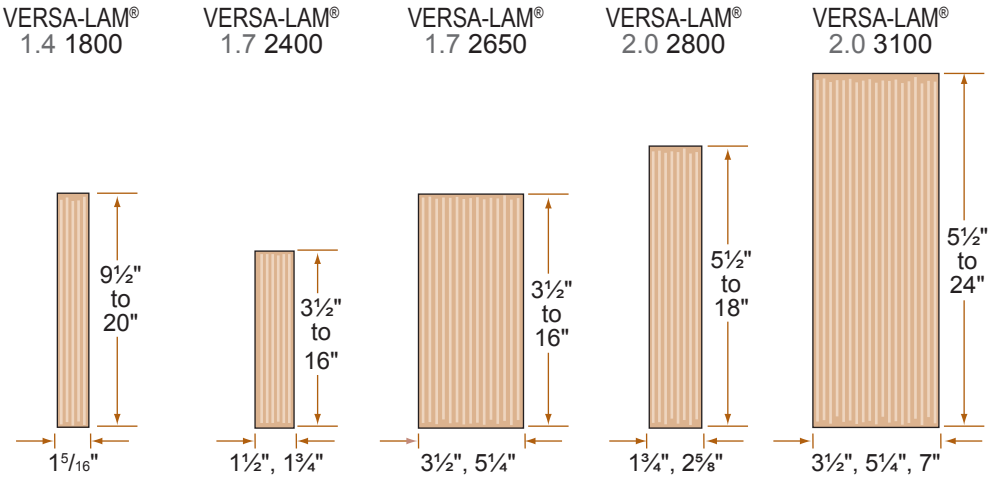
Boise Cascade
Engineered Wood Products

WESTERN VERSA-LAM® SPECIFIER GUIDE

for products manufactured in White City, Oregon

VERSA-LAM® Products

Western VERSA-LAM® Product Profiles



★Some products may not be available in all markets. Contact your Boise Cascade EWP representative for product availability.

An Introduction to VERSA-LAM® Products

When you specify VERSA-LAM® laminated veneer headers/beams, you are building quality into your design. They are excellent as floor and roof framing supports or as headers for doors, windows and garage doors and columns.

Because they have no camber, VERSA-LAM® LVL products provide flatter, quieter floors, and consequently, the builder can expect happier customers with significantly fewer call backs.

VERSA-LAM® Beam Architectural Specifications

Scope: This work includes the complete furnishing and installation of all VERSA-LAM® beams as shown on the drawings, herein specified and necessary to complete the work.

Materials: Douglas Fir-Larch veneers, laminated in a press with all grain parallel with the length of the member. Glues used in lamination are phenol formaldehyde and isocyanate exterior-type adhesives which comply with ASTM D2559.

Design: VERSA-LAM® beams shall be sized and detailed to fit the dimensions and loads indicated on the plans. All designs shall be in accordance with allowable values developed in accordance with ASTM D5456 and listed in the governing code evaluation service's report and section properties based upon standard engineering principles. Verification of design of the VERSA-LAM® beams by complete calculations shall be available upon request.

Drawings: Additional drawings showing layout and detail necessary for determining fit and placement in the buildings are (are not) to be provided by the supplier.

Fabrication: VERSA-LAM® beams shall be manufactured in a plant evaluated for fabrication by the governing code evaluation service and under the supervision of a third-party inspection agency listed by the corresponding evaluation service.

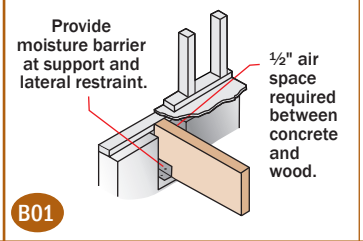
Storage and Installation: VERSA-LAM® beams, if stored prior to erection, shall be stored on stickers spaced a maximum of 15 ft. apart. Beams shall be stored on a dry, level surface and protected from the weather. They shall be handled with care so they are not damaged.

VERSA-LAM® beams are to be installed in accordance with the plans and Boise Cascade EWP's Installation Guide. Temporary construction loads which cause stresses beyond design limits are not permitted. Erection bracing shall be provided to assure adequate lateral support for the individual beams and the entire system until the sheathing material has been applied.

Codes: VERSA-LAM® beams shall be evaluated by a model code evaluation service.

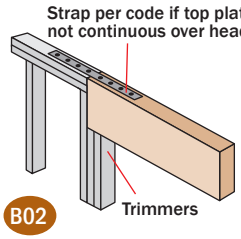
VERSA-LAM® Beam Details

Bearing at concrete/masonry walls



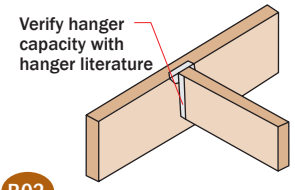
B01

Bearing for door or window header



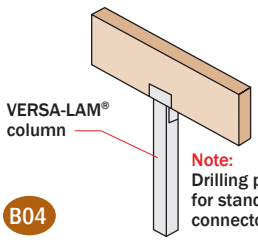
B02

Beam to beam connector



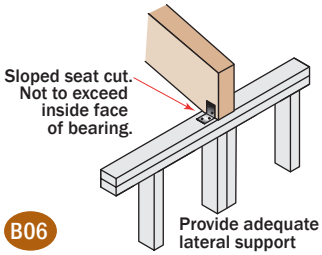
B03

Bearing at column



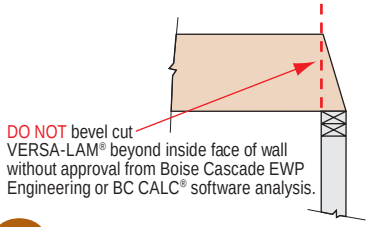
B04

Slope seat cut



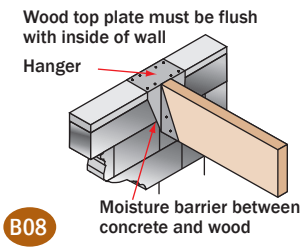
B06

Bevel cut



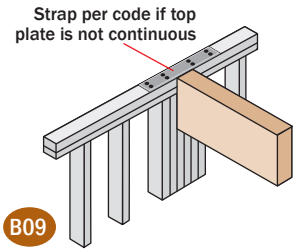
B07

Beam to concrete/masonry walls



B08

Bearing framing into wall



B09

VERSA-LAM® Installation Notes

- Minimum of ½" air space between beam and wall pocket or adequate barrier must be provided between beam and concrete/masonry.
- Adequate bearing shall be provided. If not shown on plans, please refer to load tables in your region's Specifier Guide.
- VERSA-LAM® beams are intended for interior applications only and should be kept as dry as possible during construction.
- Continuous lateral support of top of beam shall be provided (side or top bearing framing).

Multiple Member Connectors

Side-Loaded Applications

Number of Members	Maximum Uniform Side Load [plf]							
	Nailed		½" Dia. Through Bolt(1)			⅝" Dia. Through Bolt(1)		
	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
1¾" VERSA-LAM® (Depths of 18" and less)								
2	470	705	505	1010	2020	560	1120	2245
3(2)	350	525	375	755	1515	420	840	1685
4(3)	use bolt schedule		335	670	1345	370	745	1495
3½" VERSA-LAM®								
2(3)	use bolt schedule		855	1715	N/A	1125	2250	N/A

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 distance from the edge of the beam to the bolt holes must be at least 2" for ½" bolts and 2½" for ⅝" 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.

Top-Loaded Applications

For top-loaded beams and beams with side loads with less than those shown:

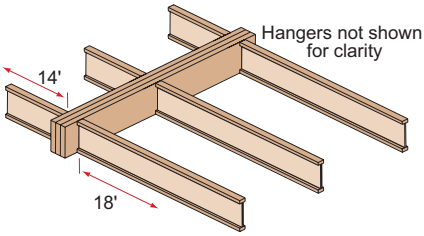
Plies	Depth	Nailing	Maximum Uniform Load From One Side
(2) 1¾" plies	Depth 11⅞" & less	2 rows 16d box/sinker nails @ 12" o.c.	400 plf
	Depth 14" - 18"	3 rows 16d box/sinker nails @ 12" o.c.	600 plf
(3) 1¾" plies (2)	Depth 11⅞" & less	2 rows 16d box/sinker nails @ 12" o.c.	300 plf
	Depth 14" - 18"	3 rows 16d box/sinker nails @ 12" o.c.	450 plf
(4) 1¾" plies	Depth 18" & less	2 rows ½" bolts @ 24" o.c., staggered	335 plf
(2) 3½" plies	Depth 18" & less	2 rows ½" bolts @ 24" o.c., staggered	855 plf
	Depth 20" - 24"	3 rows ½" bolts @ 24" o.c., staggered every 8"	1285 plf

1. Beams wider than 7" must be designed by the engineer of record.
2. All values in these tables may be increased by 15% for snow-load roofs and by 25% for non-snow load roofs where the building code allows.
3. Use allowable load tables or BC CALC® software to size beams.
4. An equivalent specific gravity of 0.5 may be used when designing specific connections with VERSA-LAM®.
5. Connection values are based upon the 2005 NDS.
6. ***FastenMaster TrussLok, Simpson Strong-Tie SDW or SDS, and USP WS screws may also be used to connect multiple member VERSA-LAM® beams, contact Boise Cascade EWP Engineering for further information.***

Designing Connections for Multiple VERSA-LAM® Members

When using multiple ply VERSA-LAM® beams to create a wider member, the connection of the plies is as critical as determining the beam size. When side loaded beams are not connected properly, the inside plies do not support their share of the load and thus the load-carrying capacity of the full member decreases significantly. The following is an example of how to size and connect a multiple-ply VERSA-LAM® floor beam.

Given: Beam shown below is supporting residential floor load (40 psf live load, 10 psf dead load) and is spanning 16'-0". Beam depth is limited to 14".



Find: A multiple 1¾" ply VERSA-LAM® that is adequate to support the design loads and the member's proper connection schedule.

1. Calculate the tributary width that beam is supporting:
   14' / 2 + 18' / 2 = 16'.
2. Use PLF tables on pages 5-7 or BC CALC® to size beam.
   A Triple VERSA-LAM® 2.0 2800 1¾" x 14" is found to adequately support the design loads.
3. Calculate the maximum plf load from one side (the right side in this case).
   Max. Side Load = (18' / 2) x (40 + 10 psf) = 450 plf
4. Go to the Multiple Member Connection Table, Side-Loaded Applications, 1¾" VERSA-LAM®, 3 members
5. The proper connection schedule must have a capacity greater than the max. side load:
   Nailed: 3 rows 16d sinkers @ 12" o.c:
   525 plf is greater than 450 plf OK
   Bolts: ½" diameter 2 rows @ 12" staggered:
   755 plf is greater than 450 plf OK

VERSA-LAM® Allowable Floor Joist Spans

Heavy Storage: 250 psf Live Load / 25 psf Dead Load

O.C. Spacing	1½" VERSA-LAM® 1.7 2400			1¾" VERSA-LAM® 2.0 2800			
	7¼	9¼	11¼	9½	11⅞	14	16
12"	7'–8"	9'–10"	12'–0"	11'–3"	14'–1"	16'–8"	19'–1"
16"	7'–0"	8'–11"	10'–11"	10'–3"	12'–10"	15'–1"	**17'–4"**
19.2"	6'–7"	8'–5"	10'–3"	9'–7"	12'–0"	**14'–3"**	**16'–3"**
24"	5'–10"	7'–6"	**9'–1"**	8'–11"	**11'–2"**	**13'–2"**	**15'–1"**

- Loading based upon Heavy Storage - Table 1607.1 of 2006 International Building Code.
- Spans limited by allowable moment and reaction values, total load deflection of L/240. Live load deflection limited to L/600 with 50 psf, L/360 with 250 psf.
- Table values represent the most restrictive of simple or multiple span applications.
- Table values are the maximum allowable clear distance between supports.
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® sizing software.
- Table based upon bearing supports of 2x6 framing.
- 1½" VERSA-LAM 1.7 2400 is a special order product, check with supplier or Boise Cascade representative for availability.
- **Bold spans indicate applications where bearing wider than 2x6 framing may be needed at intermediate supports.**

Light Storage: 125 psf Live Load / 25 psf Dead Load

O.C. Spacing	1½" VERSA-LAM® 1.7 2400			1¾" VERSA-LAM® 2.0 2800			
	7¼	9¼	11¼	9½	11⅞	14	16
12"	9'–9"	12'–5"	15'–2"	14'–3"	17'–10"	21'–0"	24'–1"
16"	8'–10"	11'–3"	13'–9"	12'–11"	16'–2"	19'–1"	21'–10"
19.2"	8'–3"	10'–7"	12'–11"	12'–2"	15'–2"	17'–11"	20'–6"
24"	7'–8"	9'–10"	12'–0"	11'–3"	14'–1"	16'–8"	19'–1"

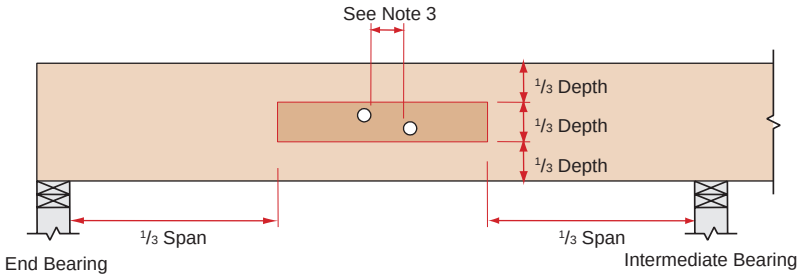
- Loading based upon Light Storage - Table 1607.1 of 2006 International Building Code.
- Spans limited by allowable moment and reaction values, total load deflection of L/240. Live load deflection limited to L/600 with 50 psf, L/360 with 125 psf.
- Table values represent the most restrictive of simple or multiple span applications.
- Table values are the maximum allowable clear distance between supports.
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® sizing software.
- Table based upon bearing supports of 2x6 framing.
- 1½" VERSA-LAM 1.7 2400 is a special order product, check with supplier or Boise Cascade representative for availability.

Allowable Holes in VERSA-LAM® Beams

Notes

1. Square and rectangular holes are not permitted.
2. Round holes may be drilled or cut with a hole saw anywhere within the shaded area of the beam.
3. The horizontal distance between adjacent holes must be at least two times the size of the larger hole.
4. Do not drill more than three access holes in any four foot long section of beam.
5. The maximum round hole diameter permitted is:

Beam Depth	Max. Hole Diameter
5½"	¾"
7¼"	1"
9¼" and greater	2"



6. These limitations apply to holes drilled for plumbing or wiring access only. The size and location of holes drilled for fasteners are governed by the provisions of the *National Design Specification® for Wood Construction.*
7. Beams deflect under load. Size holes to provide clearance where required.
8. This hole chart is valid for beams supporting uniform load only. For beams supporting concentrated loads or for beams with larger holes, contact Boise Cascade EWP Engineering.

