
1⅞" plywood	3.8 psf
½" OSB	1.8 psf
⅝" OSB	2.2 psf
¾" OSB	2.7 psf
1⅞" OSB	4.1 psf

Roofing Materials

Asphalt shingles	2.5 psf
Wood shingles	2.0 psf
Clay Tile	9.0 to 14.0 psf
Slate (¾" thick)	15 psf

Roll or Batt Insulation

Rock Wool	(1" thick) 0.2 psf
Glass Wool	(1" thick) 0.1 psf

Floors

Hardwood (Nominal 1")	4.0 psf
Concrete (1" thick)	
Regular	12.0 psf
Lightweight	8.0 to 10.0 psf
Sheet vinyl	0.5 psf
Carpet and Pad	1.0 psf
¾" ceramic or quarry tile	10.0 psf
Gypsum concrete (¾")	6.5 psf

Ceilings

Acoustical fiber tile	1.0 psf
½" gypsum board	2.2 psf
¾" gypsum board	2.8 psf
Plaster (1" thick)	8.0 psf

* For Douglas fir weights, decrease southern pine weights by 10%.

TJI® Joist Residential Floor Span Charts

40 PSF LIVE LOAD, 10 PSF DEAD LOAD (12 PSF DEAD LOAD AT TJI®/55 SP JOISTS)

(Example: Single layer glue-nailed wood sheathing and direct applied ceiling)

MINIMUM CRITERIA PER CODE

L/360 LIVE LOAD DEFLECTION

JOIST DEPTH	JOIST SERIES	O.C. SPACING			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
9½"	TJI®/15 SP	18'-10"	17'-3"	16'-3"	15'-2"
	TJI®/25 SP	19'-8"	18'-0"	17'-0"	15'-10"
11¾"	TJI®/15 SP	22'-5"	20'-6"	19'-4"	16'-6"
	TJI®/25 SP	23'-5"	21'-5"	20'-9"	18'-10" ⁽⁶⁾
	TJI®/35 SP	25'-4"	23'-1"	21'-9"	20'-3"
	TJI®/55 SP	28'-9"	26'-2"	25'-0"	22'-11" ⁽⁶⁾
14"	TJI®/25 SP	26'-7"	24'-11" ⁽⁶⁾	22'-11" ⁽⁶⁾	19'-8" ⁽⁶⁾
	TJI®/35 SP	28'-9"	26'-5"	24'-8"	23'-0" ⁽⁶⁾
	TJI®/55 SP	32'-8"	29'-8"	28'-0"	26'-0" ⁽⁵⁾
16"	TJI®/25 SP	29'-6"	26'-11" ⁽⁶⁾	24'-8" ⁽⁶⁾	19'-8" ⁽⁶⁾
	TJI®/35 SP	31'-10"	29'-0"	27'-4" ⁽⁶⁾	23'-2" ⁽⁶⁾
	TJI®/55 SP	36'-1"	32'-10"	30'-11" ⁽⁵⁾	28'-9" ⁽⁵⁾⁽⁶⁾

IMPROVED PERFORMANCE SYSTEM

L/480 LIVE LOAD DEFLECTION

JOIST DEPTH	JOIST SERIES	O.C. SPACING			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
9½"	TJI®/15 SP	17'-0"	15'-6"	14'-8"	13'-8"
	TJI®/25 SP	17'-9"	16'-3"	15'-4"	14'-3"
11¾"	TJI®/15 SP	20'-3"	18'-6"	17'-6"	16'-3"
	TJI®/25 SP	21'-2"	19'-4"	18'-3"	16'-11"
	TJI®/35 SP	22'-11"	20'-10"	19'-7"	18'-3"
	TJI®/55 SP	26'-0"	23'-8"	22'-3"	20'-8"
14"	TJI®/25 SP	24'-1"	21'-11"	20'-8"	19'-3" ⁽⁶⁾
	TJI®/35 SP	26'-0"	23'-8"	22'-3"	20'-8" ⁽⁶⁾
	TJI®/55 SP	29'-6"	26'-10"	25'-3"	23'-5" ⁽⁵⁾
16"	TJI®/25 SP	26'-8"	24'-4"	22'-11" ⁽⁶⁾	19'-8" ⁽⁶⁾
	TJI®/35 SP	28'-9"	26'-2"	24'-8"	22'-11" ⁽⁶⁾
	TJI®/55 SP	32'-8"	29'-8"	27'-11"	25'-11" ⁽⁵⁾

