



**Metsä**

# **Kerto<sup>®</sup> LVL**

## **S-beam**

USA VERSION

Beams, Headers, Rafters and Columns  
for Floor and Roof Applications



# **LAMINATED VENEER LUMBER**

# Kerto LVL S-beam Laminated Veneer Lumber



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## Kerto LVL S-beam Main Applications

- Beams
- Headers
- Floor joists
- Roof rafters
- Columns
- Studs
- Truss Chords
- Tall wall and long length framing
- Components for modular construction
- Industrial and commercial applications
- Components for manufactured housing
- Stair stringers
- Concrete formwork

## Kerto LVL S-beam Design Properties

Flexural Stress (Beam)	Flexural Stress (Plank)	Tension Parallel to Grain	Compression Parallel to Grain	Compression Perpendicular to Grain $F_c^3$ (psi)		Horizontal Shear $F_v$ (psi)		True MOE <sup>3,6</sup> (psi)	
				Beam	Plank	Beam	Plank	Beam	Plank
$F_b^{2,4}$ (psi)	$F_b$ (psi)	$F_t^5$ (psi)	$F_c$ (psi)	Directions:		Directions:		Directions:	
2900	3400	2300	2700	840	535	320	150	2.0x10 <sup>6</sup>	2.0x10 <sup>6</sup>

### Notes

1. Allowable design stresses are based on covered dry conditions of use.
2. The tabulated flexural stresses are based on loads of a normal duration and a referenced depth of 12 inches. For other depths, the tabulated flexural stress must be adjusted by a depth factor adjustment of  $(12/d)^{0.15}$ . For depths less than 3-1/2" inches, use the value for 3-1/2" inches.
3. The tabulated design stresses provided in this table are based on a normal duration. Loads of longer or shorter duration must be adjusted in accordance with the 2018 National Design Specification® for Wood Construction (NDS), as applicable. Duration of load factors must not be applied to  $F_c$  and MOE.
4. The allowable bending stress increase for repetitive members must not exceed 4 percent.
5. The tabulated tension stress is based on a length of 55 inches (1397 mm). For lengths longer than 55 inches, tabulated tension stress must be adjusted by a factor of  $(55/L)^{0.125}$ . The tabulated values for lengths shorter than 55 inches must not be increased.
6. The values in this column reflect the true MOE which is the shear-free modulus of elasticity. When calculating deflection, both bending and shear deformations must be included. Equations for various span and load conditions are available in engineering references. For example, the equation for a simple-supported beam under uniform load is:

$$\Delta = 270wL^4/Ebd^3 + 28.8wL^2/Ebd$$

where:  $\Delta$  = Deflection in inches (in),  $w$  = Uniform load in pounds per linear foot (plf),  $L$  = Design span in feet (ft),

$b$  = Beam width in inches (in),  $d$  = Beam depth in inches (in), and  $E$  = Shear free modulus of elasticity in pounds per square inch (psi)

## Handling, Storage and Installation Guidelines:

- **Warning:** Failure to apply good building practices regarding application, handling, storage and installation of this product can result in poor performance and/or unsafe structures.
- Kerto LVL S-beam must be properly installed and braced before any loads are applied to the structure.
- Kerto LVL S-beam is to be used in a dry, well ventilated environment.
- Kerto LVL S-beam is not to be used for unintended purposes such as ramps or planks.
- Handle Kerto LVL S-beam carefully to avoid damage. Store the product on stickers on a clean, level surface and keep it dry.
- Use appropriate personal protection equipment for handling and working with wood products; including but not limited to eye protection and gloves.

# Allowable Uniform Load

## Table Notes



### Kerto LVL S-beam Design Properties for width and depths used in this Product Guide

WIDTH	DESIGN PROPERTY	DEPTH (INCHES)												
		3-1/2"	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
1-1/2"	Moment (ft-lbs)	890	2054	3425	5375	5647	7721	8533	11571	14813	18420	22384	26700	31364
	Shear (lbs)	1120	1760	2320	2960	3040	3600	3800	4480	5120	5760	6400	7040	7680
	Moment of Inertia (in <sup>4</sup> )	5.36	20.80	47.6	99	107	178	209	343	512	729	1000	1331	1728
	Weight (lbs/ft)	1.2	1.9	2.5	3.2	3.2	3.8	4.1	4.8	5.5	6	6.7	7.3	8
1-3/4"	Moment (ft-lbs)	1039	2397	3996	6271	6588	9008	9955	13499	17282	21490	26115	31150	36591
	Shear (lbs)	1307	2053	2707	3453	3547	4200	4433	5227	5973	6720	7467	8213	8960
	Moment of Inertia (in <sup>4</sup> )	6.25	24.26	56	115	125	208	244	400	597	851	1167	1553	2016
	Weight (lbs/ft)	1.4	2.1	2.8	3.6	3.7	4.4	4.6	5.4	6.2	7.0	7.8	8.6	9.3

# General Notes

## For using this Product Guide and Uniform Load (PLF) tables

1. Tables are for simple span beams (with a support at each end) and uniformly distributed loads.
2. Continuous lateral restraint must be provided at the top (compression) edge of the beam to prevent buckling.
3. For other span, load or restraint conditions, design the beam using Finnwood software, iStruct® software or other competent analysis.
4. Lateral restraint is required at supports to prevent rotation of the beam.

### Loads:

5. There are three sets of Load Tables: 100% for Floor Loads, 115% for Roof Loads (Snow), 125% for Roof Construction Loads (Non Snow). Refer to the NDS (National Design Specification for Wood Construction) Section 2.3.2 for more information about load duration.
6. In order to satisfy both deflection and strength requirements for beam design, live load for floors, live or snow load for roofs as well as total load (live or snow + dead load) must be considered.
7. Uniform load tables in this product guide have values for Live (or Snow) load as well as Total load. The user must calculate both uniform load values in pounds per linear foot (PLF).
8. Additionally, two deflection limits are listed for Live (or Snow) loads; the value typically required by the building code and a more stringent or higher "performance" value. The user must verify the requirements for the application and decide the appropriate deflection value to use.
9. The self weight of the beam is allowed for in the loads shown. It is not necessary to add the self weight of the beam to the calculated total load.

### Bearings:

10. Make sure bearings are structurally adequate to carry the loads and are in compliance with building codes and regulations.
11. Bearing widths shown are required to support the maximum PLF loads shown. If less than maximum PLF load is applied to the beam, tabulated bearing widths may be reduced proportionally as follows: Total Load applied/Total Load from table. Refer to examples on PLF tables.
12. This value may be conservative, specific analysis may produce a better result.

### Multiple Plies:

13. Loads are for one ply (member) 1-1/2" thick or 1-3/4" thick. Multiply the loads: x 2 for 2 – ply beams, x 3 for 3 – ply beams, x 4 for 4 – ply beams
14. Beam plies (members) must be adequately connected by nails, screws or bolts as specified in this product guide or by competent analysis.
15. Two (2) or more 1-1/2" plies are recommended for depths 13-1/2" and greater. Two (2) or more 1-3/4" plies are recommended for depths greater than 16" inches. If a single 1-3/4" member deeper than 16" is used; pay particular attention to stability, lateral restraint and connections. Make sure these structural details are provided and properly installed.
16. 4 – ply beams require bolts or long screws which are specifically manufactured to connect all the plies of a multiple ply beam. 4 - ply beams must be top loaded or loaded equally from both faces.
17. Refer to the multiple ply connection information in this product guide for specific fastener information for connecting the plies. Note: Connection requirements depend on whether loads are applied equally to each ply (Typically when beam is top loaded). Or if loads are applied to one face of the multiple ply beam. For loads applied to one face; additional connections and lateral restraint may be required to avoid torsional loads/stresses in the beam.

# 1-1/2" Kerto LVL S-beam Maximum Uniform Load (PLF) 100% for Floor Loads

## How to use Maximum Uniform Load (PLF) tables:

1. Calculate live load (PLF). Select a beam with equal or greater capacity for Live load.
  2. Calculate total load (PLF). Select a beam with equal or greater capacity for Total load.
- The beam you select must satisfy both requirements: *Live load and Total load.*

**Example:** Refer to the Floor PLF Table for 1-1/2" x 11-7/8"

A floor beam with 9' – 0" clear span carries 744 PLF live (At L/360) and 795 PLF total load.

## 1-1/2" Kerto LVL S-beam Maximum Uniform Load (PLF) 100% for Floor Loads

CLEAR SPAN	DEFL/BRG	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
4'	Live L/480	571	1309	2246	2360	3024	3191						
	Live L/360	762	1516	2246	2360	3024	3191						
	Total L/240	909	1516	2246	2360	3024	3191						
	Brg (in.)	3.0	3.0	4.5	4.5	6.0	7.5						
5'	Live L/480	326	694	1344	1456	2041	2256						
	Live L/360	434	926	1488	1563	2041	2256						
	Total L/240	625	994	1488	1563	2041	2256						
	Brg (in.)	1.5	3.0	4.5	4.5	6.0	6.0						
6'	Live L/480	191	411	855	926	1450	1679	2160	2606	3117	3654	3780	3780
	Live L/360	254	549	1100	1156	1519	1679	2160	2606	3117	3654	3780	3780
	Total L/240	382	701	1100	1156	1519	1679	2160	2606	3117	3654	3780	3780
	Brg (in.)	1.5	3.0	3.0	3.0	4.5	4.5	6.0	7.5	10.5	12.0	12.0	12.0
7'	Live L/480	121	278	548	593	936	1101	1645	2038	2453	2887	3337	3360
	Live L/360	161	370	730	791	1135	1255	1645	2038	2453	2887	3337	3360
	Total L/240	242	521	818	859	1135	1255	1645	2038	2453	2887	3337	3360
	Brg (in.)	1.5	1.5	3.0	3.0	4.5	4.5	6.0	7.5	9.0	10.5	12.0	12.0
8'	Live L/480	81	187	371	402	669	752	1232	1640	1980	2338	2711	3024
	Live L/360	109	249	495	537	889	973	1296	1640	1980	2338	2711	3024
	Total L/240	163	374	631	663	889	973	1296	1640	1980	2338	2711	3024
	Brg (in.)	1.5	1.5	3.0	3.0	3.0	4.5	4.5	6.0	7.5	9.0	10.5	12.0
9'	Live L/480	57	132	263	285	474	558	878	1260	1590	1843	2160	2461
	Live L/360	77	176	351	381	632	744	1053	1313	1590	1843	2160	2461
	Total L/240	115	264	502	527	721	795	1053	1313	1590	1843	2160	2461
	Brg (in.)	1.5	1.5	3.0	3.0	3.0	3.0	4.5	6.0	7.5	7.5	9.0	10.5
10'	Live L/480	42	96	193	210	348	410	648	967	1329	1586	1848	2121
	Live L/360	56	129	258	280	465	547	859	1054	1336	1586	1848	2121
	Total L/240	84	193	387	420	587	649	859	1054	1336	1586	1848	2121
	Brg (in.)	1.5	1.5	3.0	3.0	3.0	3.0	4.5	4.5	6.0	7.5	9.0	10.5
11'	Live L/480	31	73	151	164	263	310	491	734	1011	1325	1542	1814
	Live L/360	42	97	202	219	351	413	655	915	1114	1325	1542	1814
	Total L/240	63	146	303	328	488	539	715	915	1114	1325	1542	1814
	Brg (in.)	1.5	1.5	1.5	1.5	3.0	3.0	4.5	4.5	6.0	7.5	7.5	9.0
12'	Live L/480	56	117	126	204	240	393	570	787	1080	1340	1543	
	Live L/360	75	156	169	272	320	525	760	943	1146	1340	1543	
	Total L/240	112	234	253	408	454	604	773	943	1146	1340	1543	
	Brg (in.)	1.5	1.5	1.5	3.0	3.0	3.0	4.5	6.0	6.0	7.5	9.0	
13'	Live L/480	44	92	100	161	189	311	451	643	858	1110	1326	
	Live L/360	59	123	133	215	253	415	602	823	982	1150	1326	
	Total L/240	88	184	200	323	379	527	662	823	982	1150	1326	
	Brg (in.)	1.5	1.5	1.5	3.0	3.0	3.0	4.5	4.5	6.0	7.5	7.5	
14'	Live L/480	35	74	80	133	152	250	363	518	692	921	1166	
	Live L/360	47	98	107	177	203	333	485	690	851	1008	1173	
	Total L/240	71	148	160	265	305	455	573	713	851	1008	1173	
	Brg (in.)	1.5	1.5	1.5	1.5	3.0	3.0	4.5	4.5	6.0	6.0	7.5	
15'	Live L/480		60	65	108	124	204	304	423	580	754	956	
	Live L/360		80	87	144	166	272	406	564	720	889	1027	
	Total L/240		120	130	217	249	398	487	623	720	889	1027	
	Brg (in.)		1.5	1.5	1.5	3.0	3.0	3.0	4.5	4.5	6.0	7.5	