VERSA-LAM® 2.0 2800 and 2.0 3100 **(100% Load Duration)**

KEY TO TABLE			
	Top Figure	-	Allowable Total Load [plf]
	Middle Figure	-	Allowable Live Load [plf]
	Bottom Figures	-	Minimum Required Bearing Length at End / Intermediate Supports [inches]

Span [ft]	1¾" VERSA-LAM® 2.0 2800(1)						3½" VERSA-LAM® 2.0 3100						5¼" VERSA-LAM® 2.0 3100						7" VERSA-LAM® 2.0 3100					
	7¼"	9½"	11⅞"	14"	16"(2)	18"(2)	7¼"	9½"	11⅞"	14"	16"	18"	9½"	11⅞"	14"	16"	18"	20"	11⅞"	14"	16"	18"	20"	24"
6	763	1063	1425	1796	2194	2617	1526	2127	2850	3591	4388	5234	3190	4275	5387	6583	7851	7848	5700	7183	8777	10468	10464	10457
	762	-	-	-	-	-	1525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1.8 / 4.4	2.4 / 6.1	3.3 / 8.2	4.1 / 10.3	5 / 12.6	6 / 15	1.8 / 4.4	2.4 / 6.1	3.3 / 8.2	4.1 / 10.3	5 / 12.6	6 / 15	2.4 / 6.1	3.3 / 8.2	4.1 / 10.3	5 / 12.6	6 / 15	6 / 15	3.3 / 8.2	4.1 / 10.3	5 / 12.6	6 / 15	6 / 15	6 / 15
7	614	877	1161	1445	1742	2074	1229	1754	2322	2889	3484	4147	2632	3483	4334	5226	6221	6723	4644	5778	6967	8295	8964	8957
	480	-	-	-	-	-	960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1.6 / 4.1	2.4 / 5.9	3.1 / 7.8	3.9 / 9.7	4.7 / 11.7	5.6 / 13.9	1.6 / 4.1	2.4 / 5.9	3.1 / 7.8	3.9 / 9.7	4.7 / 11.7	5.6 / 13.9	2.4 / 5.9	3.1 / 7.8	3.9 / 9.7	4.7 / 11.7	5.6 / 13.9	6 / 15	3.1 / 7.8	3.9 / 9.7	4.7 / 11.7	5.6 / 13.9	6 / 15	6 / 15
8	470	746	979	1208	1444	1702	939	1493	1958	2416	2887	3404	2239	2938	3624	4331	5106	5879	3917	4832	5775	6808	7839	7832
	322	724	-	-	-	-	643	1447	-	-	-	-	2171	-	-	-	-	-	-	-	-	-	-	-
	1.5 / 3.6	2.3 / 5.7	3 / 7.5	3.7 / 9.3	4.4 / 11.1	5.2 / 13	1.5 / 3.6	2.3 / 5.7	3 / 7.5	3.7 / 9.3	4.4 / 11.1	5.2 / 13	2.3 / 5.7	3 / 7.5	3.7 / 9.3	4.4 / 11.1	5.2 / 13	6 / 15	3 / 7.5	3.7 / 9.3	4.4 / 11.1	5.2 / 13	6 / 15	6 / 15
9	336	618	846	1038	1232	1443	671	1237	1693	2076	2465	2886	1855	2539	3113	3697	4328	5013	3386	4151	4930	5771	6684	6957
	226	508	-	-	-	-	452	1016	-	-	-	-	1525	-	-	-	-	-	-	-	-	-	-	-
	1.5 / 3	2.1 / 5.3	2.9 / 7.3	3.6 / 8.9	4.3 / 10.6	5 / 12.4	1.5 / 3	2.1 / 5.3	2.9 / 7.3	3.6 / 8.9	4.3 / 10.6	5 / 12.4	2.1 / 5.3	2.9 / 7.3	3.6 / 8.9	4.3 / 10.6	5 / 12.4	5.8 / 14.4	2.9 / 7.3	3.6 / 8.9	4.3 / 10.6	5 / 12.4	5.8 / 14.4	6 / 15
10	244	500	745	909	1075	1252	487	1000	1491	1819	2150	2504	1500	2236	2728	3225	3756	4326	2981	3638	4299	5008	5768	6257
	165	370	724	-	-	-	329	741	1447	-	-	-	1111	2171	-	-	-	-	2894	-	-	-	-	-
	1.5 / 3	1.9 / 4.8	2.9 / 7.1	3.5 / 8.7	4.1 / 10.3	4.8 / 12	1.5 / 3	1.9 / 4.8	2.9 / 7.1	3.5 / 8.7	4.1 / 10.3	4.8 / 12	1.9 / 4.8	2.9 / 7.1	3.5 / 8.7	4.1 / 10.3	4.8 / 12	5.5 / 13.8	2.9 / 7.1	3.5 / 8.7	4.1 / 10.3	4.8 / 12	5.5 / 13.8	6 / 15
11	182	412	630	809	953	1105	365	825	1260	1618	1906	2211	1237	1890	2428	2858	3316	3803	2520	3237	3811	4422	5071	5684
	124	278	544	-	-	-	247	557	1087	-	-	-	835	1631	-	-	-	-	2175	-	-	-	-	-
	1.5 / 3	1.7 / 4.4	2.7 / 6.7	3.4 / 8.5	4 / 10.1	4.7 / 11.7	1.5 / 3	1.7 / 4.4	2.7 / 6.7	3.4 / 8.5	4 / 10.1	4.7 / 11.7	1.7 / 4.4	2.7 / 6.7	3.4 / 8.5	4 / 10.1	4.7 / 11.7	5.4 / 13.4	2.7 / 6.7	3.4 / 8.5	4 / 10.1	4.7 / 11.7	5.4 / 13.4	6 / 15
12	140	317	528	722	856	989	279	635	1057	1444	1711	1979	952	1585	2167	2567	2968	3393	2114	2889	3422	3958	4524	5207
	95	214	419	686	-	-	191	429	837	1372	-	-	643	1256	2058	-	-	-	1675	2745	-	-	-	-
	1.5 / 3	1.5 / 3.7	2.4 / 6.1	3.3 / 8.3	3.9 / 9.9	4.6 / 11.4	1.5 / 3	1.5 / 3.7	2.4 / 6.1	3.3 / 8.3	3.9 / 9.9	4.6 / 11.4	1.5 / 3.7	2.4 / 6.1	3.3 / 8.3	3.9 / 9.9	4.6 / 11.4	5.2 / 13	2.4 / 6.1	3.3 / 8.3	3.9 / 9.9	4.6 / 11.4	5.2 / 13	6 / 15
13	109	249	449	614	776	895	218	497	899	1229	1552	1791	746	1348	1843	2328	2686	3062	1798	2458	3104	3581	4083	4803
	75	169	329	540	-	-	150	337	659	1079	-	-	506	988	1619	-	-	-	1317	2159	-	-	-	-
	1.5 / 3	1.5 / 3.1	2.3 / 5.6	3.1 / 7.7	3.9 / 9.7	4.5 / 11.2	1.5 / 3	1.5 / 3.1	2.3 / 5.6	3.1 / 7.7	3.9 / 9.7	4.5 / 11.2	1.5 / 3.1	2.3 / 5.6	3.1 / 7.7	3.9 / 9.7	4.5 / 11.2	5.1 / 12.7	2.3 / 5.6	3.1 / 7.7	3.9 / 9.7	4.5 / 11.2	5.1 / 12.7	6 / 15
14	87	198	387	529	682	817	174	396	774	1058	1363	1635	595	1160	1587	2045	2452	2789	1547	2116	2726	3270	3719	4457
	60	135	264	432	645	-	120	270	527	864	1290	-	405	791	1296	1935	-	-	1055	1728	2580	-	-	-
	1.5 / 3	1.5 / 3	2.1 / 5.2	2.9 / 7.1	3.7 / 9.2	4.4 / 11	1.5 / 3	1.5 / 3	2.1 / 5.2	2.9 / 7.1	3.7 / 9.2	4.4 / 11	1.5 / 3	2.1 / 5.2	2.9 / 7.1	3.7 / 9.2	4.4 / 11	5 / 12.5	2.1 / 5.2	2.9 / 7.1	3.7 / 9.2	4.4 / 11	5 / 12.5	6 / 15
15	70	160	316	460	593	741	140	321	632	920	1186	1483	481	949	1380	1778	2224	2561	1265	1840	2371	2965	3415	4157
	49	110	214	351	524	-	98	220	429	703	1049	-	329	643	1054	1573	-	-	858	1405	2098	-	-	-
	1.5 / 3	1.5 / 3	1.8 / 4.6	2.7 / 6.7	3.4 / 8.6	4.3 / 10.7	1.5 / 3	1.5 / 3	1.8 / 4.6	2.7 / 6.7	3.4 / 8.6	4.3 / 10.7	1.5 / 3	1.8 / 4.6	2.7 / 6.7	3.4 / 8.6	4.3 / 10.7	4.9 / 12.3	1.8 / 4.6	2.7 / 6.7	3.4 / 8.6	4.3 / 10.7	4.9 / 12.3	6 / 15
16	57	131	260	403	520	651	114	263	519	807	1040	1301	394	779	1210	1560	1952	2367	1039	1614	2080	2602	3156	3894
	40	90	177	289	432	615	80	181	353	579	864	1230	271	530	868	1296	1846	-	707	1158	1728	2461	-	-
	1.5 / 3	1.5 / 3	1.6 / 4	2.5 / 6.2	3.2 / 8	4 / 10	1.5 / 3	1.5 / 3	1.6 / 4	2.5 / 6.2	3.2 / 8	4 / 10	1.5 / 3	1.6 / 4	2.5 / 6.2	3.2 / 8	4 / 10	4.9 / 12.2	1.6 / 4	2.5 / 6.2	3.2 / 8	4 / 10	4.9 / 12.2	6 / 15
17		109	216	356	460	575	94	218	431	711	920	1151	327	647	1067	1380	1726	2109	862	1423	1840	2302	2812	3658
		75	147	241	360	513	67	151	295	483	720	1026	226	442	724	1081	1539	-	589	965	1441	2052	-	-
		1.5 / 3	1.5 / 3.6	2.3 / 5.9	3 / 7.6	3.8 / 9.4	1.5 / 3	1.5 / 3	1.5 / 3.6	2.3 / 5.9	3 / 7.6	3.8 / 9.4	1.5 / 3	1.5 / 3.6	2.3 / 5.9	3 / 7.6	3.8 / 9.4	4.6 / 11.5	1.5 / 3.6	2.3 / 5.9	3 / 7.6	3.8 / 9.4	4.6 / 11.5	6 / 15
18		91	181	299	409	512	78	182	362	597	819	1025	273	542	896	1228	1537	1878	723	1195	1638	2049	2504	3408
		64	124	203	303	432	56	127	248	407	607	864	191	372	610	910	1296	1778	496	813	1214	1728	2371	-
		1.5 / 3	1.5 / 3.2	2.1 / 5.2	2.9 / 7.1	3.6 / 8.9	1.5 / 3	1.5 / 3	1.5 / 3.2	2.1 / 5.2	2.9 / 7.1	3.6 / 8.9	1.5 / 3	1.5 / 3.2	2.1 / 5.2	2.9 / 7.1	3.6 / 8.9	4.4 / 10.9	1.5 / 3.2	2.1 / 5.2	2.9 / 7.1	3.6 / 8.9	4.4 / 10.9	5.9 / 14.8
19		77	153	253	367	459	66	153	306	506	733	918	230	459	759	1100	1377	1683	612	1012	1467	1836	2244	3174
		54	105	173	258	367	48	108	211	346	516	735	162	316	519	774	1102	1512	422	691	1032	1470	2016	-
		1.5 / 3	1.5 / 3	1.9 / 4.7	2.7 / 6.8	3.4 / 8.5	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.7	2.7 / 6.8	3.4 / 8.5	1.5 / 3	1.5 / 3	1.9 / 4.7	2.7 / 6.8	3.4 / 8.5	4.1 / 10.3	1.5 / 3	1.9 / 4.7	2.7 / 6.8	3.4 / 8.5	4.1 / 10.3	5.8 / 14.6
20		65	130	216	325	413	55	130	261	432	649	827	196	391	648	974	1240	1516	521	864	1299	1654	2022	2860
		46	90	148	221	315	41	93	181	296	442	630	139	271	445	664	945	1296	362	593	885	1260	1728	-
		1.5 / 3	1.5 / 3	1.7 / 4.2	2.5 / 6.3	3.2 / 8	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.2	2.5 / 6.3	3.2 / 8	1.5 / 3	1.5 / 3	1.7 / 4.2	2.5 / 6.3	3.2 / 8	3.9 / 9.8	1.5 / 3	1.7 / 4.2	2.5 / 6.3	3.2 / 8	3.9 / 9.8	5.5 / 13.8
22			97	161	242	340		96	193	321	484	681	144	290	482	726	1021	1248	386	643	969	1361	1665	2356
			68	111	166	237		70	136	223	332	473	104	204	334	499	710	974	272	445	665	947	1299	2244
			1.5 / 3	1.5 / 3.5	2.1 / 5.2	2.9 / 7.3		1.5 / 3	1.5 / 3	1.5 / 3.5	2.1 / 5.2	2.9 / 7.3	1.5 / 3	1.5 / 3	1.5 / 3.5	2.1 / 5.2	2.9 / 7.3	3.6 / 8.9	1.5 / 3	1.5 / 3.5	2.1 / 5.2	2.9 / 7.3	3.6 / 8.9	5 / 12.6
24			73	122	185	265		72	146	245	370	531	108	220	367	555	796	1045	293	489	739	1061	1393	1973
			52	86	128	182		54	105	172	256	365	80	157	257	384	547	750	209	343	512	729	1000	1728
			1.5 / 3	1.5 / 3	1.8 / 4.4	2.5 / 6.3		1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.4	2.5 / 6.3	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.4	2.5 / 6.3	3.3 / 8.2	1.5 / 3	1.5 / 3	1.8 / 4.4	2.5 / 6.3	3.3 / 8.2	4.6 / 11.5
26			56	95	144	207		55	113	190	288	414	82	169	285	432	621	858	226	380	575	828	1144	1675
			41	67	101	143		42	82	135	201	287	63	124	202	302	430	590	165	270	403	574	787	1359
			1.5 / 3	1.5 / 3	1.5 / 3.7	2.1 / 5.3		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.7	2.1 / 5.3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.7	2.1 / 5.3	2.9 / 7.3	1.5 / 3	1.5 / 3	1.5 / 3.7	2.1 / 5.3	2.9 / 7.3	4.3 / 10.6
28				75	114	164			88	149	227	328	63	132	224	341	492	682	176	299	455	656	909	1438
				54	81	115			66	108	161	230	51	99	162	242	344	472	132	216	322	459	630	1088
				1.5 / 3	1.5 / 3.2	1.8 / 4.6			1.5 / 3	1.5 / 3	1.5 / 3.2	1.8 / 4.6	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.2	1.8 / 4.6	2.5 / 6.3	1.5 / 3	1.5 / 3	1.5 / 3.2	1.8 / 4.6	2.5 / 6.3	4 / 9.9
30				60	91	132			70	119	182	264		105	179	273	396	549	139	238	365	528	732	1247
				44	66	93			54	88	131	187		80	132	197	280	384	107	176	262	373	512	885
				1.5 / 3	1.5 / 3	1.6 / 4			1.5 / 3	1.5 / 3	1.5 / 3	1.6 / 4		1.5 / 3	1.5 / 3	1.5 / 3	1.6 / 4	2.2 / 5.5	1.5 / 3	1.5 / 3	1.5 / 3	1.6 / 4	2.2 / 5.5	3.7 / 9.2

(1) For 2-ply, 3-ply or 4-ply beams; double, triple or quadruple Allowable Total Load and Allowable Live Load values. Minimum Required Bearing Lengths remain the same for any number of plies.