40 PSF LIVE LOAD, 20 PSF DEAD LOAD

(Example: Single layer glue-nailed wood sheathing with ¾" poured gypsum concrete and direct applied ceiling)

MINIMUM CRITERIA PER CODE

L/360 LIVE LOAD DEFLECTION

JOIST DEPTH	JOIST SERIES	O.C. SPACING			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
9½"	TJI®/15 SP	18'-10"	17'-1"	15'-7"	13'-9"
	TJI®/25 SP	19'-8"	18'-0"	16'-11"	14'-9" ⁽⁷⁾
11¾"	TJI®/15 SP	22'-5"	19'-9"	17'-3"	13'-9"
	TJI®/25 SP	23'-5"	21'-5"	19'-7" ⁽⁶⁾	16'-5" ⁽⁶⁾
	TJI®/35 SP	25'-4"	23'-1"	21'-9"	19'-3" ⁽⁶⁾
	TJI®/55 SP	28'-9"	26'-2"	25'-0"	22'-11"
14"	TJI®/25 SP	26'-7"	24'-11" ⁽⁶⁾	20'-6" ⁽⁶⁾	16'-5" ⁽⁶⁾
	TJI®/35 SP	28'-9"	26'-5"	24'-8"	19'-3" ⁽⁶⁾
	TJI®/55 SP	32'-8"	29'-8"	28'-0"	25'-5"
16"	TJI®/25 SP	29'-6"	26'-11" ⁽⁶⁾	20'-6" ⁽⁶⁾	16'-5" ⁽⁶⁾
	TJI®/35 SP	31'-10"	29'-0"	24'-1" ⁽⁶⁾	19'-3" ⁽⁶⁾
	TJI®/55 SP	36'-1"	32'-10" ⁽⁵⁾	30'-11" ⁽⁵⁾	25'-6" ⁽⁵⁾⁽⁶⁾

IMPROVED PERFORMANCE SYSTEM

L/480 LIVE LOAD DEFLECTION

JOIST DEPTH	JOIST SERIES	O.C. SPACING			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
9½"	TJI®/15 SP	17'-0"	15'-6"	14'-8"	13'-8"
	TJI®/25 SP	17'-9"	16'-3"	15'-4"	14'-3"
11¾"	TJI®/15 SP	20'-3"	18'-6"	17'-3"	13'-9"
	TJI®/25 SP	21'-2"	19'-4"	18'-3"	16'-5" ⁽⁶⁾
	TJI®/35 SP	22'-11"	20'-10"	19'-8"	18'-3" ⁽⁶⁾
	TJI®/55 SP	26'-0"	23'-8"	22'-3"	20'-8" ⁽⁶⁾
14"	TJI®/25 SP	24'-1"	21'-11"	20'-6" ⁽⁵⁾	16'-5" ⁽⁶⁾
	TJI®/35 SP	26'-0"	23'-8"	22'-3" ⁽⁶⁾	19'-3" ⁽⁶⁾
	TJI®/55 SP	29'-6"	26'-10"	25'-3" ⁽⁵⁾	23'-5" ⁽⁵⁾
16"	TJI®/25 SP	26'-8"	24'-4" ⁽⁶⁾	20'-6" ⁽⁶⁾	16'-5" ⁽⁶⁾
	TJI®/35 SP	28'-9"	26'-2" ⁽⁶⁾	24'-1" ⁽⁶⁾	19'-3" ⁽⁶⁾
	TJI®/55 SP	32'-8"	29'-8"	27'-11" ⁽⁵⁾	25'-6" ⁽⁵⁾⁽⁶⁾

Although the L/480 Live Load Deflection charts will usually provide better floor performance than the L/360 Live Load Deflection charts, the resulting performance still may not be adequate for your project. See page 3 for A WORD ABOUT FLOOR PERFORMANCE, or contact your Trus Joist MacMillan representative for assistance.