## 1-1/2" Kerto LVL S-beam Maximum Uniform Load (PLF) 100% for Floor Loads

CLEAR SPAN	DEFL/BRG	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
16'	Live L/480			49	53	89	102	168	251	350	480	625	812
	Live L/360			66	71	119	137	225	335	467	641	784	889
	Total L/240			99	107	179	205	337	448	549	667	784	889
	Brg (in.)			1.5	1.5	1.5	3.0	3.0	3.0	4.5	4.5	6.0	6.0
17'	Live L/480			41	45	74	87	141	210	293	402	524	680
	Live L/360			55	60	99	117	188	280	391	536	697	819
	Total L/240			83	90	149	175	282	398	488	593	697	819
	Brg (in.)			1.5	1.5	1.5	1.5	3.0	3.0	4.5	4.5	6.0	6.0
18'	Live L/480			35	37	63	74	119	177	253	340	452	576
	Live L/360			46	50	84	98	158	237	337	453	603	733
	Total L/240			70	75	126	148	238	355	408	530	604	733
	Brg (in.)			1.5	1.5	1.5	1.5	3.0	3.0	3.0	4.5	4.5	6.0
19'	Live L/480				32	53	63	103	151	215	290	386	491
	Live L/360				43	71	84	138	202	287	387	515	655
	Total L/240				64	107	126	196	303	387	477	569	659
	Brg (in.)				1.5	1.5	1.5	1.5	3.0	3.0	4.5	4.5	6.0
20'	Live L/480					46	54	88	130	185	249	332	423
	Live L/360					61	72	118	173	247	332	442	564
	Total L/240					92	108	177	260	359	431	514	597
	Brg (in.)					1.5	1.5	1.5	3.0	3.0	4.5	4.5	6.0
22'	Live L/480							66	98	139	191	250	325
	Live L/360							89	130	186	255	334	434
	Total L/240							133	196	279	336	426	498
	Brg (in.)							1.5	3.0	3.0	3.0	4.5	4.5
24'	Live L/480							51	76	107	148	194	251
	Live L/360							68	102	143	197	258	335
	Total L/240							103	153	215	296	359	422
	Brg (in.)							1.5	1.5	3.0	3.0	4.5	4.5
26'	Live L/480							40	60	85	116	153	198
	Live L/360							54	80	113	155	204	265
	Total L/240							81	121	170	233	306	360
	Brg (in.)							1.5	1.5	3.0	3.0	4.5	4.5
28'	Live L/480							32	48	69	93	124	159
	Live L/360							43	64	92	124	166	212
	Total L/240							65	97	133	187	249	311
	Brg (in.)							1.5	1.5	1.5	3.0	3.0	4.5
30'	Live L/480								39	56	76	101	131
	Live L/360								52	75	101	135	175
	Total L/240								79	112	152	203	247
	Brg (in.)								1.5	1.5	3.0	3.0	3.0

CLEAR SPAN	DEFL/BRG	11-7/8"	14"
16'	Live L/480	102	168
	Live L/360	137	225
	Total L/240	205	337
	Brg (in.)	3.0	3.0

**Example:** A floor beam with 16' – 0" clear span needs to carry 260 PLF live and 390 PLF total load.

### Refer to the Floor PLF Table for 1-1/2" x 11-7/8"

Live load capacity = 137 PLF x 2 (plies) = 274 PLF (at L/360) which exceeds the live load requirement of 260 PLF

However if a higher performance beam is required with live load deflection limit of L/480

Live load capacity = 102 PLF x 2 (plies) = 204 PLF (at L/480) which does not meet the live load requirement of 260 PLF

### Refer to the Floor PLF Table for 1-1/2" x 14"

Live load capacity = 225 PLF x 2 (plies) = 450 PLF (at L/480) which exceeds the live load requirement of 260 PLF

1-1/2" x 14" is necessary to meet a live load deflection limit of L/480

Total load capacity = 337 PLF x 2 (plies) = 674 (at Total L/240) which exceeds the Total load requirement of 390 PLF

Bearing = 3.0" for 337 x 2 (plies) = 674 PLF

Since total load = 390 PLF then 390/674 x 3 = 2" bearing may be used.

**Note:** Two or more 1-1/2" plies are recommended for depths greater than 13.5".

Example shown is for a two ply member.

# 1-1/2" Kerto LVL S-beam Maximum Uniform Load (PLF) 115% for Roof Loads (snow)

## How to use Maximum Uniform Load (PLF) tables:

1. Calculate snow load (PLF). Select a beam with equal or greater capacity for Snow load.
  2. Calculate total load (PLF). Select a beam with equal or greater capacity for Total load.
- The beam you select must satisfy both requirements: *Live load and Total load.*

**Example:** Refer to the Roof PLF Table for 1-1/2" x 11-1/4"

A roof beam with 12' – 0" clear span carries 408 PLF snow load (At L/240) and 473 PLF total load.

## 1-1/2" Kerto LVL S-beam Maximum Uniform Load (PLF) 115% for Roof Loads (snow)

CLEAR SPAN	DEFL/BRG	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
4'	Snow L/360	762	1680	2387	2565	3320	3600						
	Snow L/240	1046	1680	2387	2565	3320	3600						
	Total L/180	1046	1680	2387	2565	3320	3600						
	Brg (in.)	3.0	3.0	4.5	6.0	7.5	7.5						
5'	Snow L/360	434	926	1711	1798	2348	2520						
	Snow L/240	652	1143	1711	1798	2348	2520						
	Total L/180	719	1143	1711	1798	2348	2520						
	Brg (in.)	1.5	3.0	4.5	4.5	6.0	6.0						
6'	Snow L/360	254	549	1140	1164	1680	1680	2160	2606	3414	3780	3780	3780
	Snow L/240	382	806	1163	1278	1680	1680	2160	2606	3414	3780	3780	3780
	Total L/180	503	806	1163	1278	1680	1680	2160	2606	3414	3780	3780	3780
	Brg (in.)	1.5	3.0	3.0	4.5	4.5	4.5	6.0	7.5	10.5	12.0	12.0	12.0
7'	Snow L/360	161	351	730	791	1248	1443	1890	2290	2668	3024	3360	3360
	Snow L/240	242	527	940	988	1305	1443	1890	2290	2668	3024	3360	3360
	Total L/180	323	599	940	988	1305	1443	1890	2290	2668	3024	3360	3360
	Brg (in.)	1.5	3.0	3.0	3.0	4.5	4.5	6.0	7.5	9.0	10.5	12.0	12.0
8'	Snow L/360	109	249	495	537	852	1003	1296	1680	2043	2614	3024	3024
	Snow L/240	163	374	726	763	1012	1119	1296	1680	2043	2614	3024	3024
	Total L/180	218	458	726	763	1012	1119	1296	1680	2043	2614	3024	3024
	Brg (in.)	1.5	1.5	3.0	3.0	4.5	4.5	4.5	6.0	7.5	10.5	12.0	12.0
9'	Snow L/360	77	176	351	381	632	715	1163	1510	1829	2160	2461	2749
	Snow L/240	115	264	527	571	795	893	1163	1510	1829	2160	2461	2749
	Total L/180	154	352	577	607	795	893	1163	1510	1829	2160	2461	2749
	Brg (in.)	1.5	1.5	3.0	3.0	3.0	4.5	4.5	6.0	7.5	9.0	10.5	12.0
10'	Snow L/360	56	129	258	280	465	547	864	1054	1374	1680	2077	2251
	Snow L/240	84	193	387	420	676	720	988	1054	1374	1680	2077	2251
	Total L/180	112	258	470	494	676	720	988	1054	1374	1680	2077	2251
	Brg (in.)	1.5	1.5	3.0	3.0	3.0	3.0	4.5	4.5	6.0	7.5	10.5	10.5
11'	Snow L/360	42	97	195	211	351	413	655	965	1260	1523	1779	2046
	Snow L/240	63	146	293	317	527	620	822	965	1260	1523	1779	2046
	Total L/180	85	194	390	410	561	620	822	965	1260	1523	1779	2046
	Brg (in.)	1.5	1.5	3.0	3.0	3.0	3.0	4.5	4.5	6.0	7.5	9.0	10.5
12'	Snow L/360	32	75	156	164	272	320	525	760	1050	1163	1511	1680
	Snow L/240	49	112	234	246	408	480	604	889	1084	1163	1511	1680
	Total L/180	65	150	308	328	473	523	604	889	1084	1163	1511	1680
	Brg (in.)	1.5	1.5	1.5	3.0	3.0	3.0	3.0	4.5	6.0	6.0	9.0	9.0
13'	Snow L/360	25	59	123	133	215	253	415	602	824	1080	1323	1526
	Snow L/240	38	88	184	200	323	379	560	761	824	1080	1323	1526
	Total L/180	51	118	246	266	404	447	560	761	824	1080	1323	1526
	Brg (in.)	1.5	1.5	1.5	1.5	3.0	3.0	3.0	4.5	4.5	6.0	7.5	9.0
14'	Snow L/360	20	47	98	107	173	203	333	485	690	923	1148	1326
	Snow L/240	31	71	148	160	259	305	500	659	768	979	1148	1326
	Total L/180	41	95	197	214	346	386	521	659	768	979	1148	1326
	Brg (in.)	1.5	1.5	1.5	1.5	3.0	3.0	3.0	4.5	4.5	6.0	7.5	9.0
15'	Snow L/360		38	80	87	141	166	272	406	564	720	982	1163
	Snow L/240		58	120	130	211	249	408	487	716	720	1006	1163
	Total L/180		77	160	174	282	332	457	487	716	720	1006	1163
	Brg (in.)		1.5	1.5	1.5	3.0	3.0	3.0	3.0	4.5	4.5	7.5	7.5

## 1-1/2" Kerto LVL S-beam Maximum Uniform Load (PLF) 115% for Roof Loads (snow)

CLEAR SPAN	DEFL/BRG	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
16'	Snow L/360		31	66	71	119	137	225	335	467	641	834	1043
	Snow L/240		47	99	107	179	205	337	458	631	677	889	1043
	Total L/180		63	132	143	232	274	403	458	631	677	889	1043
	Brg (in.)		1.5	1.5	1.5	1.5	3.0	3.0	3.0	4.5	4.5	6.0	7.5
17'	Snow L/360		26	55	60	99	114	188	280	391	536	699	888
	Snow L/240		40	83	90	149	172	282	421	561	638	802	928
	Total L/180		53	110	120	199	229	357	432	561	638	802	928
	Brg (in.)		1.5	1.5	1.5	1.5	3.0	3.0	3.0	4.5	4.5	6.0	7.5
18'	Snow L/360		22	46	50	84	98	158	237	337	453	591	768
	Snow L/240		33	70	75	126	148	238	355	408	604	717	795
	Total L/180		45	93	101	168	197	317	408	408	604	717	795
	Brg (in.)		1.5	1.5	1.5	1.5	1.5	3.0	3.0	3.0	4.5	6.0	6.0
19'	Snow L/360			39	43	71	84	135	202	287	387	505	655
	Snow L/240			59	64	107	126	203	303	387	548	646	756
	Total L/180			79	86	143	168	270	367	387	548	646	756
	Brg (in.)			1.5	1.5	1.5	1.5	3.0	3.0	3.0	4.5	6.0	6.0
20'	Snow L/360			34	37	61	72	116	173	247	332	434	564
	Snow L/240			51	55	92	108	174	260	368	496	584	686
	Total L/180			68	74	122	144	232	332	368	496	584	686
	Brg (in.)			1.5	1.5	1.5	1.5	3.0	3.0	3.0	4.5	6.0	6.0
22'	Snow L/360							89	130	186	251	334	427
	Snow L/240							133	196	279	376	490	569
	Total L/180							169	261	336	411	490	569
	Brg (in.)							1.5	3.0	3.0	4.5	4.5	6.0
24'	Snow L/360							68	101	143	194	258	335
	Snow L/240							103	151	215	291	388	458
	Total L/180							137	202	287	346	413	458
	Brg (in.)							1.5	3.0	3.0	4.5	4.5	4.5
26'	Snow L/360							54	79	113	155	204	265
	Snow L/240							81	119	170	233	306	397
	Total L/180							108	159	226	285	353	414
	Brg (in.)							1.5	3.0	3.0	3.0	4.5	4.5
28'	Snow L/360							43	64	91	124	163	212
	Snow L/240							65	97	136	187	245	319
	Total L/180							86	129	182	249	305	358
	Brg (in.)							1.5	1.5	3.0	3.0	4.5	4.5
30'	Snow L/360							35	52	74	101	135	173
	Snow L/240							52	79	111	152	203	260
	Total L/180							70	105	148	203	247	312
	Brg (in.)							1.5	1.5	3.0	3.0	3.0	4.5

CLEAR SPAN	DEFL/BRG	14"	16"
14'	Snow L/360	333	485
	Snow L/240	500	659
	Total L/180	521	659
	Brg (in.)	3.0	4.5

**Example:** A roof beam with 14' – 0" clear span needs to carry 390 PLF snow and 585 PLF total load.

Refer to the Roof PLF Table for **1-1/2" x 14"**

Snow load capacity = 500 PLF (At L/240) which exceeds the snow load requirement of 390 PLF  
 Total load capacity = 521 PLF which does not meet the total load requirement of 585 PLF

Refer to the Roof PLF Table for **1-1/2" x 16"**

Snow load capacity = 659 PLF (At L/240) which exceeds the snow load requirement of 390 PLF  
 Total load capacity = 659 PLF which exceeds the total load requirement of 585 PLF

1-1/2 x 16" is required to meet the total load capacity.

Required bearing = 4.5" for 659 PLF total load

Since total load = 585 PLF then  $585/659 \times 4.5 = 4.0$ " bearing may be used.