(2) 1¾ inch members deeper than 14 inches are to be used as multiple-member beams only.

- Total Load values are limited by shear, moment or deflection equal to L/240. Total Load values are the capacity of the beam in addition to its own weight.
- Live Load values are limited by deflection equal to L/360. Check the local building code for other deflection limits that may apply. Where a Live Load value is not shown, the Total Load value will control.
- Table values represent the most restrictive of simple or multiple span applications. Span is measured center to center of the supports. Analyze multiple span beams with the BC CALC® software if the length of any span is less than half the length of an adjacent span.
- Table values assume that lateral support is provided at each support and continuously along the compression edge of the beam.
- Table values for Minimum Required Bearing Lengths are based on the allowable compression design value perpendicular to grain for the beam and the Total Load value shown. Other design considerations, such as a weaker support material, may warrant longer bearing lengths. Table values assume that support is provided across the full width of the beam.
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® software.

VERSA-LAM® Roof Load Tables

VERSA-LAM® 2.0 2800 and 2.0 3100 **(115% Load Duration)**

KEY TO TABLE			
	Top Figure	-	Allowable Total Load [plf]
	Middle Figure	-	Allowable Live Load [plf]
	Bottom Figures	-	Minimum Required Bearing Length at End / Intermediate Supports [inches]

Span [ft]	1¾" VERSA-LAM® 2.0 2800(1)						3½" VERSA-LAM® 2.0 3100						5¼" VERSA-LAM® 2.0 3100						7" VERSA-LAM® 2.0 3100					
	7¼"	9½"	11⅞"	14"	16"(2)	18"(2)	7¼"	9½"	11⅞"	14"	16"	18"	9½"	11⅞"	14"	16"	18"	20"	11⅞"	14"	16"	18"	20"	24"
6	878	1224	1640	2066	2524	2617	1756	2447	3279	4132	5049	5234	3671	4919	6198	7573	7851	7848	6558	8264	10098	10468	10464	10457
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2 / 5	2.8 / 7	3.8 / 9.4	4.7 / 11.8	5.8 / 14.5	6 / 15	2 / 5	2.8 / 7	3.8 / 9.4	4.7 / 11.8	5.8 / 14.5	6 / 15	2.8 / 7	3.8 / 9.4	4.7 / 11.8	5.8 / 14.5	6 / 15	6 / 15	3.8 / 9.4	4.7 / 11.8	5.8 / 14.5	6 / 15	6 / 15	6 / 15
7	707	1009	1336	1662	2004	2242	1414	2019	2672	3325	4008	4484	3028	4008	4987	6013	6726	6723	5344	6649	8017	8968	8964	8957
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1.9 / 4.7	2.7 / 6.8	3.6 / 8.9	4.4 / 11.1	5.4 / 13.4	6 / 15	1.9 / 4.7	2.7 / 6.8	3.6 / 8.9	4.4 / 11.1	5.4 / 13.4	6 / 15	2.7 / 6.8	3.6 / 8.9	4.4 / 11.1	5.4 / 13.4	6 / 15	6 / 15	3.6 / 8.9	4.4 / 11.1	5.4 / 13.4	6 / 15	6 / 15	6 / 15
8	541	859	1127	1390	1661	1958	1081	1718	2254	2780	3323	3917	2577	3381	4171	4984	5875	5879	4508	5561	6645	7834	7839	7832
	482	-	-	-	-	-	965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1.7 / 4.1	2.6 / 6.6	3.5 / 8.6	4.3 / 10.6	5.1 / 12.7	6 / 15	1.7 / 4.1	2.6 / 6.6	3.5 / 8.6	4.3 / 10.6	5.1 / 12.7	6 / 15	2.6 / 6.6	3.5 / 8.6	4.3 / 10.6	5.1 / 12.7	6 / 15	6 / 15	3.5 / 8.6	4.3 / 10.6	5.1 / 12.7	6 / 15	6 / 15	6 / 15
9	426	712	974	1194	1418	1660	853	1423	1948	2389	2837	3321	2135	2923	3583	4255	4981	5223	3897	4778	5673	6642	6964	6957
	339	-	-	-	-	-	678	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1.5 / 3.7	2.5 / 6.1	3.4 / 8.4	4.1 / 10.3	4.9 / 12.2	5.7 / 14.3	1.5 / 3.7	2.5 / 6.1	3.4 / 8.4	4.1 / 10.3	4.9 / 12.2	5.7 / 14.3	2.5 / 6.1	3.4 / 8.4	4.1 / 10.3	4.9 / 12.2	5.7 / 14.3	6 / 15	3.4 / 8.4	4.1 / 10.3	4.9 / 12.2	5.7 / 14.3	6 / 15	6 / 15
10	326	576	858	1047	1237	1441	652	1151	1716	2094	2474	2882	1727	2574	3140	3711	4323	4698	3431	4187	4949	5764	6264	6257
	247	556	-	-	-	-	494	1111	-	-	-	-	1667	-	-	-	-	-	-	-	-	-	-	-
	1.5 / 3.1	2.2 / 5.5	3.3 / 8.2	4 / 10	4.7 / 11.9	5.5 / 13.8	1.5 / 3.1	2.2 / 5.5	3.3 / 8.2	4 / 10	4.7 / 11.9	5.5 / 13.8	2.2 / 5.5	3.3 / 8.2	4 / 10	4.7 / 11.9	5.5 / 13.8	6 / 15	3.3 / 8.2	4 / 10	4.7 / 11.9	5.5 / 13.8	6 / 15	6 / 15
11	244	475	725	932	1097	1272	488	950	1450	1863	2194	2545	1425	2176	2795	3290	3817	4268	2901	3726	4387	5090	5691	5684
	186	418	-	-	-	-	371	835	-	-	-	-	1253	-	-	-	-	-	-	-	-	-	-	-
	1.5 / 3	2 / 5	3.1 / 7.7	3.9 / 9.8	4.6 / 11.6	5.4 / 13.4	1.5 / 3	2 / 5	3.1 / 7.7	3.9 / 9.8	4.6 / 11.6	5.4 / 13.4	2 / 5	3.1 / 7.7	3.9 / 9.8	4.6 / 11.6	5.4 / 13.4	6 / 15	3.1 / 7.7	3.9 / 9.8	4.6 / 11.6	5.4 / 13.4	6 / 15	6 / 15
12	187	398	609	831	985	1139	375	797	1217	1663	1970	2278	1195	1826	2494	2955	3417	3906	2434	3326	3940	4556	5208	5207
	143	322	-	-	-	-	286	643	-	-	-	-	965	-	-	-	-	-	-	-	-	-	-	-
	1.5 / 3	1.8 / 4.6	2.8 / 7	3.8 / 9.6	4.5 / 11.3	5.2 / 13.1	1.5 / 3	1.8 / 4.6	2.8 / 7	3.8 / 9.6	4.5 / 11.3	5.2 / 13.1	1.8 / 4.6	2.8 / 7	3.8 / 9.6	4.5 / 11.3	5.2 / 13.1	6 / 15	2.8 / 7	3.8 / 9.6	4.5 / 11.3	5.2 / 13.1	6 / 15	6 / 15
13	147	333	518	708	894	1031	293	666	1035	1415	1787	2062	999	1553	2123	2681	3092	3525	2071	2830	3574	4123	4701	4803
	112	253	494	-	-	-	225	506	988	-	-	-	759	1482	-	-	-	-	1976	-	-	-	-	-
	1.5 / 3	1.7 / 4.2	2.6 / 6.5	3.5 / 8.8	4.5 / 11.2	5.1 / 12.9	1.5 / 3	1.7 / 4.2	2.6 / 6.5	3.5 / 8.8	4.5 / 11.2	5.1 / 12.9	1.7 / 4.2	2.6 / 6.5	3.5 / 8.8	4.5 / 11.2	5.1 / 12.9	5.9 / 14.7	2.6 / 6.5	3.5 / 8.8	4.5 / 11.2	5.1 / 12.9	5.9 / 14.7	6 / 15
14	117	266	446	609	785	941	234	532	891	1218	1570	1883	797	1337	1828	2355	2824	3212	1783	2437	3139	3765	4283	4457
	90	203	396	-	-	-	180	405	791	-	-	-	608	1187	-	-	-	-	1582	-	-	-	-	-
	1.5 / 3	1.5 / 3.6	2.4 / 6	3.3 / 8.2	4.2 / 10.6	5.1 / 12.7	1.5 / 3	1.5 / 3.6	2.4 / 6	3.3 / 8.2	4.2 / 10.6	5.1 / 12.7	1.5 / 3.6	2.4 / 6	3.3 / 8.2	4.2 / 10.6	5.1 / 12.7	5.8 / 14.4	2.4 / 6	3.3 / 8.2	4.2 / 10.6	5.1 / 12.7	5.8 / 14.4	6 / 15
15	94	215	388	530	683	854	189	431	775	1060	1366	1708	646	1163	1590	2048	2561	2949	1550	2119	2731	3415	3932	4157
	73	165	322	527	-	-	146	329	643	1054	-	-	494	965	1581	-	-	-	1286	2108	-	-	-	-
	1.5 / 3	1.5 / 3.1	2.2 / 5.6	3.1 / 7.7	3.9 / 9.9	4.9 / 12.3	1.5 / 3	1.5 / 3.1	2.2 / 5.6	3.1 / 7.7	3.9 / 9.9	4.9 / 12.3	1.5 / 3.1	2.2 / 5.6	3.1 / 7.7	3.9 / 9.9	4.9 / 12.3	5.7 / 14.2	2.2 / 5.6	3.1 / 7.7	3.9 / 9.9	4.9 / 12.3	5.7 / 14.2	6 / 15
16	77	177	340	465	599	749	154	353	680	930	1198	1499	530	1020	1395	1798	2248	2726	1360	1860	2397	2998	3635	3894
	60	136	265	434	-	-	121	271	530	868	-	-	407	795	1303	-	-	-	1060	1737	-	-	-	-
	1.5 / 3	1.5 / 3	2.1 / 5.3	2.9 / 7.2	3.7 / 9.2	4.6 / 11.5	1.5 / 3	1.5 / 3	2.1 / 5.3	2.9 / 7.2	3.7 / 9.2	4.6 / 11.5	1.5 / 3	2.1 / 5.3	2.9 / 7.2	3.7 / 9.2	4.6 / 11.5	5.6 / 14	2.1 / 5.3	2.9 / 7.2	3.7 / 9.2	4.6 / 11.5	5.6 / 14	6 / 15
17	64	147	289	411	530	663	128	293	578	822	1060	1326	440	868	1233	1590	1989	2429	1157	1644	2120	2652	3239	3663
	50	113	221	362	-	-	101	226	442	724	-	-	339	663	1086	-	-	-	884	1448	-	-	-	-
	1.5 / 3	1.5 / 3	1.9 / 4.8	2.7 / 6.8	3.5 / 8.7	4.3 / 10.9	1.5 / 3	1.5 / 3	1.9 / 4.8	2.7 / 6.8	3.5 / 8.7	4.3 / 10.9	1.5 / 3	1.9 / 4.8	2.7 / 6.8	3.5 / 8.7	4.3 / 10.9	5.3 / 13.3	1.9 / 4.8	2.7 / 6.8	3.5 / 8.7	4.3 / 10.9	5.3 / 13.3	6 / 15
18	53	123	243	366	472	590	106	246	486	732	944	1181	368	728	1098	1416	1771	2164	971	1464	1888	2362	2885	3457
	42	95	186	305	455	-	85	191	372	610	910	-	286	558	915	1366	-	-	744	1220	1821	-	-	-
	1.5 / 3	1.5 / 3	1.7 / 4.3	2.6 / 6.4	3.3 / 8.2	4.1 / 10.3	1.5 / 3	1.5 / 3	1.7 / 4.3	2.6 / 6.4	3.3 / 8.2	4.1 / 10.3	1.5 / 3	1.7 / 4.3	2.6 / 6.4	3.3 / 8.2	4.1 / 10.3	5 / 12.5	1.7 / 4.3	2.6 / 6.4	3.3 / 8.2	4.1 / 10.3	5 / 12.5	6 / 15
19		104	206	328	423	529	90	208	411	656	846	1058	311	617	984	1269	1587	1939	823	1311	1691	2116	2586	3273
		81	158	259	387	-	72	162	316	519	774	-	243	475	778	1161	-	-	633	1037	1548	-	-	-
		1.5 / 3	1.5 / 3.8	2.4 / 6	3.1 / 7.8	3.9 / 9.7	1.5 / 3	1.5 / 3	1.5 / 3.8	2.4 / 6	3.1 / 7.8	3.9 / 9.7	1.5 / 3	1.5 / 3.8	2.4 / 6	3.1 / 7.8	3.9 / 9.7	4.7 / 11.9	1.5 / 3.8	2.4 / 6	3.1 / 7.8	3.9 / 9.7	4.7 / 11.9	6 / 15
20		88	176	290	381	477	76	177	351	580	762	953	265	527	870	1143	1430	1748	702	1160	1524	1907	2330	3107
		69	136	222	332	473	62	139	271	445	664	945	208	407	667	996	1418	-	543	889	1327	1890	-	-
		1.5 / 3	1.5 / 3.4	2.3 / 5.6	3 / 7.4	3.7 / 9.2	1.5 / 3	1.5 / 3	1.5 / 3.4	2.3 / 5.6	3 / 7.4	3.7 / 9.2	1.5 / 3	1.5 / 3.4	2.3 / 5.6	3 / 7.4	3.7 / 9.2	4.5 / 11.3	1.5 / 3.4	2.3 / 5.6	3 / 7.4	3.7 / 9.2	4.5 / 11.3	6 / 15
22		65	131	216	314	393	55	131	261	433	627	785	196	392	649	941	1178	1440	522	866	1254	1570	1920	2716
		52	102	167	249	355	46	104	204	334	499	710	157	306	501	748	1065	-	408	668	997	1420	-	-
		1.5 / 3	1.5 / 3	1.9 / 4.7	2.7 / 6.7	3.4 / 8.4	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.7	2.7 / 6.7	3.4 / 8.4	1.5 / 3	1.5 / 3	1.9 / 4.7	2.7 / 6.7	3.4 / 8.4	4.1 / 10.2	1.5 / 3	1.9 / 4.7	2.7 / 6.7	3.4 / 8.4	4.1 / 10.2	5.8 / 14.5
24			99	165	249	329		99	199	330	498	657	148	298	496	747	986	1205	397	661	995	1314	1607	2276
			79	129	192	273		80	157	257	384	547	121	236	386	576	820	1125	314	515	768	1094	1500	-
			1.5 / 3	1.6 / 3.9	2.3 / 5.9	3.1 / 7.7		1.5 / 3	1.5 / 3	1.6 / 3.9	2.3 / 5.9	3.1 / 7.7	1.5 / 3	1.5 / 3	1.6 / 3.9	2.3 / 5.9	3.1 / 7.7	3.8 / 9.4	1.5 / 3	1.6 / 3.9	2.3 / 5.9	3.1 / 7.7	3.8 / 9.4	5.3 / 13.3
26			77	129	194	279		76	154	257	388	557	114	231	386	583	836	1023	308	515	777	1115	1364	1933
			62	101	151	215		63	124	202	302	430	95	185	304	453	645	885	247	405	604	860	1180	-
			1.5 / 3	1.5 / 3.3	2 / 5	2.8 / 7.1		1.5 / 3	1.5 / 3	1.5 / 3.3	2 / 5	2.8 / 7.1	1.5 / 3	1.5 / 3	1.5 / 3.3	2 / 5	2.8 / 7.1	3.5 / 8.7	1.5 / 3	1.5 / 3.3	2 / 5	2.8 / 7.1	3.5 / 8.7	4.9 / 12.2
28			61	102	154	221		59	121	203	308	443	88	182	305	462	664	878	242	407	616	886	1171	1660
			49	81	121	172		51	99	162	242	344	76	148	243	363	517	709	198	324	484	689	945	1633
			1.5 / 3	1.5 / 3	1.7 / 4.3	2.4 / 6.1		1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.3	2.4 / 6.1	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.3	2.4 / 6.1	3.2 / 8	1.5 / 3	1.5 / 3	1.7 / 4.3	2.4 / 6.1	3.2 / 8	4.5 / 11.4
30				82	124	179			97	163	248	357	70	145	245	372	536	741	193	326	496	714	988	1441
				66	98	140			80	132	197	280	62	121	198	295	420	576	161	263	393	560	768	1327
				1.5 / 3	1.5 / 3.7	2.1 / 5.3			1.5 / 3	1.5 / 3	1.5 / 3.7	2.1 / 5.3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.7	2.1 / 5.3	2.9 / 7.3	1.5 / 3	1.5 / 3	1.5 / 3.7	2.1 / 5.3	2.9 / 7.3	4.2 / 10.6