GENERAL NOTES:

- Span charts assume composite action with single layer of the appropriate span-rated, glue-nailed wood sheathing for deflection only. Spans shall be reduced 5" where sheathing panels are nailed only.
- Spans shown are clear distances between supports and reflect the most restrictive of simple or multiple span applications, based on uniformly loaded joists and include allowable increases for repetitive member use.
- For loading conditions not shown, refer to allowable uniform load tables on page 16.

WEB STIFFENER REQUIREMENTS

End Bearings: Web stiffeners (see detail K on page 7) are not required at end bearings of TJI® floor joists listed in this guide except in hangers when the following conditions exist:

- All Joists: Web stiffeners are required in hangers when the sides of the hanger do not laterally support the TJI® joist top flange. (See detail H1 on page 7.)
- TJI®/55 SP Joists Only: Web stiffeners are required in hangers when the TJI®/55 SP joist span is greater than the spans shown in the following chart:

JOIST SERIES	40 PSF LIVE LOAD, 12 PSF DEAD LOAD				40 PSF LIVE LOAD, 20 PSF DEAD LOAD			
	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.
TJI®/55 SP	Not Required	Not Required	28'-8"	22'-11"	Not Required	29'-10"	24'-10"	19'-10"

- Intermediate Bearings:** At intermediate supports where the joists are continuous span, web stiffeners are required only if the intermediate bearing width is less than 5½" and the span on either side of the intermediate bearing is greater than the spans shown in the following chart:

JOIST SERIES	40 PSF LIVE LOAD, 10 PSF DEAD LOAD*				40 PSF LIVE LOAD, 20 PSF DEAD LOAD			
	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.
TJI®/15 SP	WEB STIFFENERS NOT REQUIRED				WEB STIFFENERS NOT REQUIRED			
TJI®/25 SP	Not Required	26'-7"	22'-2"	17'-8"	Not Required	22'-2"	18'-5"	14'-9"
TJI®/35 SP	Not Required	Not Required	25'-5"	20'-4"	Not Required	25'-5"	21'-2"	16'-11"
TJI®/55 SP	Not Required	Not Required	Not Required	28'-3"	Not Required	Not Required	30'-7"	24'-5"

*12 PSF Dead Load at TJI®/55 SP joists.

- When using IUT9 hangers with this load/spacing condition the maximum joist span is 14'-3".
- Long term deflection under dead load which includes the effect of creep, common to all wood members, has not been considered for any of the above applications. Shaded spans reflect initial dead load deflection exceeding 0.33", which may be unacceptable. For additional information contact your Trus Joist MacMillan representative for additional assistance.

9 1/4" TJI®/25 SP Silent Floor® Joists

Part of the FrameWorks® building system

A QUALITY REPLACEMENT FOR 2x10 JOISTS

The 9 1/4" TJI®/25 SP joist is intended to become the replacement of solid-sawn 2x10 joists, with its size specifically selected to facilitate this conversion process. The 9 1/4" TJI®/25 SP joist offers the same benefits as our other Silent Floor® joists: strong; lightweight; dimensionally stable; consistent quality; long lengths for continuous joist spans...and of course our Silent Floor® quality guarantee.

Floor performance is a very subjective issue that is influenced by many factors. Listed below are several suggestions that will assist you in your selection process.

- Thicker floor sheathing will improve load sharing and floor performance.
- Adhesives that permanently bond the sheathing to the joists will improve the stiffness of the floor system, and will also prevent squeaks.
- Directly applied ceilings, bridging, bottom chord stripping, or full depth blocking will improve floor performance
- Framed partition walls, ceilings, and other inherent random dead loads will dampen vibrations.
- Deeper joists will reduce deflection; consult the Specifier's Guide - for other Trus Joist MacMillan product lines/depths
- Workmanship in the field is critical. Proper on-site storage of construction materials, full joist bearing, adequate and level supports, proper installation of the floor sheathing, and care in the fastening (nailing, adhesives, etc.) are most essential.

