

# I-JOIST INSTALLATION INFORMATION

## ATTENTION BUILDER

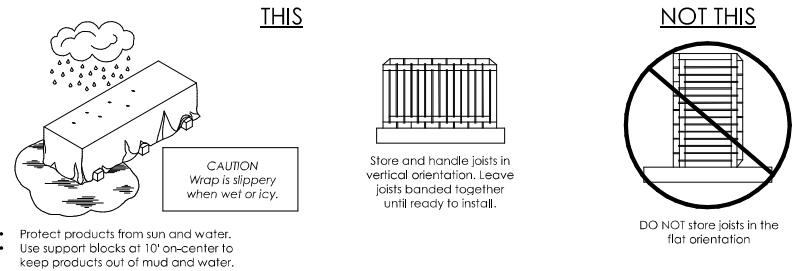
Enclosed is **IMPORTANT** information on how to safely and properly install RedBuilt™ Joists. Personal injury or death may result from failure to read and follow this information.



## 1 PRODUCT HANDLING



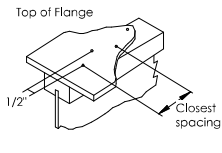
## 2 PRODUCT STORAGE



**WARNING**  
Workers should stay clear when cutting the banding to avoid possible injury from flying banding or topping joists.

## 3 FLANGE AND BEAM NAILING

Nailing pattern to be per contract drawings and specification. In addition, nail spacing shall comply with the criteria listed.



**Joist attachment:** For 1 3/8" thick flanges, attach with a minimum of one 8d x 2 1/2" box nail, each side of RedBuilt™ joist at bearing. Use 10d x 3" box nails with 1 1/2" thick flanges. 12d x 1 1/4" box nails with 1 3/4" thick flanges and 16d x 1 1/2" box nails with 2 1/2" thick flanges. Maintain 1 1/2" minimum end distance to minimize splitting.

**IMPORTANT**  
Nailing closer than specified may cause the flange to split.

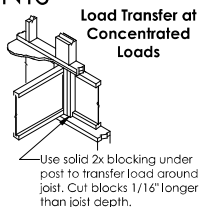
Nail Size	Nailing of sheathing Closest On-Center Spacing Per Row <sup>(1)</sup>		
	1 1/2" Thick I-Joist Flange <sup>(2)</sup>	1 3/8" Thick I-Joist Flange <sup>(2)(3)</sup>	RedLam™ LVL Narrow Face
.113"x2 1/2"	2"	4"	3"
.131"x2 1/2"	2"	4"	3"
.128"x3"	2"	4"	3"
.148"x3"	2"	4"	4" <sup>(4)</sup>
.128"x3 1/4"	2"	4"	3"
.148"x3 1/4"	3"	4"	4" <sup>(4)</sup>
.135"x3 1/2"	3"	4"	4"
.148"x3 1/4"	3"	4"	4" <sup>(4)</sup>
.162"x3 1/2"	4"	6"	8" <sup>(5)</sup>

- If more than one row of nails is used, offset rows at least 1/2" and stagger. Maintain 3/8" minimum edge distance.
- Sheathing must be nailed to the full length of the top (or compression) flange on the I-joist with the maximum nail spacing as follows:
  - 18" OC for I-joists with flange widths less than 2".
  - 24" OC for I-joists with flange widths greater than 2".
- 14-gauge staples may be a direct substitute for 8d x 2 1/2" nails if a minimum penetration of 1" into the flange is maintained.
- Minimum spacing must be 5" for 4 rows of nails.
- Spacing may be reduced to 5" where nail penetration does not exceed 1 3/8".
- For diaphragm nailing criteria see section 4.2.7 AWC SDPWS.