This value may be conservative, specific analysis may produce a better result.

**Note:** Two (2) or more 1-1/2" plies are recommended for depths greater than 13.5 inches.

Examples shown here are for loads on a single ply of a multiple ply member.

# 1-1/2" Kerto LVL S-beam Maximum Uniform Load (PLF) 125% for Roof Loads (non snow)

## How to use Maximum Uniform Load (PLF) tables:

1. Calculate live load (PLF). Select a beam with equal or greater capacity for Live load.
  2. Calculate total load (PLF). Select a beam with equal or greater capacity for Total load.
- The beam you select must satisfy both requirements: *Live load and Total load.*

**Example:** Refer to the Roof PLF Table for 1-1/2" x 11-7/8"

A roof beam with 14' – 0" clear span carries 305 PLF roof live load and 407 PLF total load.

## 1-1/2" Kerto LVL S-beam Maximum Uniform Load (PLF) 125% for Roof Loads (non snow)

CLEAR SPAN	DEFL/BRG	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
4'	Live L/360	762	1601	2654	2788	3600	3781						
	Live L/240	1137	1789	2654	2788	3600	3781						
	Total L/180	1137	1789	2654	2788	3600	3781						
	Brg (in.)	3.0	4.5	6.0	6.0	7.5	9.0						
5'	Live L/360	404	926	1793	1942	2520	2696						
	Live L/240	606	1242	1860	1954	2520	2696						
	Total L/180	745	1242	1860	1954	2520	2696						
	Brg (in.)	3.0	3.0	4.5	4.5	6.0	7.5						
6'	Live L/360	254	549	1074	1164	1824	2019	2606	3024	3759	3780	3780	3780
	Live L/240	382	823	1322	1389	1827	2019	2606	3024	3759	3780	3780	3780
	Total L/180	509	876	1322	1389	1827	2019	2606	3024	3759	3780	3780	3780
	Brg (in.)	1.5	3.0	4.5	4.5	6.0	6.0	7.5	9.0	12.0	12.0	12.0	12.0
7'	Live L/360	161	351	730	791	1248	1396	1990	2466	2970	3360	3360	3360
	Live L/240	242	527	1008	1008	1419	1516	1990	2466	2970	3360	3360	3360
	Total L/180	323	651	1008	1008	1419	1516	1990	2466	2970	3360	3360	3360
	Brg (in.)	1.5	3.0	3.0	3.0	4.5	6.0	7.5	9.0	10.5	12.0	12.0	12.0
8'	Live L/360	109	238	495	537	852	1003	1572	1991	2387	2713	3024	3024
	Live L/240	163	358	743	805	1100	1216	1601	1991	2387	2713	3024	3024
	Total L/180	218	477	789	829	1100	1216	1601	1991	2387	2713	3024	3024
	Brg (in.)	1.5	3.0	3.0	3.0	4.5	4.5	6.0	7.5	9.0	10.5	12.0	12.0
9'	Live L/360	77	176	351	381	608	715	1126	1599	1843	2295	2670	2749
	Live L/240	115	264	527	571	878	970	1282	1599	1843	2295	2670	2749
	Total L/180	154	352	628	659	878	970	1282	1599	1843	2295	2670	2749
	Brg (in.)	1.5	1.5	3.0	3.0	4.5	4.5	6.0	7.5	7.5	10.5	12.0	12.0
10'	Live L/360	56	129	258	280	465	527	864	1244	1631	1936	2251	2520
	Live L/240	84	193	387	420	697	791	1054	1343	1631	1936	2251	2520
	Total L/180	112	258	511	537	720	792	1054	1343	1631	1936	2251	2520
	Brg (in.)	1.5	1.5	3.0	3.0	3.0	4.5	4.5	6.0	7.5	9.0	10.5	12.0
11'	Live L/360	42	97	195	211	351	400	655	965	1306	1621	1893	2075
	Live L/240	63	146	293	317	527	600	894	965	1363	1621	1893	2075
	Total L/180	85	194	391	423	610	659	894	965	1363	1621	1893	2075
	Brg (in.)	1.5	1.5	3.0	3.0	3.0	4.5	4.5	4.5	7.5	9.0	10.5	10.5
12'	Live L/360	32	75	156	164	272	320	509	760	1050	1398	1642	1892
	Live L/240	49	112	234	246	408	480	755	889	1163	1404	1642	1892
	Total L/180	65	150	308	328	514	568	755	889	1163	1404	1642	1892
	Brg (in.)	1.5	1.5	1.5	3.0	3.0	3.0	4.5	4.5	6.0	7.5	9.0	10.5
13'	Live L/360	25	59	123	133	215	253	403	602	834	1112	1412	1629
	Live L/240	38	88	184	200	323	379	605	824	1010	1205	1412	1629
	Total L/180	51	118	246	266	430	486	646	824	1010	1205	1412	1629
	Brg (in.)	1.5	1.5	1.5	1.5	3.0	3.0	4.5	4.5	6.0	7.5	9.0	10.5
14'	Live L/360	20	47	98	107	173	203	333	485	673	923	1197	1441
	Live L/240	31	71	148	160	259	305	500	716	876	1008	1239	1441
	Total L/180	41	95	197	214	346	407	521	716	876	1008	1239	1441
	Brg (in.)	1.5	1.5	1.5	1.5	3.0	3.0	3.0	4.5	6.0	6.0	7.5	9.0
15'	Live L/360		38	80	87	141	166	272	406	551	755	982	1244
	Live L/240		58	120	130	211	249	408	487	766	931	1093	1264
	Total L/180		77	160	174	282	332	487	487	766	931	1093	1264
	Brg (in.)		1.5	1.5	1.5	3.0	3.0	3.0	3.0	6.0	6.0	7.5	9.0

## 1-1/2" Kerto LVL S-beam Maximum Uniform Load (PLF) 125% for Roof Loads (non snow)

CLEAR SPAN	DEFL/BRG	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
16'	Live L/360		31	66	71	119	137	225	335	467	626	815	1058
	Live L/240		47	99	107	179	205	337	458	677	822	966	1095
	Total L/180		63	132	143	232	274	438	458	677	822	966	1095
	Brg (in.)		1.5	1.5	1.5	1.5	3.0	3.0	3.0	4.5	6.0	7.5	7.5
17'	Live L/360		26	55	60	99	114	188	280	391	536	699	888
	Live L/240		40	83	90	149	172	282	421	586	638	840	1009
	Total L/180		53	110	120	199	229	376	432	610	638	840	1009
	Brg (in.)		1.5	1.5	1.5	1.5	3.0	3.0	3.0	4.5	4.5	6.0	7.5
18'	Live L/360		22	46	50	84	98	158	237	330	453	591	752
	Live L/240		33	70	75	126	148	238	355	496	604	780	904
	Total L/180		45	93	101	168	197	317	408	545	604	780	904
	Brg (in.)		1.5	1.5	1.5	1.5	1.5	3.0	3.0	4.5	4.5	6.0	7.5
19'	Live L/360			39	43	71	84	135	202	282	387	505	643
	Live L/240			59	64	107	126	203	303	423	574	702	814
	Total L/180			79	86	143	168	270	387	490	574	702	814
	Brg (in.)			1.5	1.5	1.5	1.5	3.0	3.0	4.5	4.5	6.0	7.5
20'	Live L/360			34	37	61	72	116	173	242	332	434	564
	Live L/240			51	55	92	108	174	260	363	499	635	720
	Total L/180			68	74	122	144	232	347	443	539	635	720
	Brg (in.)			1.5	1.5	1.5	1.5	3.0	3.0	4.5	4.5	6.0	6.0
22'	Live L/360							89	130	183	251	334	427
	Live L/240							133	196	274	376	498	619
	Total L/180							169	261	366	447	498	619
	Brg (in.)							1.5	3.0	4.5	4.5	4.5	6.0
24'	Live L/360							68	101	143	194	258	330
	Live L/240							103	151	215	291	388	496
	Total L/180							137	202	287	376	449	522
	Brg (in.)							1.5	3.0	3.0	4.5	4.5	6.0
26'	Live L/360							54	79	113	155	204	265
	Live L/240							81	119	170	233	306	397
	Total L/180							108	159	226	285	383	423
	Brg (in.)							1.5	3.0	3.0	3.0	4.5	4.5
28'	Live L/360							43	63	91	124	163	212
	Live L/240							65	95	136	187	245	319
	Total L/180							86	127	182	249	327	389
	Brg (in.)							1.5	3.0	3.0	3.0	4.5	4.5
30'	Live L/360							35	52	74	101	135	173
	Live L/240							52	78	111	152	203	260
	Total L/180							70	104	148	203	247	339
	Brg (in.)							1.5	3.0	3.0	3.0	3.0	4.5

CLEAR SPAN	DEFL/BRG	16"	18"
18'	Live L/360	237	330
	Live L/240	355	496
	Total L/180	408	545
	Brg (in.)	3.0	4.5

**Example:** A roof beam with 18' – 0" clear span needs to carry 300 PLF roof live and 450 PLF total load.

Refer to the Roof PLF Table for **1-1/2" x 16"**

Live load capacity = 355 PLF (At L/240) which exceeds the Live load requirement of 300 PLF  
 Total load capacity = 408 PLF which does not meet the total load requirement of 450 PLF

Refer to the Roof PLF Table for **1-1/2" x 18"**

Live load capacity = 496 PLF (At L/240) which exceeds the Live load requirement of 300 PLF  
 Total load capacity = 545 PLF which exceeds the total load requirement of 450 PLF

1-1/2" x 18" is required to meet the total load capacity.

Required bearing = 4.5" for 545 PLF total load

Since total load = 450 PLF then  $450/545 \times 4.5 = 3.7$ " bearing may be used.

This value may be conservative, specific analysis may produce a better result.

**Note:** Two (2) or more 1-1/2" plies are recommended for depths greater than 13.5 inches.

Examples shown here are for loads on a single ply of a multiple ply member.

# 1-3/4" Kerto LVL S-beam Maximum Uniform Load (PLF) 100% for Floor Loads

## How to use Maximum Uniform Load (PLF) tables:

1. Calculate live load (PLF). Select a beam with equal or greater capacity for Live load.
  2. Calculate total load (PLF). Select a beam with equal or greater capacity for Total load.
- The beam you select must satisfy both requirements: *Live load and Total load.*

**Example:** Refer to the Floor PLF Table for 1-3/4" x 11-7/8"

A floor beam with 9' – 0" clear span carries 868 PLF live (At L/360) and 928 PLF total load.

## 1-3/4" Kerto LVL S-beam Maximum Uniform Load (PLF) 100% for Floor Loads

CLEAR SPAN	DEFL/BRG	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
6'	Live L/480	222	480	998	1081	1691	1959	2520	3041	3528	4263	4410	4410
	Live L/360	297	640	1284	1349	1773	1959	2520	3041	3528	4263	4410	4410
	Total L/240	445	818	1284	1349	1773	1959	2520	3041	3528	4263	4410	4410
	Brg (in.)	1.5	3.0	3.0	3.0	4.5	4.5	6.0	7.5	9.0	12.0	12.0	12.0
7'	Live L/480	141	324	639	692	1092	1285	1919	2378	2862	3368	3893	3920
	Live L/360	188	432	852	923	1324	1464	1919	2378	2862	3368	3893	3920
	Total L/240	283	608	954	1002	1324	1464	1919	2378	2862	3368	3893	3920
	Brg (in.)	1.5	1.5	3.0	3.0	4.5	4.5	6.0	7.5	9.0	10.5	12.0	12.0
8'	Live L/480	95	218	433	470	780	918	1438	1913	2311	2728	3163	3528
	Live L/360	127	291	578	626	1037	1037	1512	1913	2311	2728	3163	3528
	Total L/240	190	437	737	774	1037	1037	1512	1913	2311	2728	3163	3528
	Brg (in.)	1.5	1.5	3.0	3.0	3.0	3.0	4.5	6.0	7.5	9.0	10.5	12.0
9'	Live L/480	67	154	307	333	553	651	1025	1470	1764	2151	2520	2871
	Live L/360	89	205	410	444	738	868	1228	1531	1764	2151	2520	2871
	Total L/240	134	308	586	615	842	928	1228	1531	1764	2151	2520	2871
	Brg (in.)	1.5	1.5	3.0	3.0	3.0	3.0	4.5	6.0	6.0	7.5	9.0	10.5
10'	Live L/480	49	108	226	245	407	478	756	1129	1551	1850	2156	2475
	Live L/360	65	145	301	326	542	638	1003	1230	1559	1850	2156	2475
	Total L/240	98	217	452	490	685	758	1003	1230	1559	1850	2156	2475
	Brg (in.)	1.5	3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	7.5	9.0	10.5
11'	Live L/480	37	82	171	185	307	362	593	856	1180	1470	1800	2116
	Live L/360	49	109	228	247	410	482	766	1068	1299	1470	1800	2116
	Total L/240	74	164	342	370	569	629	766	1068	1299	1470	1800	2116
	Brg (in.)	1.5	3.0	3.0	3.0	3.0	3.0	3.0	4.5	6.0	6.0	7.5	9.0
12'	Live L/480	28	63	132	143	238	280	459	665	919	1261	1563	1800
	Live L/360	38	85	176	191	317	373	612	887	1100	1337	1563	1800
	Total L/240	57	127	265	287	476	530	705	902	1100	1337	1563	1800
	Brg (in.)	1.5	3.0	3.0	3.0	3.0	3.0	3.0	4.5	6.0	6.0	7.5	9.0
13'	Live L/480	22	50	104	113	188	221	363	527	750	1001	1296	1547
	Live L/360	30	67	139	151	251	295	484	702	961	1146	1342	1547
	Total L/240	45	100	209	226	376	443	615	772	961	1146	1342	1547
	Brg (in.)	1.5	3.0	3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	7.5	7.5
14'	Live L/480		40	84	91	151	178	291	435	604	807	1075	1360
	Live L/360		54	112	121	201	237	389	581	805	993	1176	1368
	Total L/240		81	168	182	302	356	531	608	831	993	1176	1368
	Brg (in.)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.5	6.0	6.0	7.5
15'	Live L/480		33	68	74	123	145	238	355	494	677	880	1115
	Live L/360		44	91	99	164	193	317	474	658	840	1037	1199
	Total L/240		66	137	148	247	290	464	569	727	840	1037	1199
	Brg (in.)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	7.5
16'	Live L/480			56	61	102	120	196	293	408	560	729	947
	Live L/360			75	82	136	160	262	391	545	747	915	1037
	Total L/240			113	123	204	240	393	523	641	779	915	1037
	Brg (in.)			3.0	3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	6.0
17'	Live L/480			47	51	85	100	164	245	342	469	611	794
	Live L/360			63	68	113	133	219	327	456	626	813	955
	Total L/240			94	102	170	200	329	464	569	692	813	955
	Brg (in.)			3.0	3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	6.0