WE'VE DONE SOMETHING DIFFERENT

You'll notice that 12" and 24" on-center spacing isn't included in our span recommendations. That's because we believe that our best floor performance is at 16" and 19.2" on-center, at the prescribed spans listed. These recommendations are based on our experience and do not necessarily coincide with any particular deflection ratio.

MAXIMUM RECOMMENDED FLOOR SPANS 40 PSF Live Load, 10 PSF Dead Load

16" ON-CENTER SPACING - 15'-0"
19.2" ON-CENTER SPACING - 14'-0"

Spans shown are clear distances between supports for simple or multiple-span applications and are based on the use of a single layer of the appropriate span-rated, glue-nailed wood sheathing.

ALLOWABLE UNIFORM LOAD

JOIST CLEAR SPAN ⁽¹⁾ (Ft.)	9 1/4" TJI®/25 SP				
	FLOOR		ROOF		
	LIVE LOAD L/480	TOTAL LOAD	SNOW 115%	NON-SNOW 125%	L/240
6		290	333	362	
8		219	251	273	
10	155	176	202	220	
12	96	147	169	183	
14	63	125	144	157	125
16	43	86	114	115	86
18	31	62	83	83	62
20	23	46	61	61	46

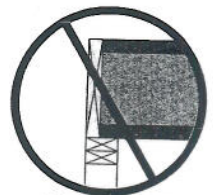
FLOOR JOIST SIZING:

1. To size a joist for use in a floor, it is necessary to check both live load and total load. When live load is not shown, total load will control.
2. Total load column limits joist deflection to L/240. Live load column is based on joist deflection of L/480.

ROOF JOIST SIZING:

3. Roof surface must be sloped 1/4" in 12" minimum to provide positive drainage.
4. Total Load column limits joist deflection to L/180. For stiffer deflection criteria, check the L/240 column.
5. For roof slopes greater than 2"/12", consideration must be given to the increased dead load and deflection caused by actual sloped length. Approximate this effect by multiplying the horizontal clear span by the slope factor from the "Slope Factor Table" in the Specifier's Guide to determine the *JOIST CLEAR SPAN*.

- Load capacity assumes no composite action provided by sheathing.
- These values reflect the most restrictive of simple or multiple span applications.
- Web stiffeners are required if the sides of the hanger do not laterally support the TJI® joist top flange. Web stiffeners are also required at all sloped hanger and birdsmouth cut locations.



FRAMING CONNECTORS

FACE MOUNT SINGLE JOIST HANGER

JOIST	HANGER	
	Simpson	KANT-SAG®
9 1/4" TJI®/25 SP	IUT9	THF17925

FACE MOUNT SKEWED 45° JOIST HANGER

JOIST	HANGER	
	Simpson	KANT-SAG®
9 1/4" TJI®/25 SP	SURI9" or SULI9"	SKH1720*

*Requires use of web stiffeners.

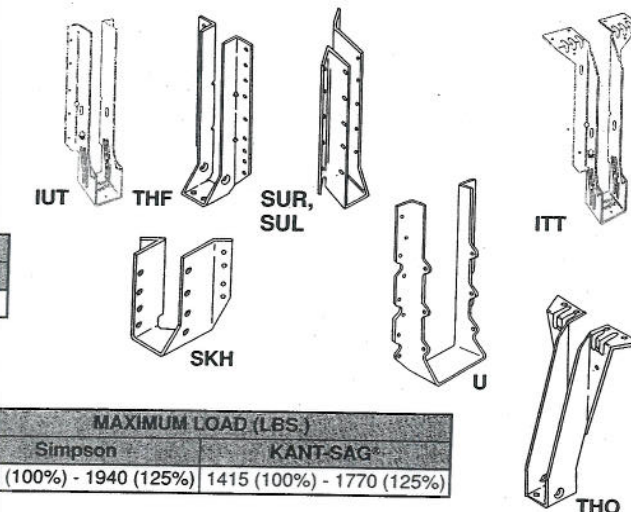
FACE MOUNT DOUBLE JOIST HANGER

JOIST	HANGER		MAXIMUM LOAD (LBS.)	
	Simpson	KANT-SAG®	Simpson	KANT-SAG®
9 1/4" TJI®/25 SP	U410*	THF17925-2*	1555 (100%) - 1940 (125%)	1415 (100%) - 1770 (125%)

*Requires use of web stiffeners.