(1) For 2-ply, 3-ply or 4-ply beams; double, triple or quadruple Allowable Total Load and Allowable Live Load values. Minimum Required Bearing Lengths remain the same for any number of plies.

(2) 1¾ inch members deeper than 14 inches are to be used as multiple-member beams only.

- Total Load values are limited by shear, moment or deflection equal to L/240. Total Load values are the capacity of the beam in addition to its own weight.
- Live Load values are limited by deflection equal to L/360. Check the local building code for other deflection limits that may apply. Where a Live Load value is not shown, the Total Load value will control.
- Table values represent the most restrictive of simple or multiple span applications. Span is measured center to center of the supports. Analyze multiple span beams with the BC CALC® software if the length of any span is less than half the length of an adjacent span.
- Table values assume that lateral support is provided at each support and continuously along the compression edge of the beam.
- Table values for Minimum Required Bearing Lengths are based on the allowable compression design value perpendicular to grain for the beam and the Total Load value shown. Other design considerations, such as a weaker support material, may warrant longer bearing lengths. Table values assume that support is provided across the full width of the beam.
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® software.

VERSA-LAM® 2.0 2800 and 2.0 3100 **(125% Load Duration)**

KEY TO TABLE			
	Top Figure	-	Allowable Total Load [plf]
	Middle Figure	-	Allowable Live Load [plf]
	Bottom Figures	-	Minimum Required Bearing Length at End / Intermediate Supports [inches]

Span [ft]	1¾" VERSA-LAM® 2.0 2800(1)						3½" VERSA-LAM® 2.0 3100						5¼" VERSA-LAM® 2.0 3100						7" VERSA-LAM® 2.0 3100					
	7¼"	9½"	11⅞"	14"	16"(2)	18"(2)	7¼"	9½"	11⅞"	14"	16"	18"	9½"	11⅞"	14"	16"	18"	20"	11⅞"	14"	16"	18"	20"	24"
6	955	1330	1783	2246	2618	2617	1909	2661	3565	4492	5236	5234	3991	5348	6738	7853	7851	7848	7131	8984	10471	10468	10464	10457
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.2 / 5.5	3.1 / 7.6	4.1 / 10.2	5.1 / 12.9	6 / 15	6 / 15	2.2 / 5.5	3.1 / 7.6	4.1 / 10.2	5.1 / 12.9	6 / 15	6 / 15	3.1 / 7.6	4.1 / 10.2	5.1 / 12.9	6 / 15	6 / 15	6 / 15	4.1 / 10.2	5.1 / 12.9	6 / 15	6 / 15	6 / 15	6 / 15
7	769	1098	1453	1807	2179	2242	1538	2195	2905	3615	4358	4484	3293	4358	5422	6537	6726	6723	5810	7229	8716	8968	8964	8957
	720	-	-	-	-	-	1440	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.1 / 5.1	2.9 / 7.3	3.9 / 9.7	4.8 / 12.1	5.8 / 14.6	6 / 15	2.1 / 5.1	2.9 / 7.3	3.9 / 9.7	4.8 / 12.1	5.8 / 14.6	6 / 15	2.9 / 7.3	3.9 / 9.7	4.8 / 12.1	5.8 / 14.6	6 / 15	6 / 15	3.9 / 9.7	4.8 / 12.1	5.8 / 14.6	6 / 15	6 / 15	6 / 15
8	588	934	1225	1512	1806	1961	1176	1868	2451	3023	3613	3921	2802	3676	4535	5419	5882	5879	4901	6047	7226	7843	7839	7832
	482	-	-	-	-	-	965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1.8 / 4.5	2.9 / 7.1	3.8 / 9.4	4.6 / 11.6	5.5 / 13.8	6 / 15	1.8 / 4.5	2.9 / 7.1	3.8 / 9.4	4.6 / 11.6	5.5 / 13.8	6 / 15	2.9 / 7.1	3.8 / 9.4	4.6 / 11.6	5.5 / 13.8	6 / 15	6 / 15	3.8 / 9.4	4.6 / 11.6	5.5 / 13.8	6 / 15	6 / 15	6 / 15
9	448	774	1059	1299	1542	1742	897	1548	2119	2598	3085	3484	2322	3178	3897	4627	5226	5223	4238	5195	6169	6968	6964	6957
	339	762	-	-	-	-	678	1525	-	-	-	-	2287	-	-	-	-	-	-	-	-	-	-	-
	1.5 / 3.9	2.7 / 6.7	3.7 / 9.1	4.5 / 11.2	5.3 / 13.3	6 / 15	1.5 / 3.9	2.7 / 6.7	3.7 / 9.1	4.5 / 11.2	5.3 / 13.3	6 / 15	2.7 / 6.7	3.7 / 9.1	4.5 / 11.2	5.3 / 13.3	6 / 15	6 / 15	3.7 / 9.1	4.5 / 11.2	5.3 / 13.3	6 / 15	6 / 15	6 / 15
10	326	626	933	1138	1345	1567	652	1252	1866	2277	2691	3134	1878	2799	3415	4036	4701	4698	3732	4554	5381	6268	6264	6257
	247	556	-	-	-	-	494	1111	-	-	-	-	1667	-	-	-	-	-	-	-	-	-	-	-
	1.5 / 3.1	2.4 / 6	3.6 / 8.9	4.4 / 10.9	5.2 / 12.9	6 / 15	1.5 / 3.1	2.4 / 6	3.6 / 8.9	4.4 / 10.9	5.2 / 12.9	6 / 15	2.4 / 6	3.6 / 8.9	4.4 / 10.9	5.2 / 12.9	6 / 15	6 / 15	3.6 / 8.9	4.4 / 10.9	5.2 / 12.9	6 / 15	6 / 15	6 / 15
11	244	517	789	1013	1193	1384	488	1033	1577	2026	2386	2768	1550	2366	3039	3578	4151	4268	3155	4052	4771	5535	5691	5684
	186	418	-	-	-	-	371	835	-	-	-	-	1253	-	-	-	-	-	-	-	-	-	-	-
	1.5 / 3	2.2 / 5.5	3.3 / 8.3	4.3 / 10.7	5 / 12.6	5.8 / 14.6	1.5 / 3	2.2 / 5.5	3.3 / 8.3	4.3 / 10.7	5 / 12.6	5.8 / 14.6	2.2 / 5.5	3.3 / 8.3	4.3 / 10.7	5 / 12.6	5.8 / 14.6	6 / 15	3.3 / 8.3	4.3 / 10.7	5 / 12.6	5.8 / 14.6	6 / 15	6 / 15
12	187	425	662	904	1071	1239	375	849	1324	1809	2142	2478	1274	1986	2713	3214	3716	3911	2648	3617	4285	4955	5214	5207
	143	322	628	-	-	-	286	643	1256	-	-	-	965	1884	-	-	-	-	2512	-	-	-	-	-
	1.5 / 3	2 / 4.9	3.1 / 7.6	4.2 / 10.4	4.9 / 12.3	5.7 / 14.3	1.5 / 3	2 / 4.9	3.1 / 7.6	4.2 / 10.4	4.9 / 12.3	5.7 / 14.3	2 / 4.9	3.1 / 7.6	4.2 / 10.4	4.9 / 12.3	5.7 / 14.3	6 / 15	3.1 / 7.6	4.2 / 10.4	4.9 / 12.3	5.7 / 14.3	6 / 15	6 / 15
13	147	333	563	770	972	1121	293	666	1126	1539	1944	2242	999	1690	2309	2916	3363	3608	2253	3078	3888	4485	4810	4803
	112	253	494	-	-	-	225	506	988	-	-	-	759	1482	-	-	-	-	1976	-	-	-	-	-
	1.5 / 3	1.7 / 4.2	2.8 / 7	3.8 / 9.6	4.8 / 12.1	5.6 / 14	1.5 / 3	1.7 / 4.2	2.8 / 7	3.8 / 9.6	4.8 / 12.1	5.6 / 14	1.7 / 4.2	2.8 / 7	3.8 / 9.6	4.8 / 12.1	5.6 / 14	6 / 15	2.8 / 7	3.8 / 9.6	4.8 / 12.1	5.6 / 14	6 / 15	6 / 15
14	117	266	485	663	854	1024	234	532	970	1325	1707	2048	797	1455	1988	2561	3071	3348	1939	2651	3415	4095	4464	4457
	90	203	396	648	-	-	180	405	791	1296	-	-	608	1187	1944	-	-	-	1582	2593	-	-	-	-
	1.5 / 3	1.5 / 3.6	2.6 / 6.5	3.6 / 8.9	4.6 / 11.5	5.5 / 13.8	1.5 / 3	1.5 / 3.6	2.6 / 6.5	3.6 / 8.9	4.6 / 11.5	5.5 / 13.8	1.5 / 3.6	2.6 / 6.5	3.6 / 8.9	4.6 / 11.5	5.5 / 13.8	6 / 15	2.6 / 6.5	3.6 / 8.9	4.6 / 11.5	5.5 / 13.8	6 / 15	6 / 15
15	94	215	422	576	743	929	189	431	843	1153	1486	1857	646	1265	1729	2228	2786	3123	1687	2306	2971	3715	4164	4157
	73	165	322	527	-	-	146	329	643	1054	-	-	494	965	1581	-	-	-	1286	2108	-	-	-	-
	1.5 / 3	1.5 / 3.1	2.4 / 6.1	3.3 / 8.3	4.3 / 10.7	5.4 / 13.4	1.5 / 3	1.5 / 3.1	2.4 / 6.1	3.3 / 8.3	4.3 / 10.7	5.4 / 13.4	1.5 / 3.1	2.4 / 6.1	3.3 / 8.3	4.3 / 10.7	5.4 / 13.4	6 / 15	2.4 / 6.1	3.3 / 8.3	4.3 / 10.7	5.4 / 13.4	6 / 15	6 / 15
16	77	177	348	506	652	815	154	353	696	1012	1304	1631	530	1044	1518	1956	2446	2926	1392	2024	2608	3261	3902	3894
	60	136	265	434	648	-	121	271	530	868	1296	-	407	795	1303	1944	-	-	1060	1737	2593	-	-	-
	1.5 / 3	1.5 / 3	2.2 / 5.4	3.1 / 7.8	4 / 10	5 / 12.5	1.5 / 3	1.5 / 3	2.2 / 5.4	3.1 / 7.8	4 / 10	5 / 12.5	1.5 / 3	2.2 / 5.4	3.1 / 7.8	4 / 10	5 / 12.5	6 / 15	2.2 / 5.4	3.1 / 7.8	4 / 10	5 / 12.5	6 / 15	6 / 15
17	64	147	289	447	577	721	128	293	578	895	1153	1443	440	868	1342	1730	2164	2643	1157	1790	2307	2885	3524	3663
	50	113	221	362	540	-	101	226	442	724	1081	-	339	663	1086	1621	-	-	884	1448	2161	-	-	-
	1.5 / 3	1.5 / 3	1.9 / 4.8	2.9 / 7.3	3.8 / 9.5	4.7 / 11.8	1.5 / 3	1.5 / 3	1.9 / 4.8	2.9 / 7.3	3.8 / 9.5	4.7 / 11.8	1.5 / 3	1.9 / 4.8	2.9 / 7.3	3.8 / 9.5	4.7 / 11.8	5.8 / 14.4	1.9 / 4.8	2.9 / 7.3	3.8 / 9.5	4.7 / 11.8	5.8 / 14.4	6 / 15
18	53	123	243	398	514	642	106	246	486	797	1027	1285	368	728	1195	1541	1927	2355	971	1594	2054	2570	3139	3457
	42	95	186	305	455	-	85	191	372	610	910	-	286	558	915	1366	-	-	744	1220	1821	-	-	-
	1.5 / 3	1.5 / 3	1.7 / 4.3	2.8 / 6.9	3.6 / 8.9	4.5 / 11.2	1.5 / 3	1.5 / 3	1.7 / 4.3	2.8 / 6.9	3.6 / 8.9	4.5 / 11.2	1.5 / 3	1.7 / 4.3	2.8 / 6.9	3.6 / 8.9	4.5 / 11.2	5.4 / 13.6	1.7 / 4.3	2.8 / 6.9	3.6 / 8.9	4.5 / 11.2	5.4 / 13.6	6 / 15
19		104	206	339	460	576	90	208	411	679	920	1152	311	617	1018	1381	1727	2110	823	1358	1841	2303	2814	3273
		81	158	259	387	551	72	162	316	519	774	1102	243	475	778	1161	1653	-	633	1037	1548	2204	-	-
		1.5 / 3	1.5 / 3.8	2.5 / 6.3	3.4 / 8.5	4.2 / 10.6	1.5 / 3	1.5 / 3	1.5 / 3.8	2.5 / 6.3	3.4 / 8.5	4.2 / 10.6	1.5 / 3	1.5 / 3.8	2.5 / 6.3	3.4 / 8.5	4.2 / 10.6	5.2 / 12.9	1.5 / 3.8	2.5 / 6.3	3.4 / 8.5	4.2 / 10.6	5.2 / 12.9	6 / 15
20		88	176	290	415	519	76	177	351	580	829	1038	265	527	870	1244	1557	1902	702	1160	1659	2075	2536	3107
		69	136	222	332	473	62	139	271	445	664	945	208	407	667	996	1418	-	543	889	1327	1890	-	-
		1.5 / 3	1.5 / 3.4	2.3 / 5.6	3.2 / 8	4 / 10	1.5 / 3	1.5 / 3	1.5 / 3.4	2.3 / 5.6	3.2 / 8	4 / 10	1.5 / 3	1.5 / 3.4	2.3 / 5.6	3.2 / 8	4 / 10	4.9 / 12.2	1.5 / 3.4	2.3 / 5.6	3.2 / 8	4 / 10	4.9 / 12.2	6 / 15
22		65	131	216	325	427	55	131	261	433	650	855	196	392	649	976	1282	1567	522	866	1301	1710	2090	2820
		52	102	167	249	355	46	104	204	334	499	710	157	306	501	748	1065	1461	408	668	997	1420	1948	-
		1.5 / 3	1.5 / 3	1.9 / 4.7	2.8 / 7	3.6 / 9.1	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.7	2.8 / 7	3.6 / 9.1	1.5 / 3	1.5 / 3	1.9 / 4.7	2.8 / 7	3.6 / 9.1	4.5 / 11.1	1.5 / 3	1.9 / 4.7	2.8 / 7	3.6 / 9.1	4.5 / 11.1	6 / 15
24			99	165	249	356		99	199	330	498	713	148	298	496	747	1069	1313	397	661	995	1426	1750	2477
			79	129	192	273		80	157	257	384	547	121	236	386	576	820	1125	314	515	768	1094	1500	-
			1.5 / 3	1.6 / 3.9	2.3 / 5.9	3.3 / 8.3		1.5 / 3	1.5 / 3	1.6 / 3.9	2.3 / 5.9	3.3 / 8.3	1.5 / 3	1.5 / 3	1.6 / 3.9	2.3 / 5.9	3.3 / 8.3	4.1 / 10.2	1.5 / 3	1.6 / 3.9	2.3 / 5.9	3.3 / 8.3	4.1 / 10.2	5.8 / 14.4
26			77	129	194	279		76	154	257	388	557	114	231	386	583	836	1114	308	515	777	1115	1486	2104
			62	101	151	215		63	124	202	302	430	95	185	304	453	645	885	247	405	604	860	1180	2039
			1.5 / 3	1.5 / 3.3	2 / 5	2.8 / 7.1		1.5 / 3	1.5 / 3	1.5 / 3.3	2 / 5	2.8 / 7.1	1.5 / 3	1.5 / 3	1.5 / 3.3	2 / 5	2.8 / 7.1	3.8 / 9.4	1.5 / 3	1.5 / 3.3	2 / 5	2.8 / 7.1	3.8 / 9.4	5.3 / 13.3
28			61	102	154	221		59	121	203	308	443	88	182	305	462	664	918	242	407	616	886	1224	1809
			49	81	121	172		51	99	162	242	344	76	148	243	363	517	709	198	324	484	689	945	1633
			1.5 / 3	1.5 / 3	1.7 / 4.3	2.4 / 6.1		1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.3	2.4 / 6.1	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.3	2.4 / 6.1	3.4 / 8.4	1.5 / 3	1.5 / 3	1.7 / 4.3	2.4 / 6.1	3.4 / 8.4	4.9 / 12.3
30				82	124	179			97	163	248	357	70	145	245	372	536	741	193	326	496	714	988	1570
				66	98	140			80	132	197	280	62	121	198	295	420	576	161	263	393	560	768	1327
				1.5 / 3	1.5 / 3.7	2.1 / 5.3			1.5 / 3	1.5 / 3	1.5 / 3.7	2.1 / 5.3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.7	2.1 / 5.3	2.9 / 7.3	1.5 / 3	1.5 / 3	1.5 / 3.7	2.1 / 5.3	2.9 / 7.3	4.6 / 11.5