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## 1-3/4" Kerto LVL S-beam Maximum Uniform Load (PLF) 100% for Floor Loads

CLEAR SPAN	DEFL/BRG	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
18'	Live L/480			40	43	72	84	138	207	295	396	528	672
	Live L/360			53	57	96	113	185	276	393	529	704	855
	Total L/240			80	86	144	169	277	414	476	618	705	855
	Brg (in.)			3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0
19'	Live L/480			34	37	61	72	118	176	251	338	450	573
	Live L/360			45	49	81	96	157	235	335	451	600	765
	Total L/240			68	74	122	144	236	353	452	556	663	769
	Brg (in.)			3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0
20'	Live L/480				31	52	62	101	151	216	291	387	494
	Live L/360				42	70	82	135	202	288	388	516	658
	Total L/240				63	105	124	203	303	419	503	600	696
	Brg (in.)				3.0	3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0
22'	Live L/480							76	114	163	223	292	379
	Live L/360							102	152	217	298	390	506
	Total L/240							153	228	326	392	497	581
	Brg (in.)							3.0	3.0	3.0	3.0	4.5	4.5
24'	Live L/480							59	88	125	172	226	293
	Live L/360							78	117	167	230	301	391
	Total L/240							118	176	251	345	419	492
	Brg (in.)							3.0	3.0	3.0	3.0	4.5	4.5
26'	Live L/480							46	69	99	136	181	231
	Live L/360							62	92	132	181	241	309
	Total L/240							93	139	198	272	332	420
	Brg (in.)							3.0	3.0	3.0	3.0	3.0	4.5
28'	Live L/480							37	55	79	109	145	186
	Live L/360							49	74	106	145	193	248
	Total L/240							74	111	159	218	290	363
	Brg (in.)							3.0	3.0	3.0	3.0	3.0	4.5
30'	Live L/480							30	45	64	88	118	153
	Live L/360							40	60	86	118	157	205
	Total L/240							61	91	129	177	236	289
	Brg (in.)							3.0	3.0	3.0	3.0	3.0	3.0

CLEAR SPAN	DEFL/BRG	16"	18"
16'	Live L/480	293	408
	Live L/360	391	545
	Total L/240	523	641
	Brg (in.)	3.0	4.5

**Example:** A floor beam with 16' - 0" clear span carries 380 PLF live and 500 PLF total load.

Refer to the Floor PLF Table for **1-3/4" x 16"**

Live load capacity = 391 PLF which exceeds the live load requirement of 380 PLF

However If a higher performance beam is required with a live load deflection limit of L/480

Live load capacity = 293 PLF which does not meet the live load requirement of 380 PLF

Refer to the Floor PLF Table for **1-3/4" x 18"**

Live load capacity = 408 PLF which exceeds the live load requirement of 380 PLF

Total load capacity = 641 PLF which exceeds the total load requirement of 500 PLF

1-3/4" x 18" is necessary to meet a live load deflection limit of L/480

Required bearing = 4.5" for 641 PLF total load

Since total load = 500 PLF then  $500/641 \times 4.5 = 3.5$ " bearing may be used.

This value may be conservative, specific analysis may produce a better result.

**Note:** Two (2) or more 1-3/4" plies are recommended for depths greater than 16 inches.

Example shown here is for loads on a single ply of a multiple ply member.

# 1-3/4" Kerto LVL S-beam Maximum Uniform Load (PLF) 115% for Roof Loads (snow)

## How to use Maximum Uniform Load (PLF) tables:

1. Calculate snow load (PLF). Select a beam with equal or greater capacity for Snow load.
  2. Calculate total load (PLF). Select a beam with equal or greater capacity for Total load.
- The beam you select must satisfy both requirements: *Live load and Total load.*

**Example:** Refer to the Roof PLF Table for 1-3/4" x 9-1/2"

A roof beam with 12' – 0" clear span carries 287 PLF snow load (At L/240) and 382 PLF total load.

## 1-3/4" Kerto LVL S-beam Maximum Uniform Load (PLF) 115% for Roof Loads (snow)

CLEAR SPAN	DEFL/BRG	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
6'	Snow L/360	297	640	1253	1358	1960	2167	2829	3489	3983	4410	4410	4410
	Snow L/240	445	941	1419	1491	1960	2167	2829	3489	3983	4410	4410	4410
	Total L/180	587	941	1419	1491	1960	2167	2829	3489	3983	4410	4410	4410
	Brg (in.)	1.5	3.0	4.5	4.5	4.5	6.0	7.5	9.0	10.5	12.0	12.0	12.0
7'	Snow L/360	188	410	852	923	1457	1683	2205	2672	3112	3753	3920	3920
	Snow L/240	283	615	1097	1153	1523	1683	2205	2672	3112	3753	3920	3920
	Total L/180	377	699	1097	1153	1523	1683	2205	2672	3112	3753	3920	3920
	Brg (in.)	1.5	3.0	3.0	3.0	4.5	4.5	6.0	7.5	9.0	12.0	12.0	12.0
8'	Snow L/360	127	291	578	626	994	1170	1718	2137	2582	3050	3528	3528
	Snow L/240	190	437	847	890	1181	1305	1718	2137	2582	3050	3528	3528
	Total L/180	254	534	847	890	1181	1305	1718	2137	2582	3050	3528	3528
	Brg (in.)	1.5	1.5	3.0	3.0	4.5	4.5	6.0	7.5	9.0	10.5	12.0	12.0
9'	Snow L/360	89	205	410	444	738	834	1356	1761	2134	2520	2871	3207
	Snow L/240	134	308	615	667	928	1042	1356	1761	2134	2520	2871	3207
	Total L/180	179	411	674	708	928	1042	1356	1761	2134	2520	2871	3207
	Brg (in.)	1.5	1.5	3.0	3.0	3.0	4.5	4.5	6.0	7.5	9.0	10.5	12.0
10'	Snow L/360	65	145	301	326	542	638	1008	1442	1751	2079	2423	2627
	Snow L/240	98	217	452	490	788	840	1153	1442	1751	2079	2423	2627
	Total L/180	131	290	549	576	788	840	1153	1442	1751	2079	2423	2627
	Brg (in.)	1.5	3.0	3.0	3.0	3.0	3.0	4.5	6.0	7.5	9.0	10.5	10.5
11'	Snow L/360	49	109	228	247	410	482	765	1105	1470	1777	2075	2387
	Snow L/240	74	164	342	370	615	723	959	1202	1470	1777	2075	2387
	Total L/180	99	219	455	478	654	723	959	1202	1470	1777	2075	2387
	Brg (in.)	1.5	3.0	3.0	3.0	3.0	3.0	4.5	6.0	6.0	7.5	9.0	10.5
12'	Snow L/360	38	85	176	191	317	373	594	887	1225	1507	1762	1960
	Snow L/240	57	127	265	287	476	560	810	1037	1265	1507	1762	1960
	Total L/180	76	170	353	382	552	610	810	1037	1265	1507	1762	1960
	Brg (in.)	1.5	3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	7.5	9.0	9.0
13'	Snow L/360	30	67	139	151	251	295	484	702	973	1260	1543	1780
	Snow L/240	45	100	209	226	376	443	653	888	1084	1260	1543	1780
	Total L/180	60	134	279	302	472	521	653	888	1084	1260	1543	1780
	Brg (in.)	1.5	3.0	3.0	3.0	3.0	3.0	3.0	4.5	6.0	6.0	7.5	9.0
14'	Snow L/360	24	54	112	121	201	237	389	566	805	1077	1339	1547
	Snow L/240	36	81	168	182	302	356	583	769	896	1142	1339	1547
	Total L/180	48	108	224	243	403	451	608	769	896	1142	1339	1547
	Brg (in.)	1.5	3.0	3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	7.5	9.0
15'	Snow L/360		44	91	99	164	193	317	462	658	881	1145	1356
	Snow L/240	29	66	137	148	247	290	476	672	836	1000	1173	1356
	Total L/180	39	88	183	198	329	387	534	672	836	1000	1173	1356
	Brg (in.)	1.5	3.0	3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	7.5	7.5
16'	Snow L/360			75	82	136	160	262	382	545	731	973	1217
	Snow L/240			113	123	204	240	393	574	737	882	1037	1217
	Total L/180			151	164	272	320	470	592	737	882	1037	1217
	Brg (in.)			3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	6.0	7.5
17'	Snow L/360			63	68	113	133	219	327	456	626	815	1036
	Snow L/240			94	102	170	200	329	491	654	745	935	1083
	Total L/180			126	137	227	267	417	504	654	745	935	1083
	Brg (in.)			3.0	3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	7.5

## 1-3/4" Kerto LVL S-beam Maximum Uniform Load (PLF) 115% for Roof Loads (snow)

CLEAR SPAN	DEFL/BRG	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
18'	Snow L/360			53	57	96	113	185	276	385	529	690	896
	Snow L/240			80	86	144	169	277	414	578	705	837	928
	Total L/180			106	115	192	226	370	476	585	705	837	928
	Brg (in.)			3.0	3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	6.0
19'	Snow L/360			45	49	81	96	157	235	329	451	589	765
	Snow L/240			68	74	122	144	236	353	493	640	753	882
	Total L/180			91	98	163	192	315	429	526	640	753	882
	Brg (in.)			3.0	3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	6.0
20'	Snow L/360				42	70	82	135	202	283	388	507	658
	Snow L/240				63	105	124	203	303	424	578	681	801
	Total L/180				84	140	165	271	387	476	578	681	801
	Brg (in.)				3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	6.0
22'	Snow L/360							102	152	217	293	390	498
	Snow L/240							153	228	326	439	572	664
	Total L/180							204	305	392	479	572	664
	Brg (in.)							3.0	3.0	3.0	4.5	4.5	6.0
24'	Snow L/360							78	117	167	226	301	391
	Snow L/240							118	176	251	340	452	534
	Total L/180							157	235	335	404	482	534
	Brg (in.)							3.0	3.0	3.0	4.5	4.5	4.5
26'	Snow L/360							62	92	132	181	238	309
	Snow L/240							93	139	198	272	357	463
	Total L/180							124	185	264	332	411	483
	Brg (in.)							3.0	3.0	3.0	3.0	4.5	4.5
28'	Snow L/360							49	74	106	145	191	248
	Snow L/240							74	111	159	218	286	372
	Total L/180							99	149	212	291	355	418
	Brg (in.)							3.0	3.0	3.0	3.0	4.5	4.5
30'	Snow L/360							40	60	86	118	157	202
	Snow L/240							61	91	129	177	236	303
	Total L/180							81	121	172	237	289	364
	Brg (in.)							3.0	3.0	3.0	3.0	3.0	4.5

CLEAR SPAN	DEFL/BRG	16"	18"
20'	Snow L/360	202	283
	Snow L/240	303	424
	Total L/180	387	476
	Brg (in.)	3.0	4.5

**Example:** A floor beam with 20' - 0" clear span needs to carry 300 PLF Live and 400 PLF Total Load.

Refer to the Roof PLF Table for **1-3/4" x 16"**

Snow load capacity = 303 PLF which exceeds the snow load requirement of 300 PLF  
 Total load capacity = 387 PLF which does not meet the total load requirement of 400 PLF

Refer to the Roof PLF Table for **1-3/4" x 18"**

Snow load capacity = 424 PLF which exceeds the snow load requirement of 300 PLF  
 Total load capacity = 476 PLF which exceeds the total load requirement of 400 PLF

1-3/4 x 18" is required to meet the total load capacity.

Required bearing = 4.5" for 476 PLF total load

Since total load = 400 PLF then  $400/476 \times 4.5 = 3.8$ " bearing may be used.