## 4 WEB STIFFENER REQUIREMENTS

### Minimum Web Stiffener Size and Material

Flange Width	Web Stiffener Size	Web Stiffener Material
1 3/4"	5/8"x2 5/16"	Sheathing (with face grain vertical) that meets the requirements of PS1 or PS2
2 1/4"	3/4"x2 5/16"	
2 3/4", 2 1/2"	7/8"x2 5/16"	
3 1/2"	2x4	Construction grade or better Red-190HS™ Joists require LVL/LSL

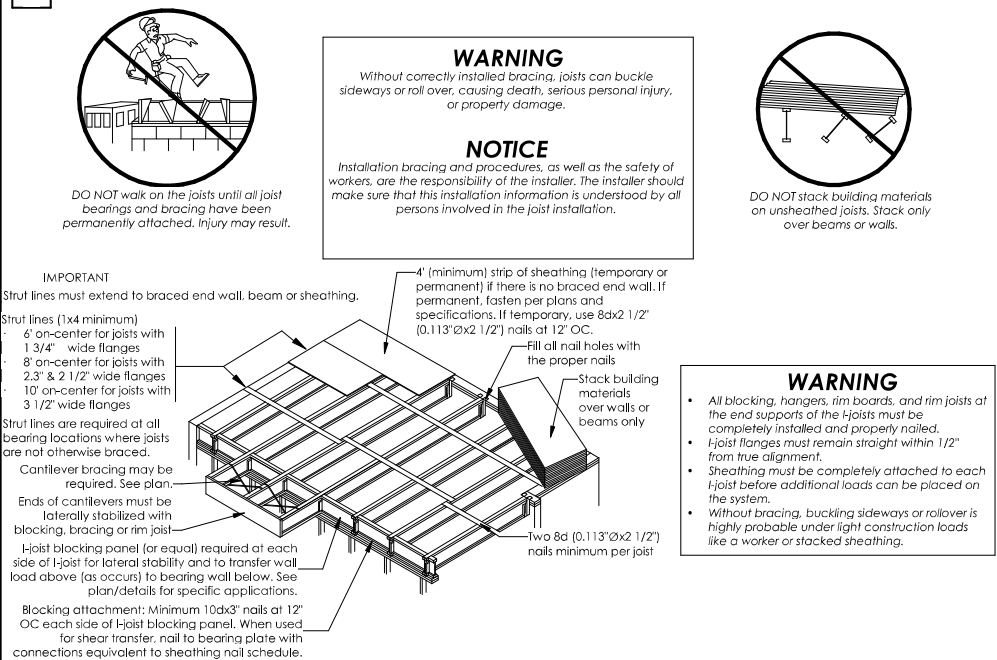


### Nailing Quantities for Web Stiffener Attachment

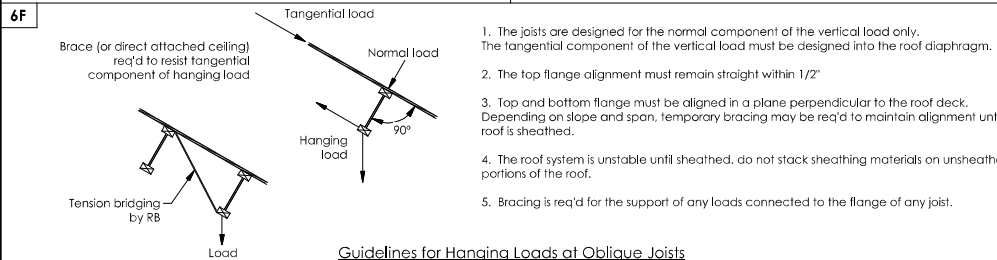
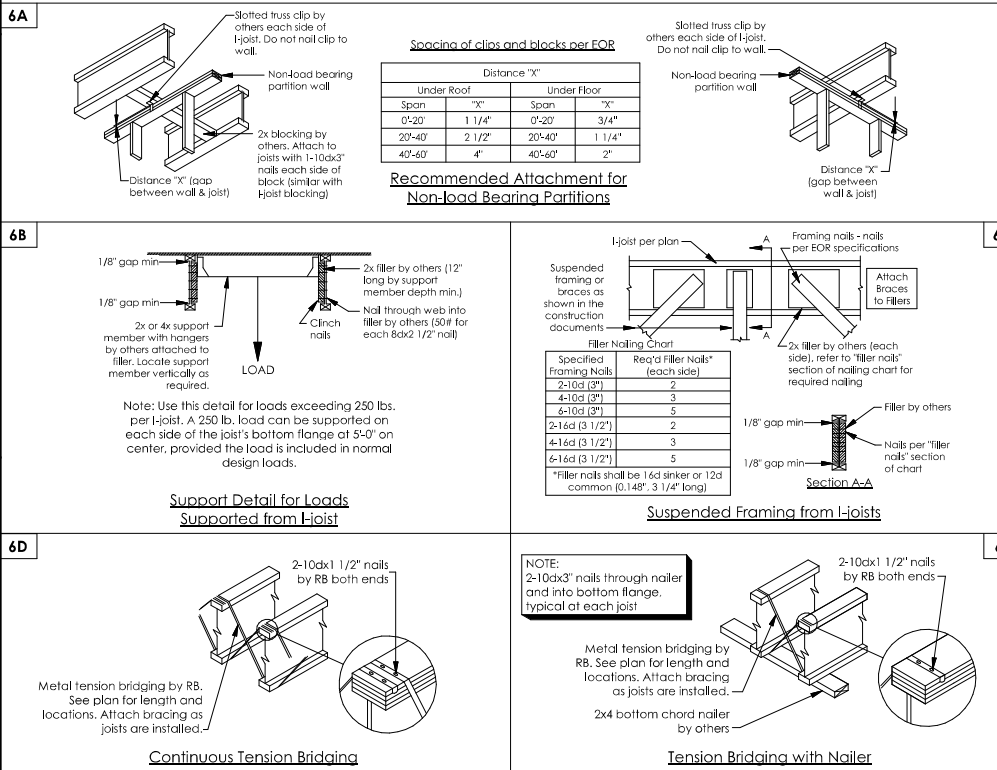
RedBuilt™ Joist Depth	Red-445L™ Red-445M™	Red-445L™ Red-445M™ Red-445S™ Red-445M™	Red-445L™ Red-445M™ Red-445S™ Red-445M™	Red-445L™ Red-445M™ Red-445S™ Red-445M™	Red-445L™ Red-445M™ Red-445S™ Red-445M™
	1/4" grade x 1 1/2" with 7/16" crown	0.113"x2 1/2" Nails <sup>(1)</sup>	0.135"x3 1/2" Nails <sup>(2)</sup>	0.135"x3 1/2" Nails <sup>(2)</sup>	0.135"x3 1/2" Nails <sup>(2)</sup>
9 1/2"	4	3	N/A	N/A	N/A
11 7/8"	4	3	3	3	5
14"	7	3	5	4	7
16"	8	3	6	5	7
18"	9	3	7	5	9
20"	11	3	8	6	11
22"	N/A	N/A	9	7	12
24"	N/A	N/A	10	7	14
26"	N/A	N/A	11	8	15
28"	N/A	N/A	12	9	16
30"	N/A	N/A	13	9	18
32"	N/A	N/A	N/A	N/A	19

- (1) 0.113x2 1/4" smooth or deformed-shank nails are acceptable  
(2) 0.131x3 1/4" smooth or deformed-shank nails are acceptable

