Boise Cascade®
ENGINEERED WOOD PRODUCTS

Technical Note

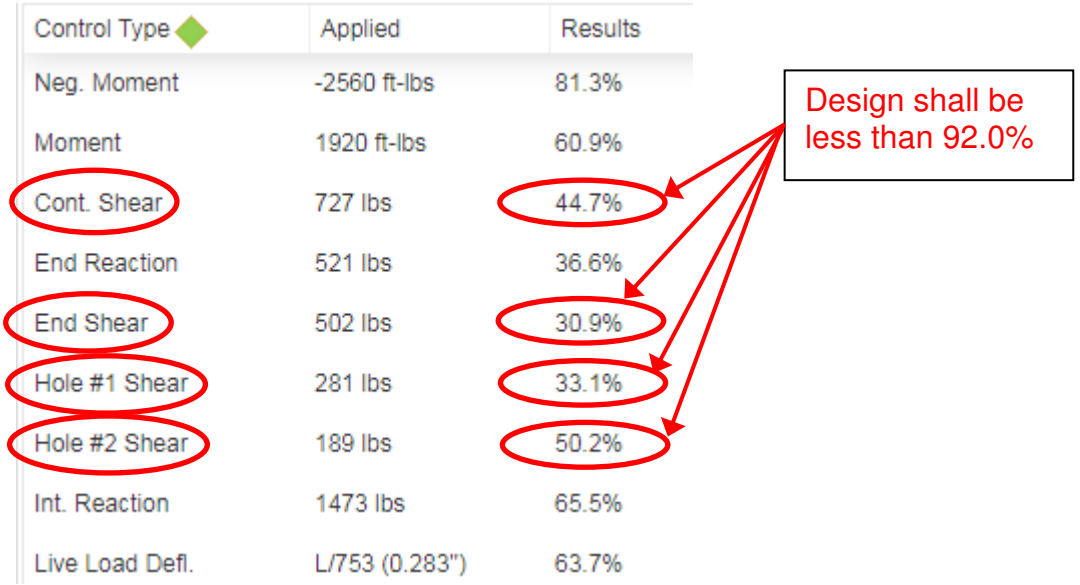
PreserveTech® HW / Royal Pacific Industries Insect-Treated Engineered Wood Products for Hawaii

BCI® Joists, Versa-Lam® LVL, and BC RIM BOARD® OSB may be treated with PreserveTech® HW preservative insect treatment, manufactured by Fire Retardant Chemical Technologies, LLC and applied by Royal Pacific Industries. This wood treatment has been recently accepted by Hawaii building code jurisdictions. The following technical information addresses the structural capacity reduction values of Boise Cascade products associated with the PreserveTech® HW treatment.

BCI® Joists: Only the BCI® Joist shear value is reduced, as shown in the table below.

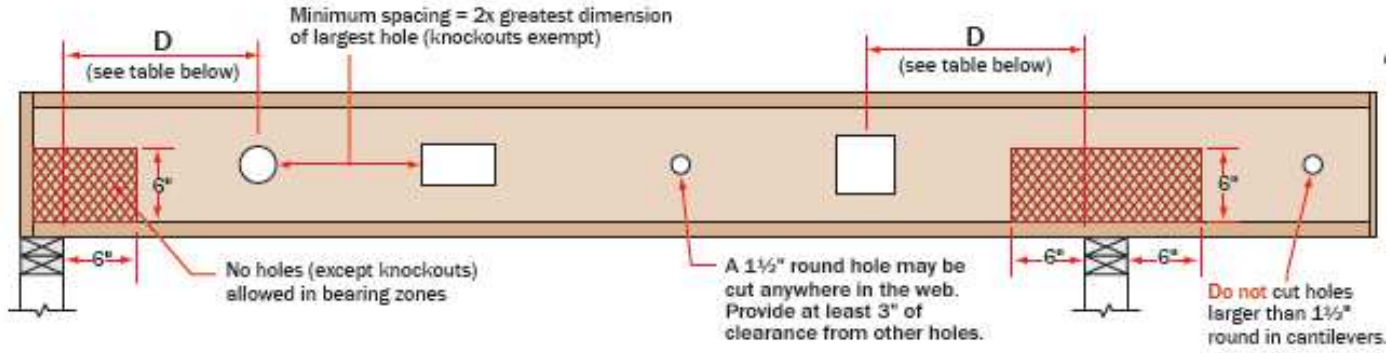
Design Value	Bending Moment (lb*ft)	Stiffness (lb*in^2)	End Reaction (lb)	Intermediate Reaction (lb)	Joist Shear (lb)	Web Hole Shear (lb)	Vertical Load Capacity (lb/ft)
Reduction Factor	1.00	1.00	1.00	1.00	**0.92**	1.00	1.00