This value may be conservative, specific analysis may produce a better result.

**Note:** Two (2) or more 1-3/4" plies are recommended for depths greater than 16 inches.

Examples shown here are for loads on a single ply of a multiple ply member.

# 1-3/4" Kerto LVL S-beam Maximum Uniform Load (PLF) 125% for Roof Loads (non snow)

## How to use Maximum Uniform Load (PLF) tables:

1. Calculate roof live load (PLF). Select a beam with equal or greater capacity for Live load.
  2. Calculate total load (PLF). Select a beam with equal or greater capacity for Total load.
- The beam you select must satisfy both requirements: *Live load and Total load.*

**Example:** Refer to the Roof PLF Table for 1-3/4" x 11-7/8"

A roof beam with 12' – 0" clear span carries 560 PLF roof live load and 663 PLF total load.

## 1-3/4" Kerto LVL S-beam Maximum Uniform Load (PLF) 125% for Roof Loads (non snow)

CLEAR SPAN	DEFL/BRG	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
6'	Live L/360	297	640	1253	1358	2128	2356	3041	3528	4385	4410	4410	4410
	Live L/240	445	961	1543	1621	2131	2356	3041	3528	4385	4410	4410	4410
	Total L/180	594	1022	1543	1621	2131	2356	3041	3528	4385	4410	4410	4410
	Brg (in.)	1.5	3.0	4.5	4.5	6.0	6.0	7.5	9.0	12.0	12.0	12.0	12.0
7'	Live L/360	188	410	852	923	1457	1629	2321	2877	3465	3920	3920	3920
	Live L/240	283	615	1176	1176	1656	1769	2321	2877	3465	3920	3920	3920
	Total L/180	377	760	1176	1176	1656	1769	2321	2877	3465	3920	3920	3920
	Brg (in.)	1.5	3.0	3.0	3.0	4.5	6.0	7.5	9.0	10.5	12.0	12.0	12.0
8'	Live L/360	127	291	578	626	994	1170	1834	2323	2785	3166	3528	3528
	Live L/240	190	437	867	940	1284	1419	1868	2323	2785	3166	3528	3528
	Total L/180	254	534	921	967	1284	1419	1868	2323	2785	3166	3528	3528
	Brg (in.)	1.5	1.5	3.0	3.0	4.5	4.5	6.0	7.5	9.0	10.5	12.0	12.0
9'	Live L/360	89	205	410	444	709	834	1313	1865	2260	2678	3115	3207
	Live L/240	134	308	615	667	1024	1132	1495	1865	2260	2678	3115	3207
	Total L/180	179	411	732	769	1024	1132	1495	1865	2260	2678	3115	3207
	Brg (in.)	1.5	1.5	3.0	3.0	4.5	4.5	6.0	7.5	9.0	10.5	12.0	12.0
10'	Live L/360	65	145	301	326	542	615	1008	1452	1903	2259	2627	2940
	Live L/240	98	217	452	490	814	923	1230	1567	1903	2259	2627	2940
	Total L/180	131	290	596	627	840	924	1230	1567	1903	2259	2627	2940
	Brg (in.)	1.5	3.0	3.0	3.0	3.0	4.5	4.5	6.0	7.5	9.0	10.5	12.0
11'	Live L/360	49	109	228	247	410	482	765	1105	1523	1891	2208	2421
	Live L/240	74	164	342	370	615	724	1043	1306	1590	1891	2208	2421
	Total L/180	99	219	456	494	711	766	1043	1306	1590	1891	2208	2421
	Brg (in.)	1.5	3.0	3.0	3.0	3.0	3.0	4.5	6.0	7.5	9.0	10.5	10.5
12'	Live L/360	38	85	176	191	317	373	594	860	1225	1631	1916	2207
	Live L/240	57	127	265	287	476	560	881	1106	1356	1638	1916	2207
	Total L/180	76	170	353	382	600	663	881	1106	1356	1638	1916	2207
	Brg (in.)	1.5	3.0	3.0	3.0	3.0	3.0	4.5	6.0	6.0	7.5	9.0	10.5
13'	Live L/360	30	67	139	151	251	295	470	702	973	1298	1647	1824
	Live L/240	45	100	209	226	376	443	706	962	1179	1406	1647	1824
	Total L/180	60	134	279	302	502	567	754	962	1179	1406	1647	1824
	Brg (in.)	1.5	3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	7.5	9.0	9.0
14'	Live L/360	24	54	112	121	201	237	389	566	785	1077	1397	1681
	Live L/240	36	81	168	182	302	356	583	836	1022	1176	1445	1681
	Total L/180	48	108	224	243	403	475	608	836	1022	1176	1445	1681
	Brg (in.)	1.5	3.0	3.0	3.0	3.0	3.0	3.0	4.5	6.0	6.0	7.5	9.0
15'	Live L/360		44	91	99	164	193	317	462	642	881	1145	1452
	Live L/240	29	66	137	148	247	290	476	693	894	1086	1275	1475
	Total L/180	39	88	183	198	329	387	569	731	894	1086	1275	1475
	Brg (in.)	1.5	3.0	3.0	3.0	3.0	3.0	3.0	4.5	6.0	6.0	7.5	9.0
16'	Live L/360		36	75	82	136	160	262	382	545	731	951	1234
	Live L/240		54	113	123	204	240	393	574	789	959	1127	1278
	Total L/180		72	151	164	272	320	511	644	789	959	1127	1278
	Brg (in.)		3.0	3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	7.5	7.5
17'	Live L/360			63	68	113	133	219	320	456	612	815	1036
	Live L/240			94	102	170	200	329	480	684	852	980	1177
	Total L/180			126	137	227	267	438	572	711	852	980	1177
	Brg (in.)			3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	6.0	7.5

## 1-3/4" Kerto LVL S-beam Maximum Uniform Load (PLF) 125% for Roof Loads (non snow)

CLEAR SPAN	DEFL/BRG	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
18'	Live L/360			53	57	96	113	185	271	385	518	690	878
	Live L/240			80	86	144	169	277	406	578	763	910	1054
	Total L/180			106	115	192	226	370	511	636	763	910	1054
	Brg (in.)			3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	6.0	7.5
19'	Live L/360			45	49	81	96	157	235	329	451	589	750
	Live L/240			68	74	122	144	236	353	493	669	819	950
	Total L/180			91	98	163	192	315	452	572	669	819	950
	Brg (in.)			3.0	3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	7.5
20'	Live L/360				42	70	82	135	202	283	388	507	658
	Live L/240				63	105	124	203	303	424	582	741	840
	Total L/180				84	140	165	271	404	517	629	741	840
	Brg (in.)				3.0	3.0	3.0	3.0	3.0	4.5	4.5	6.0	6.0
22'	Live L/360							102	152	213	293	390	498
	Live L/240							153	228	320	439	581	722
	Total L/180							204	305	427	521	581	722
	Brg (in.)							3.0	3.0	4.5	4.5	4.5	6.0
24'	Live L/360							78	117	167	226	301	385
	Live L/240							118	176	251	340	452	578
	Total L/180							157	235	335	439	524	609
	Brg (in.)							3.0	3.0	3.0	4.5	4.5	6.0
26'	Live L/360							62	92	132	181	238	309
	Live L/240							93	139	198	272	357	463
	Total L/180							124	185	264	332	447	494
	Brg (in.)							3.0	3.0	3.0	3.0	4.5	4.5
28'	Live L/360							49	74	106	145	191	248
	Live L/240							74	111	159	218	286	372
	Total L/180							99	149	212	291	382	454
	Brg (in.)							3.0	3.0	3.0	3.0	4.5	4.5
30'	Live L/360							40	60	86	118	157	202
	Live L/240							61	91	129	177	236	303
	Total L/180							81	121	172	237	289	396
	Brg (in.)							3.0	3.0	3.0	3.0	3.0	4.5

CLEAR SPAN	DEFL/BRG	16"	18"
18'	Live L/360	271	385
	Live L/240	406	578
	Total L/180	511	636
	Brg (in.)	4.5	4.5

**Example:** A floor beam with 18' - 0" clear span needs to carry 300 PLF Live and 480 PLF Total Load.

Refer to the Roof PLF Table for **1-3/4" x 16"**

Roof live load capacity = 406 PLF which exceeds the roof live load requirement of 300 PLF

However If a higher performance beam is required with a live load deflection limit of L/360

Roof live load capacity = 271 PLF which does not meet the live load requirement of 300 PLF

Refer to the Roof PLF Table for **1-3/4" x 18"**

Roof live load capacity = 385 PLF which exceeds the live load requirement of 300 PLF

Total load capacity = 636 PLF which exceeds the total load requirement of 480 PLF

1-3/4 x 18" is necessary to meet a live load deflection limit of L/360

Required bearing = 4.5" for 627 PLF total load

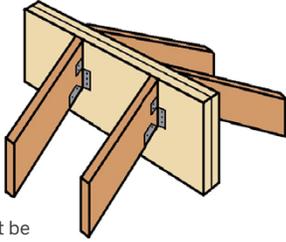
Since total load = 480 PLF then  $480/636 \times 4.5 = 3.4$ " bearing may be used.

This value may be conservative, specific analysis may produce a better result.

**Note:** Two (2) or more 1-3/4" plies are recommended for depths greater than 16 inches.

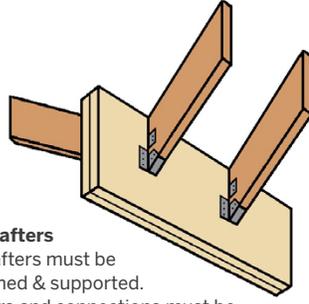
Examples shown here are for loads on a single ply of a multiple ply member.

# Installation Details for Roofs



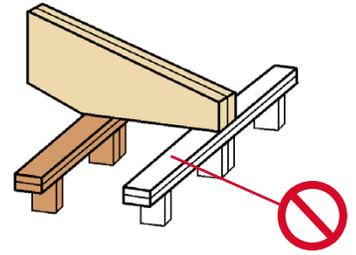
## Ridge Beam

Ridge Beam must be properly designed & supported. Common rafters and connections must be properly designed.



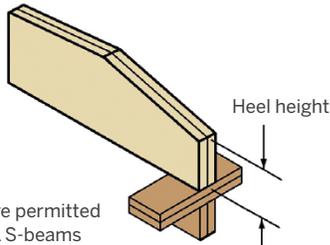
## Hip & Valley Rafters

Hip & Valley Rafters must be properly designed & supported. Common rafters and connections must be properly designed.



## Hip & Valley Rafter Cuts

Hip or Valley Rafter is required to be full depth (uncut) at inside edge of bearing.



## Scarf Cuts

Scarf Cuts are permitted for Kerto LVL S-beams as specified in the table. Scarf cuts may be specially designed by software or other competent analysis.

### MAXIMUM REACTION FOR SCARF CUTS (LBS)

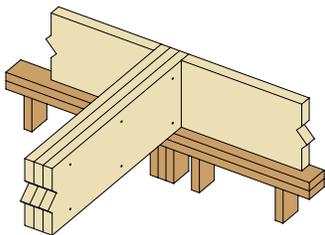
BEAM DEPTH	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"
<b>SLOPE RANGE</b> <b>1-1/2" Kerto LVL S-beam</b>									
<b>3:12 to &lt; 9:12</b>	1056	1392	1776	1824	2160	2280	2688	3072	3456
<b>9:12 to 12:12</b>	1134	1495	1908	1959	2320	2449	2887	3300	3712
<b>SLOPE RANGE</b> <b>1-3/4" Kerto LVL S-beam</b>									
<b>3:12 to &lt; 9:12</b>	1232	1624	2072	2128	2520	2660	3136	3584	4032
<b>9:12 to 12:12</b>	1323	1744	2226	2286	2707	2857	3368	3850	4331

### MINIMUM HEEL HEIGHT FOR SCARF CUTS (IN)

BEARING RANGE	1-1/2" & 1-3/4" Kerto LVL S-beam					Slope: 3:12 to < 9:12			
<b>3" to &lt; 5-1/4"</b>	2-9/16"	3-5/8"	4-13/16"	5-3/4"	6"	6-3/8"	7-11/16"	8-7/8"	10-1/16"
<b>5-1/4" or more</b>	2"	3-1/16"	4-1/4"	4-7/16"	5-7/16"	5-13/16"	7-1/6"	8-5/16"	9-1/2"
BEARING RANGE	1-1/2" & 1-3/4" Kerto LVL S-beam					Slope: 9:12 to 12:12			
<b>3" to &lt; 5-1/4"</b>	2"	2-1/8"	3-5/16"	3-1/2"	4-1/2"	4-7/8"	6-3/16"	7-3/8"	10-13/16"
<b>5-1/4" or more</b>	2"	2"	2"	2"	2-13/16"	3-3/16"	4-1/2"	5-11/16"	6-7/8"

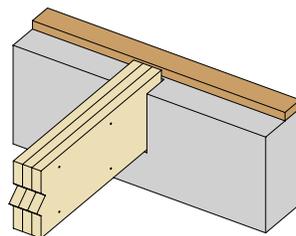
Reactions are for 1 - ply Kerto LVL S-beam. For 2 - plies multiply by 2. For 3 - plies multiply by 3  
 Maximum Reactions are for Bearings and Minimum Heel heights shown.  
 Maximum Reactions are for Floor loads (100%). Specific analysis for roof loads may produce higher reactions.