(1) For 2-ply, 3-ply or 4-ply beams; double, triple or quadruple Allowable Total Load and Allowable Live Load values. Minimum Required Bearing Lengths remain the same for any number of plies.

(2) 1¾ inch members deeper than 14 inches are to be used as multiple-member beams only.

- Total Load values are limited by shear, moment or deflection equal to L/240. Total Load values are the capacity of the beam in addition to its own weight.
- Live Load values are limited by deflection equal to L/360. Check the local building code for other deflection limits that may apply. Where a Live Load value is not shown, the Total Load value will control.
- Table values represent the most restrictive of simple or multiple span applications. Span is measured center to center of the supports. Analyze multiple span beams with the BC CALC® software if the length of any span is less than half the length of an adjacent span.
- Table values assume that lateral support is provided at each support and continuously along the compression edge of the beam.
- Table values for Minimum Required Bearing Lengths are based on the allowable compression design value perpendicular to grain for the beam and the Total Load value shown. Other design considerations, such as a weaker support material, may warrant longer bearing lengths. Table values assume that support is provided across the full width of the beam.
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® software.

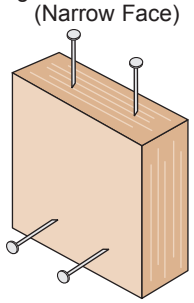
VERSA-LAM® Allowable Nail Spacing

Closest Allowable Nail Spacing VERSA-LAM® & VERSA-RIM® Products

Nail Size	Nailing Parallel to Glue Lines (Narrow Face)[1]								Nailing Perpendicular to Glue Lines (Wide Face)	
	VERSA-RIM® 1 1/16"		VERSA-LAM® 1.4 1800 Rimboard 1 5/16"		VERSA-LAM® 1¾" & 2⅝"		VERSA-LAM® 3½" & Wider		All Products	
	O.C. [inches]	End [inches]	O.C. [inches]	End [inches]	O.C. [inches]	End [inches]	O.C. [inches]	End [inches]	O.C. [inches]	End [inches]
8d Box	3	1½	3	1½	2	1	2	½	2	½
8d Common	4	3	3	2	3	2	2	1	2	1
10d & 12d Box	4	3	3	2	3	2	2	1	2	1
16d Box	4	3	3	2	3	2	2	1	2	1
10d & 12d Common	6	4	4	3	4	3	2	2	2	2
16d Sinker	6	4	4	3	4	3	2	2	2	2
16d Common	6	4	6	4	6	3	2	2	2	2

- Offset and stagger nail rows from floor sheathing and wall sole plate.
- Simpson Strong-Tie A35 and LPT4 connectors may be attached to the side VERSA-LAM®/VERSA-RIM®. Use nails as specified by Simpson Strong-Tie.

Nailing Parallel to Glue Lines (Narrow Face)



Nailing Perpendicular to Glue Lines (Wide Face)

Nailing Notes

1) For 1¾" thickness and greater, 2 rows of nails (such as for a metal strap) are allowed (use ½" minimum offset between rows and stagger nails).

VERSA-LAM® Design Values

Grade	Width [in]	Depth [in]	Weight [lb/ft]	Allowable Shear [lb]	Allowable Moment [ft-lb]	Moment of Inertia [in⁴]
1.7 2400	1½	3½	1.3	998	702	5.4
		5½	2.1	1568	1649	20.8
		7¼	2.8	2066	2779	47.6
		9¼	3.6	2636	4404	98.9
		9½	3.7	2708	4631	107.2
		11¼	4.3	3206	6374	178.0
		11⅞	4.6	3384	7059	209.3
		14	5.4	3990	9634	343.0
		16	6.2	4560	12397	512.0
2.0 2800	1¾	5½	2.5	1829	2245	24.3
		7¼	3.3	2411	3783	55.6
		9¼	4.2	3076	5994	115.4
		9½	4.3	3159	6304	125.0
		11¼	5.1	3741	8675	207.6
		11⅞	5.3	3948	9608	244.2
		14	6.3	4655	13112	400.2
		16	7.2	5320	16874	597.3
		18	8.1	5985	21079	850.5
2.0 2800	2⅝	5½	3.7	2743	3368	36.4
		7¼	4.9	3616	5675	83.4
		9¼	6.2	4613	8991	173.1
		9½	6.4	4738	9455	187.6
		11¼	7.6	5611	13013	311.5
		11⅞	8.0	5923	14412	366.3
		14	9.4	6983	19669	600.3
		16	10.8	7980	25311	896.0
		18	12.1	8978	31618	1275.8
2.0 3100	3½	5½	4.9	3658	4971	48.5
		7¼	6.5	4821	8377	111.1
		9¼	8.3	6151	13272	230.8
		9½	8.5	6318	13958	250.1
		11¼	10.1	7481	19210	415.3
		11⅞	10.7	7897	21275	488.4
		14	12.6	9310	29035	800.3
		16	14.4	10640	37364	1194.7
		18	16.2	11970	46674	1701.0
		20	18.0	13300	56952	2333.3
2.0 3100	5¼	5¼	7.1	5237	6830	63.3
		5½	7.4	5486	7457	72.8
		7¼	9.8	7232	12566	166.7
		9¼	12.5	9227	19908	346.3
		9½	12.8	9476	20937	375.1
		11¼	15.2	11222	28814	622.9
		11⅞	16.0	11845	31913	732.6
		14	18.9	13965	43552	1200.5
		16	21.6	15960	56046	1792.0
		18	24.3	17955	70011	2551.5
		20	27.0	19950	85428	3500.0
		24	32.4	23940	120549	6048.0

Grade	Width [in]	Depth [in]	Weight [lb/ft]	Allowable Shear [lb]	Allowable Moment [ft-lb]	Moment of Inertia [in⁴]
2.0 3100	7	9¼	16.6	12303	26544	461.7
		9½	17.1	12635	27916	500.1
		11¼	20.2	14963	38419	830.6
		11⅞	21.4	15794	42550	976.8
		14	25.2	18620	58069	1600.7
		16	28.8	21280	74728	2389.3
		18	32.4	23940	93348	3402.0
		20	36.0	26600	113904	4666.7
		24	43.2	31920	160732	8064.0
1.4 1800 (Rimboard & Stair Stringers)	1 5/16	9½	3.2	1870	3039	93.8
		11⅞	4.0	2338	4632	183.2
		14	4.7	2756	6322	300.1
		16	5.4	3150	8136	448.0
		18	6.1	3544	10163	637.9
		20	6.7	3938	12401	875.0

Design Property	VERSA-LAM® Beams		VERSA-LAM® Columns	VERSA-STUD®	Rimboard / Stair Stringers
	1¾" & 2⅝"	3½" & Wider			
Grade	2.0 2800	2.0 3100	1.7 2650	1.7 2400	1.4 1800
Modulus of Elasticity E(x 10^6 psi)[1]	2.0	2.0	1.7	1.7	1.4
Bending F_b (psi)[2][3]	2800	3100	2650	2400	1800
Horizontal Shear F_v (psi)[2][4]	285	285	285	285	225
Tension Parallel to Grain F_t (psi)[2][5]	2150	2150	1650	1650	1250
Compression Parallel to Grain $F_{c\,II}$ (psi)[2]	3000	3000	3000	3000	2500
Compression Perpendicular to Grain $F_c\perp$ (psi)[1][6]	750	750	750	750	525
Equivalent Specific Gravity for Fastener Design (SG)	0.5	0.5	0.5	0.5	0.5

1. This value cannot be adjusted for load duration.
2. This value is based upon a load duration of 100% and may be adjusted for other load durations.
3. Fiber stress bending value shall be multiplied by the depth factor, $(12/d)^{1/9}$ where d = member depth [in].
4. Stress applied perpendicular to the gluelines.
5. Tension value shall be multiplied by a length factor, $(4/L)^{1/8}$ where L = member length [ft]. Use L = 4 for members less than four feet long.
6. Stress applied parallel to the gluelines.

* Design properties are limited to dry conditions of use where the maximum moisture content of the material will not exceed 16%.

BUILDING CODE EVALUATION REPORT:

ICC ESR 1040 (IBC, IRC)

The same properties that make VERSA-LAM® beams great, also make them highly suitable for wood columns. In VERSA-LAM® columns, you'll find none of the deep checks, cracks or twists that can plague solid wood columns.