The designer may use BC Calc® sizing software to determine the validity of a member design for BCI® joists treated with PreserveTech® HW. End and continuous shear, along with all web holes, shall be checked by the program user and not exceed an actual / allowable stress level of 92.0%.



All BCI® Joist load and span tables shown in the current Boise Cascade EWP *Western Specifier Guide* (03/2013) are valid for joists treated with PreserveTech® HW, with the exception of the Hole Location & Sizing table. For the proper analysis and location of web holes, use the BC Calc® software as previously noted, or refer to the following table:

PreserveTech® HW Treated BCI® Joists Web Hole Location & Sizing Table



Minimum Distance 'D' From Any Support to the Centerline of the Hole

Round Hole Diameter [in]			2	3	4	5	6	7	8	8.875	10	11	12	13
Rectangular Hole Side [in]			-	-	-	3	5	7	-	-	-	-	-	-
Any 9-1/2" Joist	Span [ft]	8	1'-0"	1'-4"	1'-11"	2'-6"	3'-1"	3'-8"						
		12	1'-3"	2'-1"	2'-11"	3'-10"	4'-8"	5'-6"						
		16	1'-8"	2'-9"	3'-11"	5'-1"	6'-3"	7'-5"						
Round Hole Diameter [in]			2	3	4	5	6	7	8	8.875	10	11	12	13
Rectangular Hole Side [in]			-	-	-	2	3	5	7	8		-	-	-
Any 11-7/8" Joist	Span [ft]	8	1'-0"	1'-4"	1'-9"	2'-2"	2'-8"	3'-1"	3'-6"	3'-11"				
		12	1'-4"	2'-0"	2'-8"	3'-4"	4'-0"	4'-8"	5'-3"	5'-10"				
		16	1'-10"	2'-9"	3'-7"	4'-5"	5'-4"	6'-2"	7'-1"	7'-10"				
		20	2'-4"	3'-5"	4'-6"	5'-7"	6'-8"	7'-9"	8'-10"	9'-10"				
Round Hole Diameter [in]			2	3	4	5	6	7	8	8.875	10	11	12	13
Rectangular Hole Side [in]			-	-	-	-	2	3	5	6	8	9		
Any 14" Joist	Span [ft]	8	1'-0"	1'-1"	1'-2"	1'-4"	1'-9"	2'-1"	2'-6"	2'-11"	3'-4"	3'-9"		
		12	1'-0"	1'-1"	1'-5"	2'-0"	2'-7"	3'-2"	3'-10"	4'-4"	5'-0"	5'-7"		
		16	1'-0"	1'-1"	1'-10"	2'-8"	3'-6"	4'-3"	5'-1"	5'-10"	6'-8"	7'-6"		
		20	1'-0"	1'-4"	2'-4"	3'-4"	4'-4"	5'-4"	6'-4"	7'-3"	8'-5"	9'-5"		
		24	1'-0"	1'-7"	2'-10"	4'-0"	5'-3"	6'-5"	7'-8"	8'-9"	10'-1"	11'-3"		
Round Hole Diameter [in]			2	3	4	5	6	7	8	8.875	10	11	12	13
Rectangular Hole Side [in]			-	-	-	-	-	2	3	5	6	8	9	10
Any 16" Joist	Span [ft]	8	1'-0"	1'-1"	1'-2"	1'-2"	1'-3"	1'-6"	1'-10"	2'-2"	2'-7"	2'-11"	3'-4"	3'-8"
		12	1'-0"	1'-1"	1'-2"	1'-2"	1'-8"	2'-3"	2'-9"	3'-3"	3'-10"	4'-5"	5'-0"	5'-6"
		16	1'-0"	1'-1"	1'-2"	1'-6"	2'-3"	3'-0"	3'-9"	4'-4"	5'-2"	5'-11"	6'-8"	7'-4"
		20	1'-0"	1'-1"	1'-2"	1'-11"	2'-10"	3'-9"	4'-8"	5'-5"	6'-6"	7'-5"	8'-4"	9'-2"
		24	1'-0"	1'-1"	1'-3"	2'-4"	3'-5"	4'-6"	5'-7"	6'-7"	7'-9"	8'-10"	10'-0"	11'-1"