TOP MOUNT SINGLE JOIST HANGER

JOIST	HANGER	
	Simpson	KANT-SAG®
9 1/4" TJI®/25 SP	ITT9.25	THO17925



TOP MOUNT DOUBLE JOIST HANGER

JOIST	HANGER		MAXIMUM LOAD (LBS.)	
	Simpson	KANT-SAG®	Simpson	KANT-SAG®
9 1/4" TJI®/25 SP	ITT49.25	THO17925-2	1615 (100%) - 1615 (125%)	1580 (100%) - 1980 (125%)

GENERAL NOTES:

Some hangers shown have less capacity than the capacity of the TJI® joists. For single joist applications beyond those shown in the span charts and for double joist applications, these hangers will need to be checked to assure adequate capacity.

- Hanger capacities will need to be checked if hanger is supported from other than Trus Joist MacMillan products or Douglas fir-larch or southern pine species support members. Contact your Trus Joist MacMillan representative for assistance.
- Hangers can only achieve their maximum capacity if all nail holes are filled with the proper nails.
- In some cases, these hangers have greater capacity when used in conjunction with certain supporting member categories or support member criteria.
- Leave 1/16" clearance between end of TJI® joist and support member.
- The connectors listed are manufactured by Simpson Strong-Tie® Company, Inc. or United Steel Products Company (KANT-SAG®). For other connectors or additional information, please refer to the appropriate evaluation report.

HOLE CHARTS

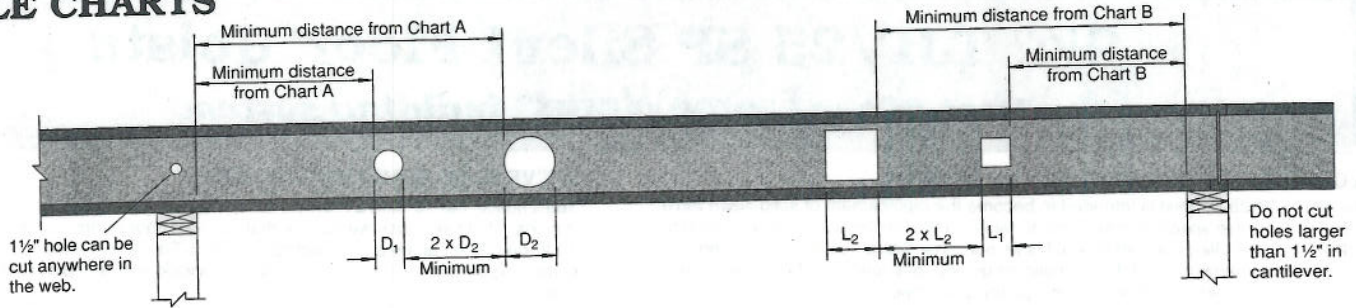


CHART A – ROUND HOLES

MINIMUM DISTANCE FROM INSIDE FACE OF ANY SUPPORT TO NEAREST EDGE OF HOLE

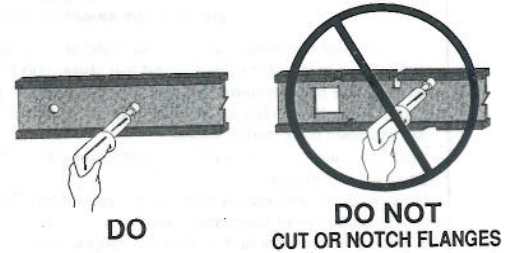
JOIST	ROUND HOLE SIZE				
	2"	3"	4"	5"	6"
9 1/4" TJI®/25 SP	1'-6"	2'-6"	4'-0"	6'-0"	7'-6"

CHART B – SQUARE OR RECTANGULAR HOLES

MINIMUM DISTANCE FROM INSIDE FACE OF ANY SUPPORT TO NEAREST EDGE OF HOLE

JOIST	SQUARE OR RECTANGULAR HOLE SIZE*				
	2"	3"	4"	5"	6"
9 1/4" TJI®/25 SP	1'-6"	2'-6"	4'-6"	6'-6"	-

*Rectangular holes based on measurement of longest side.