VERSA-LAM® 1.7 2650 Columns

Column Length [ft]	Allowable Axial Load (lb)																	
	3½" x 3½"			3½" x 5¼"			3½" x 7"			5¼" x 5¼"			5¼" x 7"			7" x 7"		
	100%	115%	125%	100%	115%	125%	100%	115%	125%	100%	115%	125%	100%	115%	125%	100%	115%	125%
4	14,700	16,090	16,930	22,070	24,165	25,430	29,450	32,240	33,920									
5	12,270	13,150	13,660	18,425	19,740	20,515	24,580	26,330	27,365									
6	10,080	10,650	10,980	15,140	15,995	16,495	20,195	21,335	22,000	33,070	36,220	38,110						
7	8,310	8,705	8,930	12,480	13,075	13,415	16,650	17,435	17,890	29,420	31,730	33,085						
8	6,930	7,205	7,370	10,405	10,825	11,070	13,880	14,440	14,760	25,875	27,570	28,565	34,525	36,790	38,115			
9	5,840	6,050	6,160	8,770	9,080	9,260	11,700	12,115	12,350	22,690	23,970	24,715	30,275	31,985	32,980			
10	4,980	5,135	5,225	7,480	7,715	7,850	9,975	10,290	10,470	19,930	20,920	21,495	26,600	27,920	28,685			
11	4,290	4,410	4,480	6,445	6,625	6,730	8,595	8,835	8,975	17,585	18,375	18,820	23,465	24,510	25,125			
12	3,730	3,825	3,880	5,600	5,745	5,830	7,475	7,665	7,775	15,590	16,220	16,585	20,805	21,650	22,130			
13	3,270	3,350	3,390	4,915	5,030	5,095	6,555	6,710	6,795	13,895	14,410	14,700	18,545	19,225	19,620			
14	2,890	2,950	2,990	4,340	4,435	4,490	5,790	5,915	5,990	12,450	12,870	13,115	16,615	17,180	17,500	33,260	34,825	35,740
15										11,210	11,560	11,760	14,960	15,425	15,695	30,325	31,645	32,395
16										10,135	10,430	10,600	13,525	13,920	14,150	27,720	28,835	29,490
17										9,205	9,455	9,600	12,285	12,620	12,810	25,415	26,375	26,920
18										8,395	8,610	8,735	11,205	11,495	11,655	23,370	24,195	24,665
19										7,685	7,870	7,975	10,260	10,505	10,645	21,550	22,270	22,670
20										7,060	7,220	7,310	9,420	9,635	9,760	19,925	20,550	20,910
21										6,505	6,645	6,725	8,680	8,870	8,980	18,475	19,020	19,330
22																17,165	17,650	17,925
23																15,990	16,420	16,660
24																14,930	15,310	15,525

Allowable Design Stresses		
	Modulus of Elasticity:	$E = 1.7 \times 10^6$ psi
Bending:	Parallel to Gluelines (Beam):	$F_b = 2650*(12/d)^{1/9}$ psi
	Perp to Gluelines (Plank):	$F_b = 2400*(12/d)^{1/9}$ psi
	Compression Parallel to Grain:	$F_{cII} = 3000$ psi
Compression Perpendicular to Grain:		
	Parallel to Gluelines (Beam):	$F_c+ = 750$ psi
	Perp to Gluelines (Plank):	$F_c+ = 450$ psi
	Tension Parallel to Grain:	$F_t = 1650$ psi

Notes

1) Table assumes that the column is braced at column ends only. Effective column length is equal to actual column length.
2) Allowable loads are based upon one-piece (solid) column members used in dry service conditions. Contact project's design professional of record or Boise Cascade EWP Engineering for multi-piece column design.
3) Allowable loads are based on an eccentricity value equal to 0.167 multiplied by either the column thickness or width (worst case).
4) Allowable loads are based on axial loaded columns using the design provisions of the National Design Specification for Wood Construction (NDS), 2005 edition. For side or other combined bending and axial loads, see provisions of NDS, 2005 edition.
5) Load values are not shown for short lengths due to loads exceeding common connector capacities. Load values are not shown for longer lengths if the controlling slenderness ratio exceeds 50 (per NDS).
6) Lateral loads (wind loading) are not considered in this table.

VERSA-STUD® 1.7 2400

Allowable Design Values

Product	Bending F_b [psi]	Compression Parallel to Grain F_c [psi]	Modulus of Elasticity E [psi]	Horizontal Shear F_v [psi]
VERSA-STUD® 1.7 2400	**2400**	**3000**	**1,700,000**	**285**
Douglas-Fir # 2 Grade	900	1350	1,600,000	180
Spruce Pine Fir (North) # 1 / 2 Grade	875	1150	1,400,000	135
Hem-Fir # 2 Grade	850	1300	1,300,000	150
Western Woods # 2 Grade	675	900	1,000,000	135

Notes:

- Design values are for loads applied to the narrow face of the studs.
- Dimension lumber values taken from 2005 Edition, *NDS Design Values for Wood Construction* (per 2006 IBC/IRC).
- For further information, please see VERSA-LAM® 1.7 2400 Wall Guide

VERSA-LAM® 1.7 2650 Design Values

Width [in]	Depth [in]	Weight [lb/ft]	Allowable Shear [lb]	Allowable Moment [lb-ft]	Moment of Inertia [in^4]
3½	3½	3.6	2328	1810	12.5
	4⅜	4.4	2909	2758	24.4
	5¼	5.3	3491	3892	42.2
	5½	5.6	3658	4250	48.5
	7	7.1	4655	6702	100.0
	8⅝	8.8	5736	9941	187.1
	9½	9.7	6318	11932	250.1
	11¼	11.4	7481	16421	415.3
	11⅞	12.1	7897	18187	488.4
	14	14.2	9310	24820	800.3
	16	16.3	10640	31940	1194.7
5¼	5¼	8.0	5237	5838	63.3
	7	10.7	6983	10053	150.1
5½	3½	5.6	2438	2575	19.7

Note: 5½" & 5¼" VERSA-LAM® 1.7 2650 may not be available in all markets, please contact local Boise Cascade EWP representative for product availability.

Bearing Length Requirements for VERSA-LAM® 1.7 2650 Beams			
Reaction [lb]	3½" VERSA-LAM® 1.7 2650 Bearing Length [in]	5¼" VERSA-LAM® 1.7 2650 Bearing Length [in]	5½" X 3½" VERSA-LAM® 1.7 2650 Bearing Length [in]
2,000	1.5"	1.5"	1.5"
4,000	1.5"	1.5"	1.6"
6,000	2.2"	1.5"	2.4"
8,000	3.0"	2.0"	3.2"
10,000	3.8"	2.5"	4.0"
12,000	4.5"	3.0"	4.8"
14,000	5.3"	3.5"	5.6"
16,000	6.0"	4.0"	6.4"
18,000	6.8"	4.5"	7.2"
20,000	7.6"	5.0"	8.0"
22,000	8.3"	5.5"	8.8"

Notes

- Minimum 1½" bearing length at end supports, 3½" bearing length at intermediate supports.
- Full beam width bearing required.
- Values based upon allowable compression perpendicular to grain of 750 lb/in^2 (450 lb/in^2 for 5½" x 3½").
- Bearing supports with lower compression values (dimension lumber plates) will require longer bearing lengths.

VERSA-LAM® 1.7 2650 Allowable Design Stresses

Widths	Bending F_b [psi](1)	Horizontal Shear F_v [psi]	Modulus of Elasticity (MOE) E [psi]	Tension Parallel to Grain F_t [psi](2)	Compression Parallel to Grain F_c [psi]	Compression Perpendicular to Grain F_c [psi]
3½", 5¼"	2650*	285*	1,700,000	1650	3000	750*

*For 5½" x 3½" rotated header (see page 14) ONLY, the following values apply:
Bending F_b = 2400 psi, Horizontal Shear F_v = 190 psi, Compression Perpendicular to Grain F_c = 450 lb/in^2

(1) Fiber stress bending value shall be multiplied by the depth factor, $(12/d)^{1/9}$ where d = member depth [in]

(2) Tension value shall be multiplied by a length factor, $(4/L)^{1/8}$ where L = member length [ft]

VERSA-LAM® 1.7 2650 (100% Load Duration)

3½"

KEY TO TABLE			
	Top Figure	-	Allowable Total Load [plf]
	Middle Figure	-	Allowable Live Load [plf]
	Bottom Figures	-	Minimum Required Bearing Length at End / Intermediate Supports [inches]

Span [ft]	Width = 3½" Depth = 3½"	4⅜"	5¼"	5½"	7"	8⅝"	9½"	11¼"	11⅞"	14"	16"
3	1466	1922	2423	2576	3597	4952	5822	7969	8907	13129	
	1166	-	-	-	-	-	-	-	-	-	
	1.5 / 3	1.5 / 3	1.5 / 3.5	1.5 / 3.7	2.1 / 5.1	2.8 / 7.1	3.3 / 8.3	4.6 / 11.4	5.1 / 12.7	7.5 / 18.8	
4	735	1358	1687	1786	2422	3211	3688	4777	5216	6968	9104
	492	961	1661	-	-	-	-	-	-	-	-
	1.5 / 3	1.5 / 3	1.5 / 3.2	1.5 / 3.4	1.9 / 4.6	2.5 / 6.1	2.8 / 7	3.6 / 9.1	4 / 10	5.3 / 13.3	6.9 / 17.4
5	374	734	1240	1354	1824	2375	2698	3409	3686	4740	5922
	252	492	850	978	-	-	-	-	-	-	-
	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.2	1.7 / 4.4	2.3 / 5.7	2.6 / 6.4	3.3 / 8.1	3.5 / 8.8	4.5 / 11.3	5.7 / 14.1
6	215	423	733	843	1463	1883	2126	2649	2849	3590	4387
	146	285	492	566	1166	-	-	-	-	-	-
	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.2	2.2 / 5.4	2.4 / 6.1	3 / 7.6	3.3 / 8.2	4.1 / 10.3	5 / 12.6
7	134	265	460	529	1087	1560	1753	2165	2321	2888	3482
	92	179	310	356	735	1374	-	-	-	-	-
	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.6	2.1 / 5.2	2.4 / 5.9	2.9 / 7.3	3.1 / 7.8	3.9 / 9.7	4.7 / 11.7
8	89	176	306	352	731	1234	1482	1830	1957	2414	2886
	62	120	208	239	492	921	1230	-	-	-	-
	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.7	2.3 / 5.7	2.8 / 7	3 / 7.5	3.7 / 9.3	4.4 / 11.1
9	61	122	213	246	511	961	1169	1585	1692	2074	2463
	43	84	146	168	346	647	864	1435	1687	-	-
	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.2	2 / 5.1	2.7 / 6.8	2.9 / 7.3	3.6 / 8.9	4.3 / 10.6
10		88	154	178	371	698	935	1302	1443	1817	2148
		62	106	122	252	471	630	1046	1230	-	-
		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	1.8 / 4.5	2.5 / 6.3	2.8 / 6.9	3.5 / 8.7	4.1 / 10.3
12			87	101	212	400	537	896	998	1365	1709
			62	71	146	273	364	605	712	1166	-
			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.1	2.1 / 5.2	2.3 / 5.8	3.2 / 7.9	3.9 / 9.9
14			53	61	131	249	335	560	660	999	1287
			39	45	92	172	230	381	448	735	1096
			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.8	1.8 / 4.5	2.7 / 6.8	3.5 / 8.7
16					85	164	221	372	438	724	982
					62	115	154	255	300	492	735
					1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	2.2 / 5.6	3 / 7.6
18					58	112	152	258	304	504	758
					43	81	108	179	211	346	516
					1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.4	2.7 / 6.6
20						80	108	185	219	364	548
						59	79	131	154	252	376
						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.6	2.1 / 5.4
22						58	79	136	161	270	408
						44	59	98	116	189	283
						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.4
24							59	102	121	204	310
							46	76	89	146	218
							1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.7
26								78	93	158	241
								60	70	115	171
								1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.2
28								60	72	124	189
								48	56	92	137
								1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3
30									56	98	151
									46	75	111
									1.5 / 3	1.5 / 3	1.5 / 3

- Total Load values are limited by shear, moment or deflection equal to L/240. Total Load values are the capacity of the beam in addition to its own weight.
- Live Load values are limited by deflection equal to L/360. Check the local building code for other deflection limits that may apply.
- Where a Live Load value is not shown, the Total Load value will control.
- Table values represent the most restrictive of simple or multiple span applications. Span is measured center to center of the supports. Analyze multiple span beams with the BC CALC® software if the length of any span is less than half the length of an adjacent span.
- Table values assume that lateral support is provided at each support and continuously along the compression edge of the beam.
- Table values for Minimum Required Bearing Lengths are based on the allowable compression design value perpendicular to grain for the beam and the Total Load value shown. Other design considerations, such as a weaker support material, may warrant longer bearing lengths. Table values assume that support is provided across the full width of the beam.
- For double 3½" beams, multiply allowable total load and allowable live load values by the number of plies. Minimum required bearing lengths remain the same for any number of plies.
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® software.

VERSA-LAM® 1.7 2650 Floor Load Tables

VERSA-LAM® 1.7 2650 (100% Load Duration)

5¼", 5½"

KEY TO TABLE			
	Top Figure	-	Allowable Total Load [plf]
	Middle Figure	-	Allowable Live Load [plf]
	Bottom Figures	-	Minimum Required Bearing Length at End / Intermediate Supports [inches]

Span [ft]	Width = 5¼" Depth = 5½"	Width = 5¼" Depth = 7"	Width = 5½" Depth = 3½" (Rotate 3½" x 5½" Header Use this column)
3	3635	5395	1534
	-	-	-
	1.5 / 3.5	2.1 / 5.1	1.5 / 3
4	2531	3632	1099
	2491	-	773
	1.5 / 3.2	1.9 / 4.6	1.5 / 3
5	1860	2737	588
	1276	-	396
	1.5 / 3	1.7 / 4.4	1.5 / 3
6	1099	2194	338
	738	1750	229
	1.5 / 3	1.7 / 4.2	1.5 / 3
7	689	1631	211
	465	1102	144
	1.5 / 3	1.5 / 3.6	1.5 / 3
8	459	1097	139
	311	738	97
	1.5 / 3	1.5 / 3	1.5 / 3
9	320	767	96
	219	518	68
	1.5 / 3	1.5 / 3	1.5 / 3
10	231	556	69
	159	378	49
	1.5 / 3	1.5 / 3	1.5 / 3
12	130	317	
	92	219	
	1.5 / 3	1.5 / 3	
14	79	196	
	58	138	
	1.5 / 3	1.5 / 3	
16	50	128	
	39	92	
	1.5 / 3	1.5 / 3	
18		87	
		65	
		1.5 / 3	
20		60	
		47	
		1.5 / 3	
22			
24			
26			
28			
30			

- Total Load values are limited by shear, moment or deflection equal to L/240. Total Load values are the capacity of the beam in addition to its own weight.
- Live Load values are limited by deflection equal to L/360. Check the local building code for other deflection limits that may apply.
- Where a Live Load value is not shown, the Total Load value will control.
- Table values represent the most restrictive of simple or multiple span applications. Span is measured center to center of the supports. Analyze multiple span beams with the BC CALC® software if the length of any span is less than half the length of an adjacent span.
- Table values assume that lateral support is provided at each support and continuously along the compression edge of the beam.
- Table values for Minimum Required Bearing Lengths are based on the allowable compression design value perpendicular to grain for the beam and the Total Load value shown. Other design considerations, such as a weaker support material, may warrant longer bearing lengths. Table values assume that support is provided across the full width of the beam.
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® software.