## 5 INSTALLATION BRACING



## 6 STANDARD INSTALLATION DETAILS



## 7 ALLOWABLE HOLES

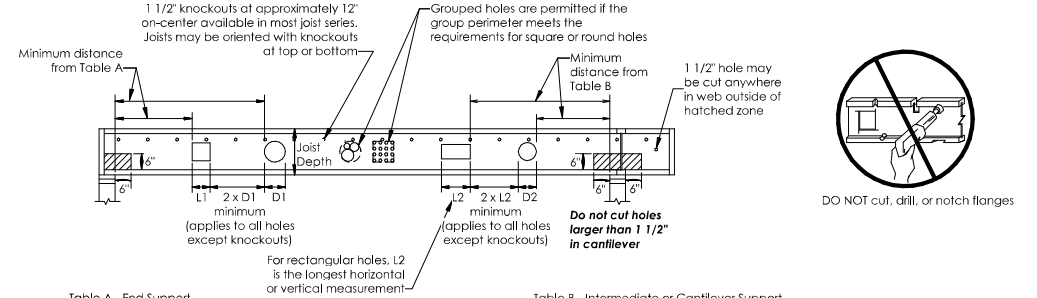


Table A - End Support

Joist Depth	Joist Series	Round Hole Size												
		Square or Rectangular Hole Size												
		1.25"	2.5"	4"	5"	6"	7"	8.5"	9.5"	10.5"	13"	14"	16"	18"
9 1/2"	145L / 145	1'-0"	1'-0"	2'-6"	4'-0"	-	-	-	-	-	-	-	-	-
	158 / 165	1'-6"	3'-0"	5'-0"	-	-	-	-	-	-	-	-	-	-
	190	2'-0"	3'-6"	5'-6"	-	-	-	-	-	-	-	-	-	-
11 7/8"	145L / 145	1'-0"	2'-0"	3'-6"	5'-0"	-	-	-	-	-	-	-	-	-
	158 / 165	1'-6"	3'-0"	4'-6"	6'-6"	-	-	-	-	-	-	-	-	-
	190 / 190H	1'-6"	3'-6"	5'-6"	7'-0"	-	-	-	-	-	-	-	-	-
14"	145L / 145	1'-0"	2'-0"	3'-0"	4'-0"	6'-0"	-	-	-	-	-	-	-	-
	158 / 165	1'-0"	2'-6"	4'-0"	5'-6"	8'-0"	-	-	-	-	-	-	-	-
	190 / 190H	1'-0"	3'-0"	5'-0"	6'-6"	9'-0"	-	-	-	-	-	-	-	-
16"	145L / 145	1'-0"	1'-6"	3'-0"	4'-6"	6'-6"	8'-0"	-	-	-	-	-	-	-
	158	1'-0"	1'-6"	3'-0"	4'-6"	6'-6"	8'-0"	10'-0"	-	-	-	-	-	-
	190 / 190H	1'-0"	2'-0"	4'-0"	6'-0"	8'-6"	10'-6"	-	-	-	-	-	-	-
18"	145 / 165	1'-0"	1'-0"	2'-6"	5'-0"	6'-6"	8'-0"	9'-0"	-	-	-	-	-	-
	190 / 190H	1'-0"	1'-0"	2'-6"	5'-0"	7'-0"	9'-6"	12'-6"	-	-	-	-	-	-
	190HS	2'-0"	4'-0"	6'-0"	8'-0"	10'-0"	12'-0"	-	-	-	-	-	-	-
20"	145 / 165	1'-0"	1'-0"	2'-0"	3'-6"	4'-6"	5'-0"	7'-0"	10'-6"	-	-	-	-	-
	190 / 190H	1'-0"	1'-0"	2'-0"	4'-0"	6'-0"	8'-0"	11'-0"	14'-0"	-	-	-	-	-
	190HS	2'-0"	4'-0"	6'-0"	8'-0"	10'-6"	11'-6"	14'-0"	-	-	-	-	-	-
22"	165	1'-0"	1'-0"	1'-6"	2'-6"	3'-6"	4'-6"	5'-6"	7'-6"	11'-6"	-	-	-	-
	190 / 190H	1'-0"	1'-0"	1'-0"	3'-0"	5'-0"	7'-0"	9'-0"	12'-6"	16'-0"	-	-	-	-
	190HS	2'-0"	4'-0"	6'-0"	8'-0"	10'-6"	11'-6"	13'-6"	16'-0"	-	-	-	-	-
24" to 26"	165	1'-0"	1'-6"	2'-6"	3'-6"	4'-6"	5'-0"	6'-0"	7'-6"	10'-0"	-	-	-	-
	190 / 190H	1'-0"	1'-0"	2'-0"	3'-6"	5'-0"	6'-6"	8'-0"	10'-6"	14'-6"	-	-	-	-
	190HS	2'-0"	4'-0"	6'-0"	7'-6"	9'-6"	11'-6"	13'-6"	15'-0"	18'-0"	-	-	-	-
28" to 32"	165	1'-0"	2'-0"	2'-6"	3'-6"	4'-6"	5'-0"	6'-0"	7'-0"	8'-0"	10'-6"	-	-	-
	190 / 190H	1'-0"	1'-6"	2'-6"	4'-0"	5'-6"	6'-6"	8'-0"	9'-6"	11'-6"	14'-6"	-	-	-
	190HS	2'-0"	3'-6"	5'-0"	7'-0"	8'-6"	10'-0"	12'-0"	13'-6"	16'-0"	18'-6"	-	-	-