- Select a table row based on joist depth and the actual joist span rounded up to the nearest table span. Scan across the row to the column headed by the appropriate round hole diameter or rectangular hole side. Use the longest side of a rectangular hole. The table value is the closest that the centerline of the hole may be to the centerline of the nearest support.
- For multiple holes, the amount of uncut web between holes must equal at least twice the diameter (or longest side) of the largest hole.
- Holes may be positioned vertically anywhere in the web. The joists may be set with the 1½" knockout holes turned either up or down.
- This table was designed to apply to the design conditions covered by tables elsewhere in this publication. Use the BC Calc® software to check other hole sizes or holes under other design conditions. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC Calc® software.

Versa-Lam® LVL: Fastener capacity and compression parallel to grain stress are reduced if Versa-Lam® LVL is treated with PreserveTech® HW. All other design values remain unchanged.

Design Value	Value	Reduction Factor
Fasteners	specific capacity	**0.84**
Compression Parallel to Grain	2850 lb/in^2	**0.95**

For the connection of multiple ply Versa-Lam® LVL beams, the following table shall be followed:

Versa-Lam LVL Multiple Ply Connection Table

Side-Loaded Applications

Maximum Uniform Side Load [lb/ft] - Reduction Factor of 0.84 Applied

Number of Members	Nailed		1/2" dia. Through Bolt			5/8" dia. Through Bolt		
	2 rows 16d Sinkers @ 12" o.c.	3 rows 16d Sinkers @ 12" o.c.	2 rows @ 24" o.c. staggered	2 rows @ 12" o.c. staggered	2 rows @ 6" o.c. staggered	2 rows @ 24" o.c. staggered	2 rows @ 12" o.c. staggered	2 rows @ 6" o.c. staggered
1 3/4" VERSA-LAM (Depths of 18" & less)								
2	395	592	424	848	1697	470	941	1886
3	294	441	315	634	1273	353	706	1415
4	use bolt schedule		281	563	1130	311	626	1256
3 1/2" VERSA-LAM (Depths of 18" & less)								
2	use bolt schedule		718	1441	n/a	945	1890	n/a

Notes

1. Design values apply to common bolts that conform to ANSI/ASME standard B18.21-1981 (ASTM A307 Grades A&B, SAE J429 Grades 1 or 2, or higher). A washer not less than a standard cut washer shall be between the wood and the bolt head and between the wood and the nut. The difference from the edge of the beam to the bolt hole must be at least 2" for 1/2" bolts and 2 1/2" for 5/8" bolts. Bolt holes shall be the same diameter as the bolt.
2. The nail schedules shown apply to both sides of a three member beam.
3. 7" wide beams must be top-loaded or loaded from both sides.

All other fastener and connection types, including joist hangers, straps, and hold-downs, shall be reduced by the 0.84 reduction factor.

Determining the effects of pressure or topical applications and treatments, as well as all performance claims, is the responsibility of the coating manufacturer and/or treater. Boise Cascade will honor warranty claims on its products which arise solely from non-conformities due to manufacturing. Please see Boise Cascade Tech Note GE-25, *Pressure and Topical Applications and Treatments* for further information on treating and Boise Cascade EWP *Western Installation Guide* for product warranty information.