3½"

VERSA-LAM® 1.7 2650 (115% Load Duration)

KEY TO TABLE			
	Top Figure	-	Allowable Total Load [plf]
	Middle Figure	-	Allowable Live Load [plf]
	Bottom Figures	-	Minimum Required Bearing Length at End / Intermediate Supports [inches]

Span [ft]	Width = 3½" Depth =										
	3½"	4⅜"	5¼"	5½"	7"	8⅝"	9½"	11¼"	11⅞"	14"	16"
3	1687	2211	2788	2963	4137	5696	6697	9166	10245	15101	
	-	-	-	-	-	-	-	-	-	-	
	1.5 / 3	1.5 / 3.2	1.6 / 4	1.7 / 4.2	2.4 / 5.9	3.3 / 8.1	3.8 / 9.6	5.2 / 13.1	5.9 / 14.7	8.6 / 21.6	
4	981	1562	1941	2055	2786	3694	4243	5495	6000	8016	10472
	738	1442	-	-	-	-	-	-	-	-	-
	1.5 / 3	1.5 / 3	1.5 / 3.7	1.6 / 3.9	2.1 / 5.3	2.8 / 7.1	3.2 / 8.1	4.2 / 10.5	4.6 / 11.5	6.1 / 15.3	8 / 20
5	500	980	1427	1558	2099	2732	3104	3922	4241	5453	6813
	378	738	1276	1467	-	-	-	-	-	-	-
	1.5 / 3	1.5 / 3	1.5 / 3.4	1.5 / 3.7	2 / 5	2.6 / 6.5	3 / 7.4	3.7 / 9.4	4.1 / 10.1	5.2 / 13	6.5 / 16.3
6	288	565	979	1080	1683	2167	2446	3048	3278	4130	5047
	219	427	738	849	-	-	-	-	-	-	-
	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.1	1.9 / 4.8	2.5 / 6.2	2.8 / 7	3.5 / 8.7	3.8 / 9.4	4.7 / 11.8	5.8 / 14.5
7	180	354	614	707	1251	1795	2018	2491	2670	3323	4007
	138	269	465	534	1102	-	-	-	-	-	-
	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.2	2.4 / 6	2.7 / 6.8	3.3 / 8.3	3.6 / 8.9	4.4 / 11.1	5.4 / 13.4
8	119	236	410	472	956	1420	1706	2106	2252	2779	3321
	92	180	311	358	738	1381	-	-	-	-	-
	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.7	2.2 / 5.4	2.6 / 6.5	3.2 / 8.1	3.5 / 8.6	4.3 / 10.6	5.1 / 12.7
9	83	164	286	330	684	1120	1346	1824	1947	2387	2835
	65	127	219	251	518	970	1296	-	-	-	-
	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.8	2.3 / 5.8	3.1 / 7.9	3.4 / 8.4	4.1 / 10.3	4.9 / 12.2
10	59	119	207	239	497	906	1088	1499	1661	2092	2472
	47	92	159	183	378	707	945	-	-	-	-
	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.4	2.1 / 5.2	2.9 / 7.2	3.2 / 8	4 / 10	4.7 / 11.9
12		67	118	136	285	537	719	1038	1150	1571	1968
		53	92	106	219	409	547	908	1068	-	-
		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.1	1.7 / 4.2	2.4 / 6	2.7 / 6.6	3.6 / 9.1	4.5 / 11.3
14		40	72	83	177	335	449	751	842	1151	1483
		34	58	67	138	258	344	572	672	1102	-
		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.1	2 / 5.1	2.3 / 5.7	3.1 / 7.8	4 / 10
16			47	54	116	221	298	499	589	878	1132
			39	45	92	173	231	383	450	738	1102
			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.6 / 3.9	1.8 / 4.6	2.7 / 6.8	3.5 / 8.7
18					79	153	206	347	410	677	891
					65	121	162	269	316	518	774
					1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.1	1.5 / 3.6	2.4 / 5.9	3.1 / 7.8
20					56	109	148	250	295	490	718
					47	88	118	196	231	378	564
					1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.8	2.8 / 7
22					40	80	109	185	219	364	549
					35	66	89	147	173	284	424
					1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.6 / 4	2.4 / 5.9
24						59	81	140	166	277	419
						51	68	113	133	219	326
						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.3	2 / 5
26						45	62	108	128	215	326
						40	54	89	105	172	257
						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.2
28							48	84	100	169	258
							43	71	84	138	206
							1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.7
30								66	79	135	207
								58	68	112	167
								1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.2

- Total Load values are limited by shear, moment or deflection equal to L/180. Total Load values are the capacity of the beam in addition to its own weight.
- Live Load values are limited by deflection equal to L/240. Check the local building code for other deflection limits that may apply.
- Where a Live Load value is not shown, the Total Load value will control.
- Table values represent the most restrictive of simple or multiple span applications. Span is measured center to center of the supports. Analyze multiple span beams with the BC CALC® software if the length of any span is less than half the length of an adjacent span.
- Table values assume that lateral support is provided at each support and continuously along the compression edge of the beam.
- Table values for Minimum Required Bearing Lengths are based on the allowable compression design value perpendicular to grain for the beam and the Total Load value shown. Other design considerations, such as a weaker support material, may warrant longer bearing lengths. Table values assume that support is provided across the full width of the beam.
- For double 3½" beams, multiply allowable total load and allowable live load values by the number of plies. Minimum required bearing lengths remain the same for any number of plies.
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® software.

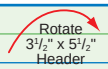
VERSA-LAM® 1.7 2650 Roof Snow Load Tables

5¼", 5½"

VERSA-LAM® 1.7 2650 (115% Load Duration)

KEY TO TABLE			
	Top Figure	-	Allowable Total Load [plf]
	Middle Figure	-	Allowable Live Load [plf]
	Bottom Figures	-	Minimum Required Bearing Length at End / Intermediate Supports [inches]

Span [ft]	Width = 5¼"		Width = 5½"
	Depth =		Depth =
	5¼"	7"	3½"
3	4181	6206	1765
	-	-	-
	1.6 / 4	2.4 / 5.9	1.5 / 3
4	2912	4179	1264
	-	-	1160
	1.5 / 3.7	2.1 / 5.3	1.5 / 3
5	2140	3149	786
	1913	-	594
	1.5 / 3.4	2 / 5	1.5 / 3
6	1468	2525	453
	1107	-	344
	1.5 / 3	1.9 / 4.8	1.5 / 3
7	922	1877	283
	697	1653	216
	1.5 / 3	1.7 / 4.2	1.5 / 3
8	615	1434	188
	467	1107	145
	1.5 / 3	1.5 / 3.7	1.5 / 3
9	429	1026	130
	328	778	102
	1.5 / 3	1.5 / 3	1.5 / 3
10	311	745	93
	239	567	74
	1.5 / 3	1.5 / 3	1.5 / 3
12	177	427	52
	138	328	43
	1.5 / 3	1.5 / 3	1.5 / 3
14	108	265	
	87	207	
	1.5 / 3	1.5 / 3	
16	70	174	
	58	138	
	1.5 / 3	1.5 / 3	
18	47	119	
	41	97	
	1.5 / 3	1.5 / 3	
20		84	
		71	
		1.5 / 3	
22		60	
		53	
		1.5 / 3	
24		44	
		41	
		1.5 / 3	
26			
28			
30			



- Total Load values are limited by shear, moment or deflection equal to L/180. Total Load values are the capacity of the beam in addition to its own weight.
- Live Load values are limited by deflection equal to L/240. Check the local building code for other deflection limits that may apply.
- Where a Live Load value is not shown, the Total Load value will control.
- Table values represent the most restrictive of simple or multiple span applications. Span is measured center to center of the supports. Analyze multiple span beams with the BC CALC® software if the length of any span is less than half the length of an adjacent span.
- Table values assume that lateral support is provided at each support and continuously along the compression edge of the beam.
- Table values for Minimum Required Bearing Lengths are based on the allowable compression design value perpendicular to grain for the beam and the Total Load value shown. Other design considerations, such as a weaker support material, may warrant longer bearing lengths. Table values assume that support is provided across the full width of the beam.
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® software.

VERSA-LAM® 1.7 2650 (125% Load Duration)

3½"

KEY TO TABLE			
	Top Figure	-	Allowable Total Load [plf]
	Middle Figure	-	Allowable Live Load [plf]
	Bottom Figures	-	Minimum Required Bearing Length at End / Intermediate Supports [inches]

Span [ft]	Width = 3½" Depth =										
	3½"	4⅜"	5¼"	5½"	7"	8⅝"	9½"	11¼"	11⅞"	14"	16"
3	1834	2403	3031	3222	4498	6192	7280	9964	11136		
	1750	-	-	-	-	-	-	-	-		
	1.5 / 3	1.5 / 3.4	1.7 / 4.3	1.8 / 4.6	2.6 / 6.4	3.5 / 8.9	4.2 / 10.4	5.7 / 14.3	6.4 / 15.9		
4	981	1699	2111	2234	3029	4016	4613	5974	6523	8714	11384
	738	1442	-	-	-	-	-	-	-	-	-
	1.5 / 3	1.5 / 3.2	1.6 / 4	1.7 / 4.3	2.3 / 5.8	3.1 / 7.7	3.5 / 8.8	4.6 / 11.4	5 / 12.4	6.7 / 16.6	8.7 / 21.7
5	500	980	1552	1694	2282	2971	3375	4264	4610	5928	7407
	378	738	1276	1467	-	-	-	-	-	-	-
	1.5 / 3	1.5 / 3	1.5 / 3.7	1.6 / 4	2.2 / 5.5	2.8 / 7.1	3.2 / 8.1	4.1 / 10.2	4.4 / 11	5.7 / 14.1	7.1 / 17.7
6	288	565	979	1126	1830	2356	2660	3314	3564	4491	5487
	219	427	738	849	1750	-	-	-	-	-	-
	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.2	2.1 / 5.3	2.7 / 6.8	3.1 / 7.6	3.8 / 9.5	4.1 / 10.2	5.1 / 12.9	6.3 / 15.7
7	180	354	614	707	1361	1952	2194	2709	2904	3613	4356
	138	269	465	534	1102	-	-	-	-	-	-
	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.6	2.6 / 6.5	2.9 / 7.3	3.6 / 9.1	3.9 / 9.7	4.8 / 12.1	5.8 / 14.6
8	119	236	410	472	977	1545	1855	2290	2449	3022	3611
	92	180	311	358	738	1381	1845	-	-	-	-
	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.7	2.4 / 5.9	2.8 / 7.1	3.5 / 8.8	3.8 / 9.4	4.6 / 11.6	5.5 / 13.8
9	83	164	286	330	684	1219	1463	1984	2117	2596	3083
	65	127	219	251	518	970	1296	-	-	-	-
	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	2.1 / 5.3	2.5 / 6.3	3.4 / 8.6	3.7 / 9.1	4.5 / 11.2	5.3 / 13.3
10	59	119	207	239	497	934	1184	1631	1807	2275	2689
	47	92	159	183	378	707	945	1569	-	-	-
	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.5	2.3 / 5.7	3.1 / 7.8	3.5 / 8.7	4.4 / 10.9	5.2 / 12.9
12		67	118	136	285	537	719	1129	1251	1709	2141
		53	92	106	219	409	547	908	1068	-	-
		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.1	1.7 / 4.2	2.6 / 6.5	2.9 / 7.2	3.9 / 9.8	4.9 / 12.3
14		40	72	83	177	335	449	751	884	1252	1613
		34	58	67	138	258	344	572	672	1102	-
		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.1	2 / 5.1	2.4 / 6	3.4 / 8.4	4.3 / 10.9
16			47	54	116	221	298	499	589	955	1231
			39	45	92	173	231	383	450	738	1102
			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.6 / 3.9	1.8 / 4.6	3 / 7.4	3.8 / 9.5
18					79	153	206	347	410	677	970
					65	121	162	269	316	518	774
					1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.1	1.5 / 3.6	2.4 / 5.9	3.4 / 8.4
20					56	109	148	250	295	490	736
					47	88	118	196	231	378	564
					1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.8	2.9 / 7.2
22					40	80	109	185	219	364	549
					35	66	89	147	173	284	424
					1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.6 / 4	2.4 / 5.9
24						59	81	140	166	277	419
						51	68	113	133	219	326
						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.3	2 / 5
26						45	62	108	128	215	326
						40	54	89	105	172	257
						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.2
28							48	84	100	169	258
							43	71	84	138	206
							1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.7
30								66	79	135	207
								58	68	112	167
								1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.2

- Total Load values are limited by shear, moment or deflection equal to L/180. Total Load values are the capacity of the beam in addition to its own weight.
- Live Load values are limited by deflection equal to L/240. Check the local building code for other deflection limits that may apply.
- Where a Live Load value is not shown, the Total Load value will control.
- Table values represent the most restrictive of simple or multiple span applications. Span is measured center to center of the supports. Analyze multiple span beams with the BC CALC® software if the length of any span is less than half the length of an adjacent span.
- Table values assume that lateral support is provided at each support and continuously along the compression edge of the beam.
- Table values for Minimum Required Bearing Lengths are based on the allowable compression design value perpendicular to grain for the beam and the Total Load value shown. Other design considerations, such as a weaker support material, may warrant longer bearing lengths. Table values assume that support is provided across the full width of the beam.
- For double 3½" beams, multiply allowable total load and allowable live load values by the number of plies. Minimum required bearing lengths remain the same for any number of plies.
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® software.

VERSA-LAM®1.7 2650 Roof Non-Snow Load Tables

5¼", 5½"

VERSA-LAM® 1.7 2650 (125% Load Duration)

KEY TO TABLE			
	Top Figure	-	Allowable Total Load [plf]
	Middle Figure	-	Allowable Live Load [plf]
	Bottom Figures	-	Minimum Required Bearing Length at End / Intermediate Supports [inches]

Span [ft]	Width = 5¼"		Width = 5½"	Rotate 3½" x 5½" Header
	Depth =		Depth =	Use this column
	5¼"	7"	3½"	
3	4546	6747	1919	
	-	-	-	
	1.7 / 4.3	2.6 / 6.4	1.5 / 3	
4	3166	4543	1375	
	-	-	1160	
	1.6 / 4	2.3 / 5.8	1.5 / 3	
5	2327	3423	786	
	1913	-	594	
	1.5 / 3.7	2.2 / 5.5	1.5 / 3	
6	1468	2746	453	
	1107	2625	344	
	1.5 / 3	2.1 / 5.3	1.5 / 3	
7	922	2041	283	
	697	1653	216	
	1.5 / 3	1.8 / 4.6	1.5 / 3	
8	615	1466	188	
	467	1107	145	
	1.5 / 3	1.5 / 3.7	1.5 / 3	
9	429	1026	130	
	328	778	102	
	1.5 / 3	1.5 / 3	1.5 / 3	
10	311	745	93	
	239	567	74	
	1.5 / 3	1.5 / 3	1.5 / 3	
12	177	427	52	
	138	328	43	
	1.5 / 3	1.5 / 3	1.5 / 3	
14	108	265		
	87	207		
	1.5 / 3	1.5 / 3		
16	70	174		
	58	138		
	1.5 / 3	1.5 / 3		
18	47	119		
	41	97		
	1.5 / 3	1.5 / 3		
20	32	84		
	30	71		
	1.5 / 3	1.5 / 3		
22	22	60		
	-	53		
	1.5 / 3	1.5 / 3		
24	15	44		
	-	41		
	1.5 / 3	1.5 / 3		
26	10	32		
	-	32		
	1.5 / 3	1.5 / 3		
28	7	24		
	-	-		
	1.5 / 3	1.5 / 3		
30	4	17		
	-	-		
	1.5 / 3	1.5 / 3		

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- Live Load values are limited by deflection equal to L/240. Check the local building code for other deflection limits that may apply.
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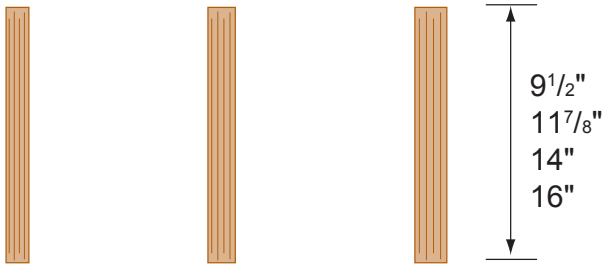
Versa-Lam Rimboard Product Profiles - Western



1 5/16" VERSA-LAM® 1.4 1800*

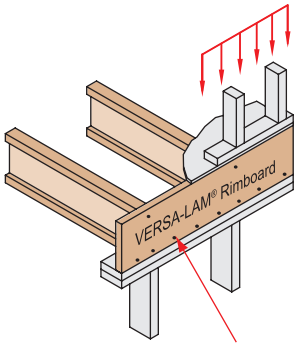
1 1/2" VERSA-LAM® 1.7 2400*

1 3/4" VERSA-LAM® 2.0 2800*

*18 inch and 20 inch deep rimboard are special order products, contact local supplier or Boise representative for product availability.