GENERAL NOTES:

- If more than one hole is to be cut in the web, the length of the uncut web between holes must be twice the length of the longest dimension of the largest adjacent hole. Holes may be located vertically anywhere within the web.
- TJI® joists are manufactured with 1 1/2" perforated "knockouts" in the web at approximately 12" on-center along the length of the joist.
- The distances in the hole charts are based on uniformly loaded joists using maximum loads shown for any of the charts listed within this guide. For other load conditions or hole configurations not included in these charts, contact your Trus Joist MacMillan representative.
- Full web depth rectangular holes are also possible. Contact your Trus Joist MacMillan representative for assistance.

DESIGN PROPERTIES (100% LOAD DURATION)

Joist	Joist Weight (Lbs./Ft.)	Joist Only EI x 10 ⁶ (In ² Lbs.)	Maximum Vertical Shear (Lbs.)	Maximum End Reaction (Lbs.)	Maximum Intermediate Reaction (Lbs.)		Maximum Resistive Moment (Ft.-Lbs.)
					No Web Stiffeners	With Web Stiffeners	
9 1/4" TJI®/25 SP	2.3	178	1090	1090	2230	N.A.	3250

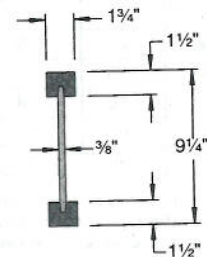
GENERAL NOTES:

- Design reaction includes all loads on the joist. Design shear is computed at the face of supports including all loads on the span(s). Allowable shear may sometimes be increased at interior supports in accordance with NER-200 and these increases are reflected in the span charts.
- The reaction values above are based on an assumed minimum bearing length of 1 3/4" at ends, 3 1/2" at intermediate supports.
- The following formula approximates the uniform load deflection of Δ (inches):

$$\Delta = \frac{22.5 wL^4}{EI} + \frac{2.67 wL^2}{d \times 10^6}$$

w = uniform load in pounds per lineal foot
d = out to out depth of the joist in inches
L = clear span in feet
EI = value from table

PRODUCT DESCRIPTION



TJI®/25 SP Joist
Top and bottom flanges of 1 3/4" x 1 1/2" Microllam™ LVL with 3/8" Performance Plus™ Web.

CODE EVALUATION: NER-200

For information on items listed below, please refer to the *Builder's Guide and/or Specifier's Guide for eastern species Silent Floor® Joists.*

Details and Nailed Connections:
Same as for 9 1/2" TJI®/25 SP joists.

Web Stiffeners:

Use 3/8"x2 3/16" (minimum) each side. Web stiffeners will not increase intermediate or end reactions. Web stiffeners are only required when face mount hangers do not extend to the top flange and at sloped hanger and birdsmouth cut roof details. Attach web stiffeners with 3-8d box nails clinched. Web stiffener material shall be sheathing meeting the requirements of PS 1 or PRP-108 with the face grain parallel to the length of the web stiffener.

Filler Blocks:

2x6 x 1'-6" long. Attachment same as for 9 1/2" TJI®/25 SP

Cantilever Fillers:

2x6 x 4'-0" long. Attach to joist web with 2 rows 10d nails at 6" o.c. clinched.

Backer Blocks:

3/8" or 1/4" x 1'-6" long. Attachment same as for 9 1/2" TJI®/25 SP joists.



1101 Woodridge Center Drive, Suite 114
Charlotte, NC 28216
(704) 357-3291

Call for the dealer nearest you:
1-800-242-4854

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