# Installation Details for Floors



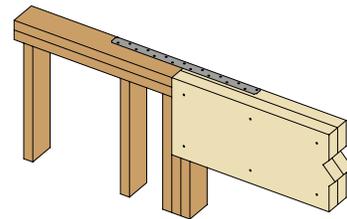
## Bearing at Wall

Kerto LVL S-beam may require full width of wall plate for bearing. Rim board or blocking must be provided for lateral restraint to prevent rotation at support.



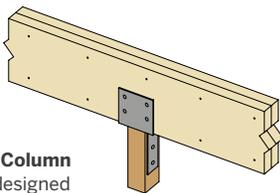
## Bearing at Concrete Wall

Protect Kerto LVL S-beam from direct contact with concrete as required by building code. Beam connection to wall must be designed and provided as required by building code.



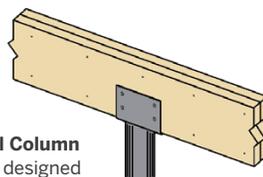
## Bearing for Headers

Provide adequate bearing for Kerto LVL S-beam as specified in this product guide or designed by software or other competent analysis. Provide properly designed strap if top plate is not continuous over header.



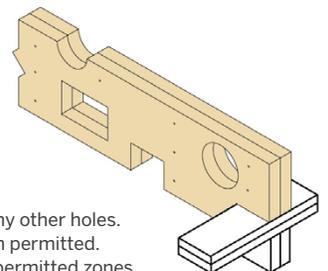
## Bearing at Wood Column

Provide properly designed column cap to carry Kerto LVL S-beam reaction. Column cap must provide adequate lateral restraint to prevent rotation at support or other adequate restraint must be provided.



## Bearing at Steel Column

Provide properly designed column cap to carry Kerto LVL S-beam reaction. Column cap must provide adequate lateral restraint to prevent rotation at support or adequate restraint must be provided by framing or other means.



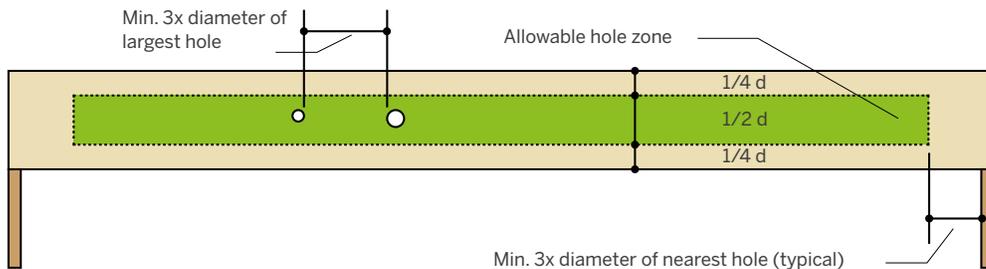
## Notches and holes

Only circular holes are permitted

### DON'T:

Cut rectangular or any other holes. Drill larger holes than permitted. Drill holes except in permitted zones. Notch Kerto LVL S-beams. Cope or notch beams over support.

# Allowable Holes for Uniformly Loaded Beams



1. Only circular holes are permitted
2. 1-3/4" max. diameter, cut neatly with a drill or hole saw.
3. For other hole configurations, use Finnwood software, iStruct® software or other competent analysis.

The following charts may be used to calculate circular holes for other span and loading conditions. Contact a design professional for analysis.

## Allowable Shear and Moment Capacity for 1-1/2" Kerto LVL S-beam

BEAM DEPTH	MAX HOLE DIA.	DESIGN PROPERTY	NO HOLE	CIRCULAR HOLE DIAMETER (IN)					
				2"	3"	4"	5"	6"	7"
9-1/4"	3.7"	Shear (lb)	2955	2095	1915	1735			
		Moment (ft. lb)	5375	4600	4565	4565			
9-1/2"	3.8"	Shear (lb)	3035	2155	1970	1790			
		Moment (ft. lb)	5645	4840	4795	4795			
11-1/4"	4.5"	Shear (lb)	3595	2575	2370	2160	1950		
		Moment (ft. lb)	7720	6685	6555	6555	6555		
11-7/8"	4.75"	Shear (lb)	3795	2730	2510	2290	2070		
		Moment (ft. lb)	8530	7420	7255	7255	7255		
14"	5.6"	Shear (lb)	4475	3260	3005	2755	2510	2255	
		Moment (ft. lb)	11570	10190	9905	9820	9820	9820	
16"	6.4"	Shear (lb)	5115	3760	3480	3205	2930	2645	
		Moment (ft. lb)	14810	13180	12790	12600	12575	12575	
18"	7.2"	Shear (lb)	5755	4275	3970	3665	3355	3055	2750
		Moment (ft. lb)	18415	16545	16035	15745	15635	15635	15635

## Notes

1. Only circular holes are allowed. Holes must be clean cut and smooth.
2. Holes must be less than 40% of the overall beam depth.
3. Holes must be located in the middle half of the beam depth (leaving at least 1/4 of the total beam depth remaining above or below the hole).
4. No adjustment to MOE is required for holes.
5. Multiple holes must be 3 diameters apart (edge to edge) apart and three diameters from any bearing or supports.
6. Only two holes are allowed in any beam and conditions with more than two holes are beyond the scope of this report.
7. If two holes are used, multiply values given for Shear and Moment by 0.70 to determine allowable shear or moment capacity at that location.
8. Interpolation of the above charts is permitted. For example a 3.8" hole in a 9.5" beam would have a Shear capacity of  $1970 - ((1970 - 1790) \times 0.8) = 1826$  lbs. If two holes are installed the shear capacity would be  $1826 \times 0.70 = 1278$  lbs.
9. Reductions in capacity only apply at the point in the beam where the hole(s) are located.
10. Do not use the holes in this chart for fire rated applications.
11. For other hole conditions, please consult with your PE or one of the Metsä Wood distributors.

## Allowable Shear and Moment Capacity for 1-3/4" Kerto LVL S-beam

BEAM DEPTH	MAX HOLE DIA.	DESIGN PROPERTY	NO HOLE	CIRCULAR HOLE DIAMETER (IN)					
				2"	3"	4"	5"	6"	7"
9-1/4"	3.7"	Shear (lb)	3450	2450	2235	2030			
		Moment (ft. lb)	6270	5370	5330	5330			
9-1/2"	3.8"	Shear (lb)	3545	2515	2300	2090			
		Moment (ft. lb)	6590	5650	5595	5595			
11-1/4"	4.5"	Shear (lb)	4200	3010	2770	2525	2280		
		Moment (ft. lb)	9010	7805	7650	7650	7650		
11-7/8"	4.75"	Shear (lb)	4430	3190	2930	2675	2420		
		Moment (ft. lb)	9955	8660	8470	8470	8470		
14"	5.6"	Shear (lb)	5225	3805	3510	3220	2930	2635	
		Moment (ft. lb)	13500	11890	11560	11460	11460	11460	
16"	6.4"	Shear (lb)	5970	4390	4070	3745	3420	3090	
		Moment (ft. lb)	17280	15380	14925	14705	14675	14675	
18"	7.2"	Shear (lb)	6720	4990	4635	4280	3920	3565	3210
		Moment (ft. lb)	21490	19305	18710	18375	18245	18245	18245

# 3-1/2" and 5-1/4" Kerto LVL S-beam Columns

## Kerto LVL S-beam Columns Maximum Allowable Axial Load (LBS)

COLUMN LENGTH	3-1/2" x 3-1/2"			3-1/2" x 5-1/4"			3-1/2" x 7-1/4"			5-1/4" x 5-1/4"			5-1/4" x 7-1/4"		
	100%	115%	125%	100%	115%	125%	100%	115%	125%	100%	115%	125%	100%	115%	125%
4'	16390	18100	19150	25590	28250	29870	35320	38980	40000	40000	40000	40000	40000	40000	40000
5'	14080	15200	15850	21910	23620	24610	30220	32580	33940	40000	40000	40000	40000	40000	40000
6'	11760	12470	12880	18220	19280	19890	25140	26590	27430	36880	40000	40000	40000	40000	40000
7'	9760	10230	10510	15060	15760	16160	20770	21730	22280	33450	36400	38130	40000	40000	40000
8'	8150	8490	8680	12540	13030	13310	17290	17960	18340	29900	32060	33300	40000	40000	40000
9'	6880	7120	7260	10550	10900	11110	14550	15030	15310	26470	28060	28980	37770	39890	40000
10'	5870	6050	6160	8980	9240	9400	12380	12740	12950	23370	24580	25270	33250	34890	35850
11'	5060	5200	5280	7720	7920	8040	10640	10920	11080	20670	21610	22160	29330	30610	31340
12'	4400	4510	4570	6700	6860	6950	9240	9450	9580	18350	19100	19530	25980	27000	27580
13'	3850	3940	3990	5870	5990	6070	8090	8260	8360	16370	16980	17330	23130	23950	24410
14'	3410	3480	3520	5180	5280	5340	7130	7270	7350	14670	15170	15450	20690	21360	21740
15'	-	-	-	-	-	-	-	-	-	13210	13620	13860	18600	19160	19470
16'	-	-	-	-	-	-	-	-	-	11950	12300	12490	16810	17270	17530
17'	-	-	-	-	-	-	-	-	-	10850	11150	11310	15250	15640	15860
18'	-	-	-	-	-	-	-	-	-	9900	10150	10290	13890	14220	14410
19'	-	-	-	-	-	-	-	-	-	9060	9280	9400	12700	12990	13150
20'	-	-	-	-	-	-	-	-	-	8320	8510	8620	11660	11900	12040
21'	-	-	-	-	-	-	-	-	-	7670	7830	7920	10730	10950	11070

### Notes

1. Column table is suitable for interior columns with axial loads, no lateral loads.
2. Provide adequate column base supports for vertical loads and lateral restraint.
3. Provide adequate column connections at top for vertical loads and lateral restraint.
4. Loads in table are calculated with an eccentricity of 1/6 of either section dimension to produce the most critical case.



# Kerto LVL S-beam - Wall Framing. Vertical and Lateral Load Capacities and Deflections

STUD LENGTH	VERTICAL LOAD & DEFLECTION	1-1/2" X 3-1/2"				1-1/2" X 5-1/2"					1-1/2" X 7-1/4"				
		LATERAL WIND LOAD (PLF)				LATERAL WIND LOAD (PLF)					LATERAL WIND LOAD (PLF)				
		0	15	20	30	0	20	30	40	50	0	20	30	40	50
8'	Load (lb)	2785	2785	2785	2785	4380	4380	4380	4380	4380	5775	5775	5775	5775	5775
	Defl (L/)	-	707	530	354	-	2058	1372	1029	823	-	4714	3143	2357	1886
9'	Load (lb)	2785	2785	2785	2785	4380	4380	4380	4380	4380	5775	5775	5775	5775	5775
	Defl (L/)	-	497	372	248	-	1445	964	723	578	-	3311	2207	1655	1324
10'	Load (lb)	2700	2700	2700	2350	4380	4380	4380	4380	4380	5775	5775	5775	5775	5775
	Defl (L/)	-	362	272	181	-	1054	702	527	421	-	2413	1609	1207	965
11'	Load (lb)	2350	2350	2130	1820	4380	4380	4380	4380	4380	5775	5775	5775	5775	5775
	Defl (L/)	-	272	204	136	-	792	528	396	317	-	1813	1209	907	725
12'	Load (lb)	2050	2050	1755	-	4380	4380	4380	4380	4380	5775	5775	5775	5775	5775
	Defl (L/)	-	210	157	-	-	610	407	305	244	-	1397	931	698	559
13'	Load (lb)	1650	1650	1405	-	4380	4380	4380	4380	4380	5775	5775	5775	5775	5775
	Defl (L/)	-	165	124	-	-	480	320	240	192	-	1099	732	549	439
14'	Load (lb)	1460	1355	-	-	4380	4380	4380	4380	4160	5775	5775	5775	5775	5775
	Defl (L/)	-	132	-	-	-	384	256	192	154	-	880	586	440	352
15'	Load (lb)	-	-	-	-	4380	4380	4290	3850	3400	5775	5775	5775	5775	5775
	Defl (L/)	-	-	-	-	-	312	208	156	125	-	715	477	358	286
16'	Load (lb)	-	-	-	-	4220	4220	3650	3200	-	5775	5775	5775	5775	5775
	Defl (L/)	-	-	-	-	-	257	172	129	-	-	589	393	295	236
17'	Load (lb)	-	-	-	-	3845	3845	3100	-	-	5775	5775	5775	5775	5775
	Defl (L/)	-	-	-	-	-	214	143	-	-	-	491	327	246	196
18'	Load (lb)	-	-	-	-	3515	3100	2635	-	-	5775	5775	5775	5775	5775
	Defl (L/)	-	-	-	-	-	181	120	-	-	-	414	276	207	166
19'	Load (lb)	-	-	-	-	3225	2700	-	-	-	5775	5775	5775	5770	5200
	Defl (L/)	-	-	-	-	-	154	-	-	-	-	352	235	176	141
20'	Load (lb)	-	-	-	-	2970	2350	-	-	-	5775	5740	5570	5020	4460
	Defl (L/)	-	-	-	-	-	132	-	-	-	-	302	201	151	121
21'	Load (lb)	-	-	-	-	2740	-	-	-	-	5655	5280	4940	4360	-
	Defl (L/)	-	-	-	-	-	-	-	-	-	-	261	174	130	-
22'	Load (lb)	-	-	-	-	2535	-	-	-	-	5260	4860	4380	-	-
	Defl (L/)	-	-	-	-	-	-	-	-	-	-	227	151	-	-
23'	Load (lb)	-	-	-	-	-	-	-	-	-	4910	4480	3870	-	-
	Defl (L/)	-	-	-	-	-	-	-	-	-	-	198	132	-	-
24'	Load (lb)	-	-	-	-	-	-	-	-	-	4590	4020	-	-	-
	Defl (L/)	-	-	-	-	-	-	-	-	-	-	175	-	-	-

## Notes and Instructions:

Vertical loads in columns with 0 plf for Lateral Wind Load are for interior wall applications with no lateral wind load on the studs. Vertical loads in other columns are the loads the studs will carry with the Lateral Wind Loads (plf) shown.