Perpendicular

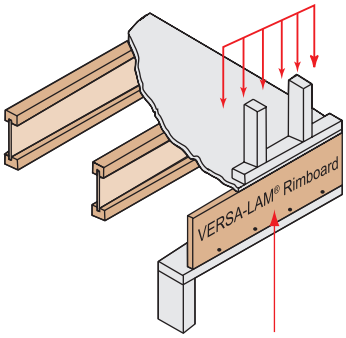
See chart for vertical load capacity.



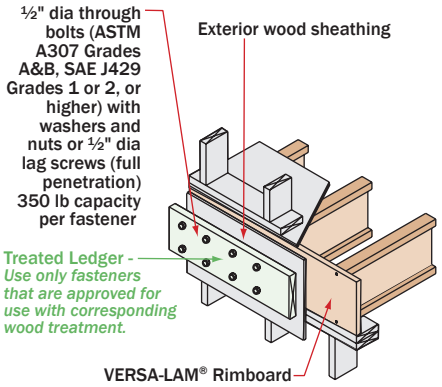
When used for shear transfer, nail to bearing plate with the same nailing capacity as required by the horizontal diaphragm schedule.

Parallel

See chart for vertical load capacity.



When used for shear transfer, nail to bearing plate with the same nailing capacity as required by the horizontal diaphragm schedule.



Design of moisture control by others (only structural components shown above)

VERSA-LAM® Rimboard Properties

Product	Type	Vertical Load Capacity				Maximum Floor Diaphragm Lateral Capacity [lb/ft]	Specific Gravity Equivalency for Lateral Fastener Design	Allowable Design Values			
		Uniform [plf]		Point [lb]							
		16" Depth & Less	18" & 20" Depth	16" Depth & Less	18" & 20" Depth			Flexural Stress [lb/in²]	Modulus of Elasticity [lb/in²]	Horizontal Shear [lb/in²]	Compression Perpendicular to Grain [lb/in²]
1 5/16" VERSA-LAM® 1.4 1800 (1)	LVL	6000	5450	4450	4450	Permitted per building code for all nominal 2" thick framing blocked and unblocked diaphragms (4" nail spacing & greater)	0.5	1800	1,400,000	225	525
1½" VERSA-LAM® 1.7 2400 (1)	LVL	4250	3700	3700	3500	Permitted per building code for all nominal 2" thick framing blocked and unblocked diaphragms (4" nail spacing & greater)	0.5	2400	1,700,000	285	750
1¾" VERSA-LAM® 2.0 2800 (1)	LVL	5700	4300	4300	3900	Permitted per building code for all nominal 2" thick framing blocked and unblocked diaphragms (4" nail spacing & greater)	0.5	2800	2,000,000	285	750

Product	Closest Allowable Nail Spacing - Narrow Face [in]					
	8d Box	8d Common	10d & 12d Box	16d Box	10d, 12d Common & 16d Sinker	16d Common
1 5/16" & 1½" VERSA-LAM® (1)	3	3	3	3	4	6
1¾" VERSA-LAM®	2	3	3	3	4	6

Notes

1. Per ICC ESR-1040.
2. See Performance Rated Rim Boards, APA EWS #W345J for further product information.
3. See ICC ESR-1053 for further product information.

- Not all products and depths may be available, check with Boise Cascade representative for product availability.

VERSA-LAM® 1.4 1800 Stair Stringer

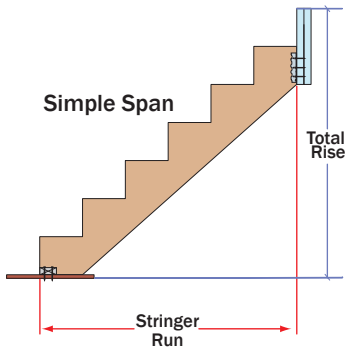
1 5/16" VERSA-LAM® 1.4 1800 Allowable Stair Stringer Spans

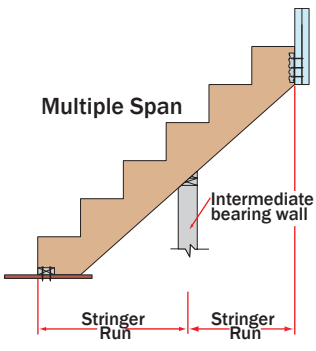
Material Depth	36" Tread Width				42" Tread Width		44" Tread Width		48" Tread Width	
	2 Stringers		3 Stringers		3 Stringers		3 Stringers		3 Stringers	
	Stringer Run	Total Rise	Stringer Run	Total Rise	Stringer Run	Total Rise	Stringer Run	Total Rise	Stringer Run	Total Rise
40 PSF Live Load / 12 PSF Dead Load										
9½"	5'-1"	5'-2"	5'-9"	5'-9"	5'-6"	5'-6"	5'-5"	5'-6"	5'-3"	5'-4"
11⅞"	8'-7"	8'-3"	9'-9"	9'-4"	9'-3"	8'-11"	9'-2"	8'-9"	8'-11"	8'-7"
14"	11'-8"	11'-1"	13'-4"	12'-6"	12'-8"	11'-11"	12'-6"	11'-9"	12'-2"	11'-5"
16"	14'-8"	13'-8"	16'-8"	15'-6"	15'-10"	14'-9"	15'-8"	14'-7"	15'-3"	14'-2"
100 PSF Live Load / 12 PSF Dead Load										
9½"	3'-9"	4'-0"	4'-3"	4'-6"	4'-1"	4'-4"	4'-0"	4'-3"	3'-11"	4'-2"
11⅞"	6'-5"	6'-4"	7'-3"	7'-1"	6'-11"	6'-10"	6'-10"	6'-9"	6'-8"	6'-7"
14"	8'-9"	8'-5"	9'-11"	9'-6"	9'-6"	9'-1"	9'-4"	8'-11"	9'-1"	8'-9"
16"	10'-11"	10'-5"	12'-5"	11'-9"	11'-10"	11'-2"	11'-8"	11'-1"	11'-4"	10'-9"

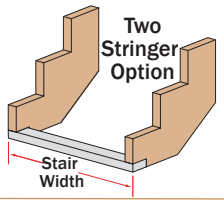
SPAN/LOADING NOTES

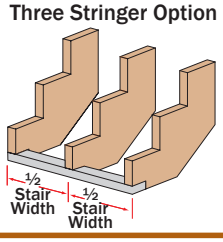
- Deflection limited to L/360 live load & L/240 total load.
- Spans based upon a stair limits of 8" max rise and 9" min. run, verify actual required minimum riser and tread width as required by local building code and amendments.
- Contact Boise EWP Engineering for design assistance on other stair stringer applications and/or loading.
- Consult governing building code and/or local building official for proper live load per application.
- Building codes typically restrict stair widths to 44" or greater for stairways serving an occupant load of 50 or less.
- Maximum total rise between floors is 12'-0" per building codes.

SPAN TABLE DETAILS

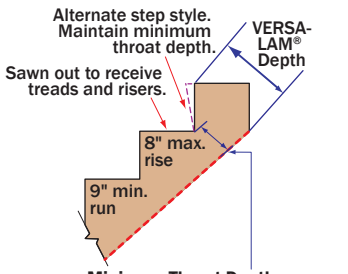






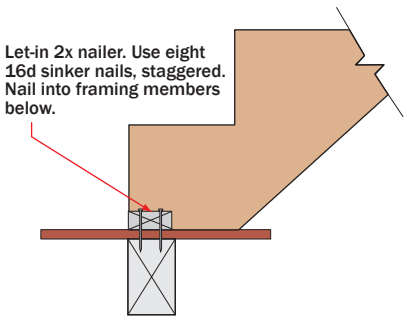


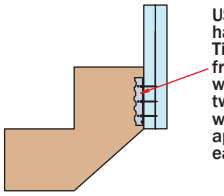
ALLOWABLE CUT DIMENSIONS



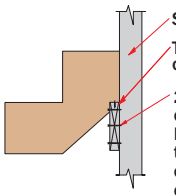
Minimum Throat Depth
3½" min. for 9½" VERSA-LAM®
5⅞" min. for 11⅞" VERSA-LAM®
8" min. for 14" VERSA-LAM®
10" min. for 16" VERSA-LAM®

CONNECTION DETAILS - For 40 PSF Live Load Applications Only *(Consult design professional of record for connections of 100 PSF applications.)*





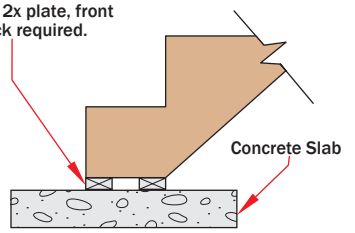
USP CSHL/R-TZ stringer hanger or Simpson Strong Tie A35 or USP MPA1 framing anchor. Fasten with 8d x 1½" nails. Use two framing anchors with all 14" VERSA-LAM® applications, stagger on each side to limit splitting.



Studs at 16" on-center maximum.

Toenail stringer to ledger with one 8d nail per side.

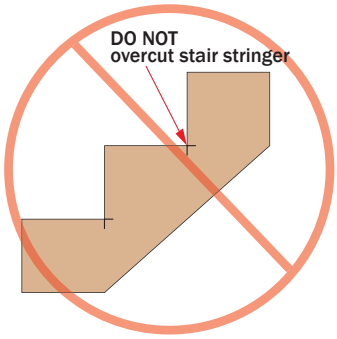
2x8 min ledger nailed with three 16d common nails per stud. For SPF & Hem-fir framing with runs longer than 10'-9", 2x10 with four 16d common nails required. Alternate connection: three ¼" x 4" (min) lag screws per stud, all framing.



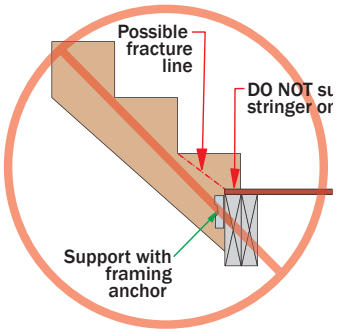
Connect each stringer to 2x plates with two 10d or 16d nails, toe-nailed to each 2x plate.
Connect each 2x plate to concrete with three ½" diameter x 3" long anchor bolts.

When installing treated wood, use only connectors/ fasteners that are approved for use with the corresponding wood treatment.

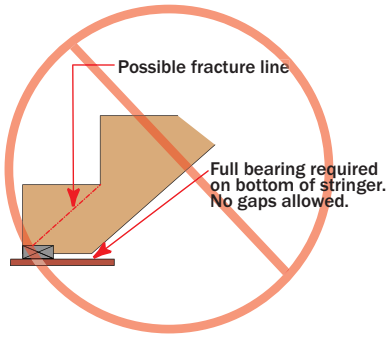
DO NOT overcut stair stringer



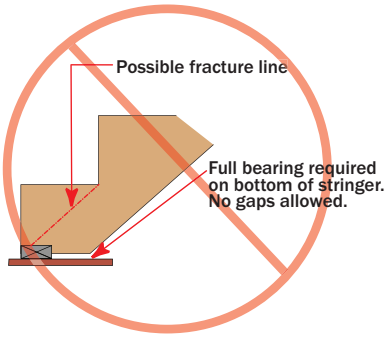
DO NOT support stringer on notch



DO NOT support stringer on let-in nailer only



DO NOT use shallow header depths



CONSTRUCTION NOTES

- STAIR STRINGERS ARE EXTREMELY UNSTABLE, USE CAUTION WHEN INSTALLING TREADS. DO NOT ALLOW WORKERS ON STAIRS UNTIL EACH END OF EACH STRINGER HAS BEEN PROPERLY ATTACHED AND TEMPORARY TREADS HAVE BEEN INSTALLED.
- Use subfloor adhesive on all contact surfaces to minimize squeaks.
- Adequate moisture barrier required between stringers and concrete.
- Keep product as dry as possible during construction.
- All wood splits when significant stress is induced across the grain - DO NOT apply significant side impact load (e.g., hammer) to remaining triangle sections of stringers.
- When installing treated wood, use only connectors/fasteners that are approved for use with the corresponding wood treatment.
- Use fasteners no larger than 8d box nail or #8 wood screw for attaching standard treads, space no closer than 3" on-center.

$1^{5}/_{16}$" VERSA-LAM® 1.4 1800 Allowable Design Values

Modulus of Elasticity E [psi]	Bending F_b [psi]	Horizontal Shear F_v [psi]	Compression Parallel to Grain F_c [psi]	Compression Perpendicular to Grain F_c [psi]	Tension Parallel to Grain F_t [psi]
1,400,000	1800	225	2500	525	1250

If in doubt ask! For the closest Boise Cascade EWP distributor/support center, call 1-800-232-0788

Boise Cascade has a proven track record of providing quality wood products and a nationwide building materials distribution network for our customers, helping them to enhance their own businesses.

Boise Cascade Engineered Wood Products build better homes with stronger, stiffer floors using only wood purchased in compliance with a number of green building programs. Take a moment to view our sustainability certification site at http://www.bc.com/sustainability/certification.html or view our green brochure at http://www.bc.com/wood/ewp/Boise_EWP_Green.html.

Boise Cascade Engineered Wood Products throughout North America can now be ordered FSC® Chain-of-Custody (COC) certified, enabling homebuilders to achieve LEED® points under U.S. Green Building Council® residential and commercial green building programs including LEED for Homes and LEED for New Construction. Boise Cascade Engineered Wood Products are available as PEFC® Chain-of-Custody certified, SFI® Chain-of-Custody certified and SFI Fiber-Sourcing certified, as well as NAHB Research Center Green Approved, enabling homebuilders to also obtain green building points through the National Green Building Standard.

Lifetime Guaranteed Quality and Performance

Boise Cascade warrants its BCI® Joist, VERSA-LAM®, and ALLJOIST® products to comply with our specifications, to be free from defects in material and workmanship, and to meet or exceed our performance specifications for the normal and expected life of the structure when correctly stored, installed and used according to our Installation Guide.

For information about Boise Cascade's engineered wood products, including sales terms and conditions, warranties and disclaimers,

visit our website at www.BCewp.com

Your Dealer is:

If no dealer is listed, call 1-800-232-0788