Table B - Intermediate or Cantilever Support

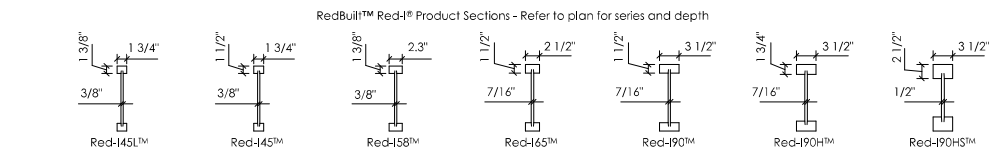
Joist Depth	Joist Series	Round Hole Size												
		Square or Rectangular Hole Size												
		1.25"	2.5"	4"	5"	6"	7"	8.5"	9.5"	10.5"	13"	14"	16"	18"
9 1/2"	145L / 145	1'-0"	2'-6"	5'-0"	-	-	-	-	-	-	-	-	-	-
	158 / 165	1'-6"	4'-0"	6'-6"	-	-	-	-	-	-	-	-	-	-
	190	3'-0"	5'-6"	8'-0"	-	-	-	-	-	-	-	-	-	-
11 7/8"	145L / 145	1'-0"	2'-0"	4'-0"	6'-6"	-	-	-	-	-	-	-	-	-
	158 / 165	1'-0"	3'-0"	5'-6"	8'-6"	-	-	-	-	-	-	-	-	-
	190 / 190H	2'-0"	4'-6"	7'-6"	10'-0"	-	-	-	-	-	-	-	-	-
14"	145L / 145	1'-0"	1'-0"	3'-0"	5'-0"	7'-0"	-	-	-	-	-	-	-	-
	158 / 165	1'-0"	1'-6"	4'-0"	7'-0"	10'-6"	-	-	-	-	-	-	-	-
	190 / 190H	1'-0"	3'-6"	6'-0"	9'-0"	12'-6"	-	-	-	-	-	-	-	-
16"	145L / 145	1'-0"	1'-0"	2'-0"	4'-0"	6'-6"	10'-0"	-	-	-	-	-	-	-
	158	1'-0"	1'-0"	2'-0"	4'-0"	6'-6"	10'-0"	-	-	-	-	-	-	-
	190 / 190H	1'-0"	1'-6"	4'-6"	8'-0"	11'-0"	14'-6"	-	-	-	-	-	-	-
18"	145 / 165	1'-0"	1'-0"	2'-6"	5'-0"	6'-6"	8'-0"	9'-0"	12'-0"	-	-	-	-	-
	190 / 190H	1'-0"	1'-0"	2'-6"	5'-6"	9'-0"	12'-6"	17'-0"	-	-	-	-	-	-
	190HS	2'-0"	4'-0"	6'-0"	8'-0"	11'-0"	13'-6"	16'-6"	-	-	-	-	-	-
20"	145 / 165	1'-0"	1'-0"	1'-0"	3'-6"	6'-0"	9'-0"	13'-6"	-	-	-	-	-	-
	190 / 190H	1'-0"	1'-0"	1'-0"	3'-6"	7'-0"	10'-6"	14'-6"	19'-6"	-	-	-	-	-
	190HS	2'-0"	5'-0"	7'-6"	10'-6"	13'-6"	16'-0"	19'-6"	-	-	-	-	-	-
22"	165	1'-0"	1'-0"	1'-0"	2'-0"	4'-6"	7'-0"	10'-0"	15'-0"	-	-	-	-	-
	190 / 190H	1'-0"	1'-0"	1'-6"	4'-0"	6'-6"	9'-6"	12'-0"	16'-0"	-	-	-	-	-
	190HS	2'-0"	3'-0"	6'-0"	9'-0"	12'-6"	15'-6"	18'-6"	22'-0"	-	-	-	-	-
24" to 26"	165	1'-0"	1'-0"	1'-6"	3'-0"	4'-6"	6'-0"	7'-6"	10'-0"	13'-6"	-	-	-	-
	190 / 190H	1'-0"	1'-0"	1'-6"	3'-6"	5'-0"	6'-6"	8'-0"	11'-0"	14'-0"	18'-6"	-	-	-
	190HS	1'-6"	4'-0"	6'-6"	9'-0"	11'-6"	14'-0"	17'-0"	20'-0"	23'-0"	-	-	-	-
28" to 32"	165	1'-0"	1'-0"	1'-6"	3'-0"	4'-6"	6'-0"	7'-6"	9'-0"	11'-0"	13'-6"	-	-	-
	190 / 190H	1'-6"	3'-0"	4'-6"	6'-0"	7'-6"	9'-0"	11'-0"	12'-6"	15'-6"	18'-6"	-	-	-
	190HS	1'-0"	2'-6"	4'-6"	7'-0"	9'-6"	12'-0"	14'-6"	17'-0"	19'-6"	21'-6"	-	-	-