The designer must calculate all loads including wind loads using all appropriate factors and reductions as specified by the building code. Make sure the loads shown in the table for the Kerto LVL S-beam you are using, meet or exceed the calculated, code-compliant loads. And the deflection limit meets or exceeds the requirements for the application and finishes to be used.

Wind loads shown produce the deflections shown. There are no hidden factors applied. Make sure Kerto LVL S-beams are properly installed and braced and the structure is properly stabilized before applying any loads.

## Design Assumptions:

Kerto LVL S-beams are designed for vertical floor live loads with normal (10 year) load duration. ( $C_D = 1.0$ )

Kerto LVL S-beams may carry more load if snow load or construction load is applied. (Where  $C_D = 1.15$  or  $1.25$ )

Horizontal wind loads are designed for 10 minute load duration. ( $CD = 1.6$ )

Kerto LVL S-beams are loaded edgewise which is the typical orientation and loading for a stud. Horizontal loads such as wind loads are applied to the edgewise orientation.

Kerto LVL S-beams are laterally braced by continuous sheathing and drywall as well as blocking at 8' max. O.C.

Kerto LVL S-beams are considered to be unbraced for buckling about the strong axis. ( $Ke = 0.95$ ) for some stress calculations.

$Ke = 1.0$  for some stresses and all deflections.

Axial load is applied with an eccentricity of  $d/6$  where  $d$  = depth of the stud.

Kerto LVL S-beams are designed for combined axial stress + bending stress due to eccentricity.

Kerto LVL S-beams are to be spaced at 2' or less on center.

A factor of 1.04 has been applied to  $F_b$  for repetitive members.

Loads are limited by bearing on SPF top or bottom plate ( $F_c$  perpendicular = 425 psi)

And studs are located at least 3" from end of top or bottom plate with permitted adjustment to  $F_c$ .

# Multiple Member Connections

## General Notes

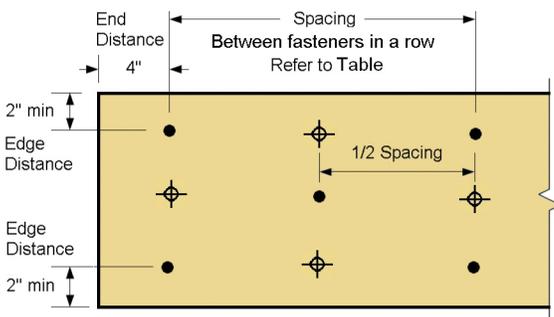
1. Maximum loads for fasteners are shown in the table on the facing page.
2. Connections are for uniform loads listed in this product guide. Concentrated or other load conditions require special design.
3. Make sure the load capacity of the beam meets or exceeds the load capacity of the fasteners.
4. 4 – ply beams must be top loaded or loaded equally from both faces. For other load conditions, special design is required to avoid torsional stresses in the beam.
5. Do not use more than 4 – plies for multiple member beams.

## Multiple Member Connections for Top Loaded beams

1. Load must be equally distributed to each ply of the multiple member beam.
2. Use the minimum connections; nails, bolts or screws from the SIDE LOADED table.

## Multiple Member Connections for Side Loaded beams

1. Loads may be applied to either or both faces of the beam. Make sure load applied to either face does not exceed the value in the table.
2. Maximum Uniform Loads (PLF) shown in the table are for normal load duration. Appropriate Load Duration Factors may be applied to the values as permitted by the building code.



### INSTALLATION NOTES:

**Nails:** Offset nails at least 2" from nails in adjacent ply to avoid splitting.

### Screws:

● Head side    ⊕ Point side

1. Drive screws from opposite face between screws in row as shown.
2. Install screws according to manufacturer's instructions.
3. SDW screws. End distance = 6"



# Multiple Member connections for side loaded beams

FOR 1-1/2"

## MAXIMUM UNIFORM LOAD (PLF) APPLIED TO EITHER FACE OF BEAM

FASTENER TYPE	ROWS	SPACING	2-PLY 1-1/2" (3" WIDE)			3-PLY 1-1/2" (4-1/2" WIDE)			4-PLY 1-1/2" (6" WIDE)		
			7-1/4" to 11-7/8"	14" to 18"	< 18" to 24"	7-1/4" to 11-7/8"	14" to 18"	< 18" to 24"	7-1/4" to 11-7/8"	14" to 18"	< 18" to 24"
10d common nails 0.148 x 3"	2	12"	435			325			4 - ply connections require bolts or screws		
	3	12"	650	650		490	490				
	4	12"	870	870	870	650	650	650			
0.131 pneumatic "gun" nails 0.131 x 3"	2	12"	360			270			4 - ply connections require bolts or screws		
	3	12"	540	540		405	405				
	4	12"	720	720	720	540	540	540			
1/2" Diameter A307 Bolts with Fender Washers each face	2	24"	440	440		465	465		440	440	
	2	16"	660	660		695	695		660	660	
	3	24"		660	660		695	695		660	660
	3	16"		990	990		1045	1045		990	990
Simpson Strong-Drive® SDW Screws			Screw length 3" One face			Screw length 3" Both faces			Screw length 4-1/2" Both faces		
	2	24"	400	400		300	300		333	333	
	2	16"	600	600		450	450		500	500	
	3	24"	600	600	600	450	450	450	500	500	500
USP WS Screws	3	16"	900	900	900	675	675	675	750	750	750
	2	24"	586	586		439	439		439	439	
	2	16"	879	879		658	658		658	658	
	3	24"	879	879	879	658	658	658	658	658	658
3	16"	1318	1318	1318	987	987	987	987	987	987	
Simpson Strong-Drive® SDW Screws			Screw length 2-15/16" One face			Screw length 4-3/8" One face			Screw length 6" One face		
	2	24"	510	510		380	380		340	340	
	2	16"	765	765		570	570		510	510	
	3	24"	765	765	765	570	570	570	510	510	510
FastenMaster® TrussLOK® Screws	3	16"	1147	1147	1147	860	860	860	765	765	765
	2	24"	400	400		300	300		267	267	
	2	16"	600	600		450	450		400	400	
	3	24"	600	600	600	450	450	450	400	400	400
3	16"	900	900	900	675	675	675	600	600	600	

Loads are for 10 year duration (100%) and may be adjusted for other durations as permitted by the building code (160% maximum).

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# Multiple Member Connections for Side Loaded Beams

FOR 1-3/4"

MAXIMUM UNIFORM LOAD (PLF) APPLIED TO EITHER FACE OF 2-PLY & 3-PLY BEAMS. APPLIED EQUALLY TO BOTH FACES OF 4-PLY BEAMS.

FASTENER TYPE	ROWS	SPACING	2-PLY 1-3/4" (3-1/2" WIDE)			3-PLY 1-3/4" (5-1/4" WIDE)			4-PLY 1-3/4" (7" WIDE)		
			7-1/4" to 11-7/8"	14" to 18"	< 18" to 24"	7-1/4" to 11-7/8"	14" to 18"	< 18" to 24"	7-1/4" to 11-7/8"	14" to 18"	< 18" to 24"
16d common nails 0.162 x 3 1/2"	2	12"	520			390			4 - ply connections require bolts or screws		
	3	12"	780	780		585	585				
	4	12"	1040	1040	1040	780	780	780			
16d pneumatic "gun" nails 0.131 x 3 1/4"	2	12"	360			270			4 - ply connections require bolts or screws		
	3	12"	540	540		405	405				
	4	12"	720	720	720	540	540	540			

FASTENER TYPE	ROWS	SPACING	2-PLY 1-3/4" (3-1/2" WIDE)			3-PLY 1-3/4" (5-1/4" WIDE)			4-PLY 1-3/4" (7" WIDE)	
1/2" Diameter A307 Bolts with Fender Washers each face	2	24"	500	500		375	375	333	333	
	2	16"	750	750		562	562	500	500	
	3	24"		750	750		562	562	500	500
	3	16"		1125	1125		843	843	750	750

FASTENER TYPE	ROWS	SPACING	2-PLY 1-3/4" (3-1/2" WIDE)			3-PLY 1-3/4" (5-1/4" WIDE)			4-PLY 1-3/4" (7" WIDE)		
Simpson Strong-Tie® SDW Screws			Screw length 3-1/2" One face			Screw length 3-1/2" Both faces			Screw length 6" Both faces		
	2	24"	490	490		367	367	326	326		
	2	16"	735	735		551	551	490	490		
	3	24"	735	735	735	551	551	551	490	490	490
USP WS Screws	3	16"	1102	1102	1102	826	826	826	735	735	735
	2	24"	586	586		439	439	390	390		
	2	16"	879	879		659	659	586	586		
	3	24"	879	879	879	659	659	659	586	586	586
3	16"	1318	1318	1318	988	988	988	879	879	879	

FASTENER TYPE	ROWS	SPACING	2-PLY 1-3/4" (3-1/2" WIDE)			3-PLY 1-3/4" (5-1/4" WIDE)			4-PLY 1-3/4" (7" WIDE)		
Simpson Strong-Tie® SDW Screws			Screw length 3-3/8" One face			Screw length 5" One face			Screw length 6-3/4" One face		
	2	24"	510	510		385	385	340	340		
	2	16"	765	765		577	577	510	510		
	3	24"	765	765	765	577	577	577	510	510	510
FastenMaster® TrussLOK® Screws	3	16"	1147	1147	1147	866	866	866	765	765	765
	2	24"	436	436		384	384	341	341		
	2	16"	654	654		573	573	511	511		
	3	24"	654	654	652	573	573	573	511	511	511
3	16"	980	980	980	860	860	860	767	767	767	