### General Notes

- Tables are based on maximum allowable uniform loads. **Bold italic** cells indicate 2000 lb. concentrated load spread over two joists has not been considered. Use RedSpec™ software or contact your RedBuilt™ technical representative if concentrated load check is required.
- For other hole sizes, hole locations, or loads, use RedSpec™ software or contact your RedBuilt™ technical representative.
- Holes may be located vertically anywhere in the web. Leave 1/8" of web (minimum) at top and bottom of hole. **DO NOT cut joist flanges.**
- Knockouts are located in web at approximately 12" on-center; they do not affect hole placement.
- Do not cut holes in cantilever without consulting your RedBuilt™ representative.**

### How to use Tables A and B

- Determine the hole shape and size. For rectangular holes, use the largest dimension of the rectangle. Sizes given in the table are hole sizes, not duct sizes.
- Determine the RedBuilt™ joist series and depth.
- Determine the type of support on each side of the hole. If the RedBuilt™ joist is continuous over a support, use both tables. Use Table A if the joist terminates at both supports.
- Find the table cell at the intersection of the RedBuilt™ joist and the hole.
- The measurement shown is the minimum distance from the edge of the hole to the inside face of the support.
- Maintain the minimum required distance from both supports.
- It is permissible to interpolate between hole sizes shown in the tables.



For allowable holes and fasteners information please scan the QR code or use the link below to access page number 3 of **SPRINKLER SYSTEM INSTALLATION GUIDE**

<https://www.redbuilt.com/SprinklerSystemInstallationGuide>



For product warranty information please scan the QR code or use the link below to access the form

<https://www.redbuilt.com/ProductWarranty>

**If you have questions or concerns:**  
Call your RedBuilt™ Representative directly,  
or for general customer service call  
(866) 859-6757