# Simpson Strong-Tie® Connectors for 1-3/4" Kerto LVL S-beam

DEPTH	TOP MOUNT						FACE MOUNT					
	MODEL	SEAT LENGTH	FASTENER TYPE		UPLIFT	LOAD (100%)	MODEL	SEAT LENGTH	FASTENER TYPE		UPLIFT	LOAD (100%)
			HEADER	BEAM					HEADER	BEAM		
<b>1-3/4" Kerto LVL S-beam</b>												
7-1/4"	LBV1.81/7.25	3	10-16d	2-10dx11/2	265	2910	HU7	2-1/2	16-16d	8-10dx11/2	1515	2050
9-1/4"	LBV1.81/9.25	3-1/2	10-16d	2-10dx11/2	265	2910	HUS1.81/10	3	30-16d	10-16d	2580	4705
9-1/2"	MIT9.5	2-1/2	8-16d	2-10dx11/2	215	2550	HUS1.81/10	3	30-16d	10-16d	2580	4705
11-1/4"	LBV1.81/11.25	2-1/2	10-16d	2-10dx11/2	265	2910	HUS1.81/10	3	30-16d	10-16d	2580	4705
11-7/8"	BA1.81/11.88	2-1/2	16-16d	2-10dx11/2	265	4015	HUS1.81/10	3	30-16d	10-16d	2580	4705
14"	BA1.81/14	2-1/2	10-16d	4-10dx11/2	265	4015	HUS1.81/10	3	30-16d	10-16d	2580	4705
<b>2 Ply 1-3/4" Kerto LVL S-beam</b>												
7-1/4"	WPU3.56/7.25	3-1/4	7-16d	6-10dx11/2	1095	4700	HGUS48	4	36-16d	12-16d	2782	6415
9-1/4"	HWU3.56/9.25	3-1/4	8-16d	6-10d	1135	6335	HGUS410	4	46-16d	16-16d	3521	7825
9-1/2"	HWU3.56/9.5	3-1/4	8-16d	6-10d	1160	6335	HGUS410	4	46-16d	16-16d	3521	7825
11-1/4"	HWU3.56/11.25	3-1/4	8-16d	6-10d	1135	6335	HGUS412	4	56-16d	20-16d	4388	8255
11-7/8"	HWU3.56/11.88	3-1/4	8-16d	6-10d	1160	6335	HGUS412	4	56-16d	20-16d	4388	8255
14"	HWU3.56/14	3-1/4	8-16d	6-10d	1135	6335	HGUS414	4	66-16d	22-16d	4742	8255
16"	HWU3.56/16	3-1/4	8-16d	6-10d	1160	6335	HGUS414	4	66-16d	22-16d	4742	8255
18"	HWU3.56/18	3-1/4	8-16d	6-10d	1160	6335	HGUS414	4	66-16d	22-16d	4742	8255
20"	HWU3.56/20	3-1/4	8-16d	6-10d	965	6335	N/A					
24"	HWI424	2-1/2	4-16d	4-10d	0	5100	N/A					
<b>3 Ply 1-3/4" Kerto LVL S-beam</b>												
7-1/4"	WPU5.50/7.25	3	7-16d	6-10d	1095	4700	HGUS5.50/8	4	36-16d	12-16d	2782	6415
9-1/4"	HWU5.50/9.25	3-1/4	8-16d	6-10d	1160	6000	HGUS5.50/10	4	46-16d	16-16d	3521	7825
9-1/2"	HWU5.50/9.5	3-1/4	8-16d	6-10d	1160	6000	HGUS5.50/10	4	46-16d	16-16d	3521	7825
11-1/4"	HWU5.50/11.25	3-1/4	8-16d	6-10d	1160	6000	HGUS5.50/12	4	56-16d	20-16d	4388	8255
11-7/8"	HWU5.50/11.88	3-1/4	8-16d	6-10d	1160	6000	HGUS5.50/12	4	56-16d	20-16d	4388	8255
14"	HWU5.50/14	3-1/4	8-16d	6-10d	1160	6000	HGUS5.50/14	4	66-16d	22-16d	4742	8255
16"	HWU5.50/16	3-1/4	8-16d	6-10d	1160	6000	HGUS5.50/14	4	66-16d	22-16d	4742	8255
18"	HWU5.50/18	3-1/4	8-16d	6-10d	1160	6000	HGUS5.50/14	4	66-16d	22-16d	4742	8255
20"	HWU5.50/20	3-1/4	8-16d	6-10d	965	6000	N/A					
24"	N/A						N/A					
<b>4 Ply 1-3/4" Kerto LVL S-beam</b>												
9-1/4"	GLTV49.25-2	5	10-16d	6-16d	1295	7500	HGUS7.25/10	4	46-16d	16-16d	3521	7825
9-1/2"	GLTV49.5-2	5	10-16d	6-16d	1295	7500	HGUS7.25/10	4	46-16d	16-16d	3521	7825
11-1/4"	HGLTV411.25-2	6	18-16d	6-16d	1295	10500	HGUS7.25/12	4	56-16d	20-16d	4388	8255
11-7/8"	HGLT411.88-2	6	18-16d	6-16d	1295	10500	HGUS7.25/12	4	56-16d	20-16d	4388	8255
14"	HGLT4114-2	6	18-16d	6-16d	1295	10500	HGUS7.25/14	4	66-16d	22-16d	4742	8255
16"	HGLT416-2	6	18-16d	6-16d	1295	10500	HGUS7.25/14	4	66-16d	22-16d	4742	8255
18"	HGLT418-2	6	18-16d	6-16d	1295	10500	HGUS7.25/14	4	66-16d	22-16d	4742	8255
20"	HGLT420-2	6	18-16d	6-16d	1295	10500	N/A					
24"	HGLT7.12/24	6	18-16d	6-16d	1295	10500	N/A					



Images courtesy of Simpson Strong-Tie®

# USP Connectors for 1-3/4" Kerto LVL S-beam

DEPTH	TOP MOUNT						FACE MOUNT					
	USP MODEL	SEAT LENGTH	FASTENER TYPE		UPLIFT	LOAD (100%)	MODEL	SEAT LENGTH	FASTENER TYPE		UPLIFT	LOAD (100%)
			HEADER	BEAM					HEADER	BEAM		
<b>1-3/4" Kerto LVL S-beam</b>												
7-1/4"	PHXU17725	3-1/4	8-16d	6-10dx11/2	1035	4420	HD1770	2	14-16d	4-10dx11/2	660	1775
9-1/4"	BPH17925	2-3/8	10-16d	4-10dx11/2	625	3340	HUS179	3	30-16d	10-16d	2595	4465
9-1/2"	BPH1795	2-3/8	10-16d	4-10dx11/2	625	3340	HUS179	3	30-16d	10-16d	2595	4465
11-1/4"	BPH17112	2-3/8	10-16d	4-10dx11/2	625	3340	HUS179	3	30-16d	10-16d	2595	4465
11-7/8"	BPH17118	2-3/8	10-16d	4-10dx11/2	625	3340	HUS179	3	30-16d	10-16d	2595	4465
14"	BPH1714	2-3/8	10-16d	4-10dx11/2	625	3340	HUS179	3	30-16d	10-16d	2595	4465
<b>2 Ply 1-3/4" Kerto LVL S-beam</b>												
7-1/4"	PHXU35725	3-1/4	8-16d	6-10d	1290	6650	N/A					
9-1/4"	PHXU35925	3-1/4	8-16d	6-10d	1290	6650	THDH410	4	46-16d	12-16d	2620	7190
9-1/2"	PHXU3595	3-1/4	8-16d	6-10d	1290	6650	THDH410	4	46-16d	12-16d	2620	7190
11-1/4"	PHXU35112	3-1/4	8-16d	6-10d	1290	6650	THDH412	4	56-16d	14-16d	3055	7875
11-7/8"	PHXU35118	3-1/4	8-16d	6-10d	1290	6650	THDH412	4	56-16d	14-16d	3055	7875
14"	PHXU3514	3-1/4	8-16d	6-10d	1290	6650	THDH414	4	66-16d	16-16d	3365	9705
16"	PHXU3516	3-1/4	8-16d	6-10d	1290	6650	THDH414	4	66-16d	16-16d	3365	9705
18"	PHXU3518	3-1/4	8-16d	6-10d	1290	6650	THDH414	4	66-16d	16-16d	3365	9705
20"	PHXU3520	3-1/4	8-16d	6-10d	1290	6650	THDH414	4	66-16d	16-16d	3365	9705
24"	PHXU3524	3-1/4	8-16d	6-10d	1290	6650	N/A					
<b>3 Ply 1-3/4" Kerto LVL S-beam</b>												
7-1/4"	BPH55725	2-1/4	10-16d	6-10d	815	3450	N/A					
9-1/4"	PHXU55925	3-1/4	8-16d	6-10d	1290	6650	THDH610	4	46-16d	16-16d	3365	8295
9-1/2"	PHXU5595	3-1/4	8-16d	6-10d	1290	6650	THDH610	4	46-16d	16-16d	3365	8295
11-1/4"	PHXU55112	3-1/4	8-16d	6-10d	1290	6650	THDH612	4	56-16d	20-16d	5280	10365
11-7/8"	PHXU55118	3-1/4	8-16d	6-10d	1290	6650	THDH612	4	56-16d	20-16d	5280	10365
14"	PHXU5514	3-1/4	8-16d	6-10d	1290	6650	THDH614	4	66-16d	22-16d	5280	10365
16"	PHXU5516	3-1/4	8-16d	6-10d	1290	6650	THDH614	4	66-16d	22-16d	5280	10365
18"	PHXU5518	3-1/4	8-16d	6-10d	1290	6650	THDH614	4	66-16d	22-16d	5280	10365
20"	PHXU5520	3-1/4	8-16d	6-10d	1290	6650	THDH614	4	66-16d	22-16d	5280	10365
24"	N/A						N/A					
<b>4 Ply 1-3/4" Kerto LVL S-beam</b>												
9-1/4"	HLBH71925	6	15-NA16D-RS	6-16d	1605	10620	THDH7210	4	46-16d	12-16d	2525	7900
9-1/2"	HLBH7195	6	15-NA16D-RS	6-16d	1605	10620	THDH7210	4	46-16d	12-16d	2525	7900
11-1/4"	HLBH71112	6	15-NA16D-RS	6-16d	1605	10620	THDH7212	4	56-16d	14-16d	2525	7900
11-7/8"	HLBH71118	6	15-NA16D-RS	6-16d	1605	10620	THDH7212	4	56-16d	14-16d	2525	7900
14"	HLBH7114	6	15-NA16D-RS	6-16d	1605	10620	THDH7214	4	56-16d	14-16d	3365	9615
16"	HLBH7116	6	15-NA16D-RS	6-16d	1605	10620	THDH7214	4	66-16d	16-16d	3365	9615
18"	HLBH7118	6	15-NA16D-RS	6-16d	1605	10620	THDH7214	4	66-16d	16-16d	3365	9615
20"	HLBH7120	6	15-NA16D-RS	6-16d	1605	10620	THDH7214	4	66-16d	16-16d	3365	9615
24"	HLBH7124	6	15-NA16D-RS	6-16d	1605	10620	HD7180	21/2	28-16d	8-10d	1375	3545



Images courtesy of USP Structural Connectors®

# Limited Lifetime Warranty

## Kerto LVL Products

Metsä Wood USA, Inc. (“Metsä Wood”) warrants that its laminated veneer lumber products (“Kerto LVL Products”) are manufactured to meet Metsä Wood’s specifications for Kerto LVL Products and applicable industry standards and will, as manufactured, be free from defects in materials and workmanship for the expected life of the structure in which they are installed.

This warranty is provided exclusively to the original purchaser of Kerto LVL Products and to any subsequent owner of a building in the United States or Canada in which the Kerto LVL Products are originally installed (“Owner”).

### Exclusions from Warranty Coverage

Any non-performance, defect or damage to Kerto LVL Products, including delamination, resulting in whole or part from the following causes and/or conditions is expressly excluded from, and is NOT covered, by this warranty:

- Causes from nonconventional use conditions, such as improper storage, handling, use, maintenance or installation.
- Prolonged exposure to water, including leaks, after completion of construction or long construction delays.
- Fire, floods, fungal growth, natural disaster, or any other cause beyond Metsä Wood’s control.
- Defects in the structure due to construction, improper or inadequate ventilation, installation, failure or settling of the foundation or manufactured sub-assembly.
- Damage to the Kerto LVL Products prior to, during, or after installation.
- Failure to follow published installation instructions, applicable building codes or generally accepted construction practices.
- Any modifications to the Kerto LVL Products after the original installation.
- Mold, fungal decay or rot; termites or termite damage.
- Use of pressure or topical treatments or coatings not approved by Metsä Wood.

Delamination means extensive separation of the laminated veneer lumber (“LVL”) veneers. Minor localized edge checking or edge separation does not constitute delamination covered by this warranty. This warranty does not cover the performance of Kerto LVL Products outside of the U.S and Canada.

### Claims and Remedies

The Owner shall give Metsä Wood written notice no later than thirty (30) days after discovery of defective or nonconforming Kerto LVL Products and before beginning any permanent repair. Metsä Wood shall have an additional thirty (30) days after receipt of notice to inspect the Kerto LVL Products before any alteration or repair is made.

Upon reasonable request, Owner is required to provide Metsä Wood with reasonable proof of product identification in the form of a sample, photograph, receipt or other documentation. If, after inspection, Metsä Wood determines that a defect covered by this warranty exists, Metsä Wood shall, at its option, either (1) repair the defective Kerto LVL Products and provide replacement Kerto LVL Products; or (2) reimburse by cash payment the Owner for the reasonable cost of repair or replacement of the defective Kerto LVL Products. Any cash compensation shall be limited to a maximum payment of two (2) times the original purchase price of the Kerto LVL Products affected.

Owner acknowledges and accepts that the above is the sole and exclusive remedy for nonconformance of the Kerto LVL Products.

### Disclaimer of Warranties and Limitation of damages

THIS LIMITED LIFETIME WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE SPECIFICALLY DISCLAIMED.

UNDER NO CIRCUMSTANCES WILL METSÄ WOOD BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES WHETHER ARISING OUT OF OR IN ANY WAY RELATED TO A CLAIM FOR BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR ANY OTHER LEGAL THEORY. SUCH EXCLUDED DAMAGES INCLUDE, BUT ARE NOT LIMITED TO, LOSS OF PROFITS, DAMAGE TO THE STRUCTURE IN WHICH THE KERTO LVL PRODUCTS ARE INSTALLED, DAMAGE TO OTHER PROPERTY, AND LOSS OF USE OF THE KERTO® PRODUCTS OR OTHER PROPERTY.

**Some states or provinces do not allow limitations on how long an express or implied warranty lasts, or do not allow for the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary in each state or province.**



## CERTIFIED RAW MATERIAL

Metsä Wood's main raw material, wood, is 100% traceable, and it comes from sustainably managed northern forests, where the growth exceeds the use. Most of the wood we use comes from forests owned by Metsä Group's 100,000 owner-members, because we want to ensure that forest growth is sustainable. Metsä Group focuses on sustainable forest management by working closely with forest owners, increasing the proportion of mixed forests and safeguarding the biodiversity of forests through various means.

## SOFTWARE

Kerto® LVL S-beam may be designed using Finnwood software. Finnwood is a software program developed for the calculation of individual timber structures made of Kerto LVL or other Metsä Wood products. (download from the Metsä Wood website) or CSD® iStruct® design software. (Contact your Metsä Wood distributor)

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USP Structural Connectors®	Is a registered trademark of MiTek USA, Inc.
NDS National Design Specification®	Is a registered trademark of the American Wood Council

Metsä Wood provides competitive and environmentally friendly wood products for construction, industry and distributor partners. The products are manufactured from northern wood, a sustainable raw material of premium quality. Metsä Wood is part of Metsä Group.

For further information and sales contact

[www.metsawood.com](http://www.metsawood.com)

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