GLOBAL LVL HEADERS, BEAMS AND COLUMNS

1.9E-2850Fb

User guide

lvlglobal.com

PRODUCT

GLOBAL LVL 1.9E-2850Fb ALLOWABLE STRESS DESIGN (ASD)

Global LVL, the product of choice for all of your residential, commercial and industrial construction applications.

GLOBAL Laminated Veneer Lumber (LVL) 1.9E-2850Fb is manufactured from specially selected Aspen veneers. State-of-the-art manufacturing technology, coupled with a rigid quality control program, assures a precise veneer lay-up and provides for proper distribution of the natural characteristics in wood, further assurance of GLOBAL LVL structural integrity.

ADVANTAGES

- An alternate product to large sawn beams, steel beams and long-span trusses;
- Standard thickness: 1 3/4 ";
- Standard lengths, 8' through 60'. In billets or specified widths. Precision end trimmed lengths available;
- Assured structural properties exceeding most solid lumber stress values, for precise design and improved applications;
- Easily worked with conventional tools;
- Always edge sealed and paper-wrapped for storage, unless mentioned;
- Great stability;
- Nails easily;
- Glues easily with minimum preparation;
- High load capacity;
- Long spans;
- Appearance (visual application);
- Easy handling, lightweight;
- Product guarantee;
- Full technical support.

PRODUCT

GLOBAL LVL 1.9E-2850Fb ALLOWABLE STRESS DESIGN (ASD)

NOTES FOR ALL TABLES IN THIS DOCUMENT

1- THE ALLOWABLE STRESS DESIGN VALUES FOR GLOBAL LVL ARE IN COMPLIANCE WITH THE ANSI / AF&PA NDS-2005 NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION AND THE ALLOWABLE STRESS DESIGN (ASD) MANUAL FOR ENGINEERED WOOD CONSTRUCTION 2005 EDITION;

2- GLOBAL LVL SHALL BE USED IN DRY SERVICE CONDITIONS ONLY (C_M = 1,0), WHERE THE AVERAGE EQUILIBRIUM MOISTURE CONTENT IS LESS THAN 16 PERCENT;

3- ALL TABULATED VALUES ARE BASED ON A TEMPERATURE FACTOR (C_t = 1,0);

4- CONTACT GLOBAL LVL INC. PRIOR TO PRESERVATIVE OR FIRE-RETARDANT TREATMENT. UNAUTHORIZED TREATMENT MAY VOID ALL WARRANTIES;

5- DO NOT DRILL, NOTCH, CUT OR ALTER GLOBAL LVL EXCEPT AS APPROVED BY LVL GLOBAL INC. IN WRITING;

6- WHEN GLOBAL LVL BEAMS ARE USED AS FLOOR JOISTS, THEY SHALL BE DESIGNED TO MEET RECOMMENDED DEFLECTION AND VIBRATION CRITERIA;

7- UNLESS OTHERWISE INDICATED, TABLES ARE BASED ON "TRUE" MODULUS OF ELASTICITY E = 1.9 x 10^6 PSI (SHEAR-FREE);

8- DESIGNER MUST USE THE "APPARENT" MODULUS OF ELASTICITY E = 1.8 x 10^6 PSI FOR OTHER CONDITIONS OF LOADING;

9- CONTACT GLOBAL LVL INC. TECHNICAL DEPARTMENT FOR OTHER USES, APLICATIONS OR USES IN WET SERVICE CONDITIONS.

DESIGN PROPERTIES (JOIST/BEAM)

Width (b) (in): 1-3/4	Depth (d) (in)											
	5½	7¼	9¼	9½	11¼	11⅞	14	16	18	20	22	24
Moment (lb-ft) (1)	2 546	4 129	6 325	6 627	8 909	9 793	13 063	16 502	20 280	24 386	28 812	33 551
Shear (lb)	1 604	2 114	2 697	2 770	3 281	3 463	4 083	4 666	5 250	5 833	6 416	7 000
Moment of inertia (in^4)	24	56	115	125	208	244	400	597	851	1167	1553	2016
Area (po^2)	9,6	12,7	16,2	16,6	19,7	20,8	24,5	28,0	31,5	35,0	38,5	42,0
Weight (lb/ft)	2,21	2,91	3,71	3,81	4,51	4,76	5,61	6,42	7,22	8,02	8,82	9,63

NOTES:

1- TABULATED DESIGN PROPERTIES ARE DESIGN PROPERTIES FOR NORMAL DURATION OF LOAD. MOMENT AND SHEAR VALUES SHALL BE PERMITTED TO BE AJUSTED FOR OTHER LOAD DURATIONS AS PERMITTED BY THE CODE;

2- PROVIDE CONTINUOUS LATERAL SUPPORT OF MEMBER COMPRESSION EDGE;

3- PROVIDE LATERAL SUPPORT AT BEARING TO PREVENT LATERAL DISPLACEMENT OR ROTATION.

ALLOWABLE STRESS DESIGN VALUES (PSI) (4)

Mechanical property			LVL Orientation	
			Joist/beam	Plank
Bending strength (2)	F_b	=	2850	2850
Modulus of elasticity (8)	E	=	1.9x10^6 (true)	1.9x10^6 (true)
Tension parallel to grain (3)	F_t	=	2000	2000
Compression perpendicular to grain	$F_{c\perp}$	=	550	450
Compression parallel to grain	$F_{c//}$	=	2900	2900
Longitudinal shear	F_v	=	250	150
Specific gravity (5)	SG	=	0.43	0.43

FOR SI: 1 inch = 25.4 mm. 1 foot = 304.8 mm, 1bf = 0,454 kg, 1 psi = 6.9 kPa

NOTES:

1- TABULATED VALUES ARE DESIGN VALUES FOR NORMAL DURATION OF LOAD. ALL VALUES, EXCEPT FOR E AND $F_{C\perp}$, ARE PERMITTED TO BE ADJUSTED FOR OTHER LOAD DURATIONS AS PERMITTED BY THE CODE;

2- TABULATED VALUE (F_b) IS BASED ON A REFERENCE DEPTH OF 12 INCHES. FOR DEPTHS OTHER THAN 12 INCHES, WHEN LOADED EDGEWISE, THE ALLOWABLE BENDING STRESS (F_b) SHALL BE MODIFIED BY $(12/d)^{0,25}$, WHERE d = MEMBER DEPTH IN INCHES;

3- TABULATED VALUES (F_t) ARE BASED ON A REFERENCE LENGTH OF 20 FEET. FOR LENGTHS GREATER THAN 20 FEET, THE ALLOWABLE DESIGN VALUE SHALL BE MODIFIED BY $(20/L)^{0,146}$, WHERE L = MEMBER LENGTH IN FEET;

4- APPLICABLE TO ALL TABULATED VALUES EXCEPT SPECIFIC GRAVITY (SG);

5- APPLICABLE FOR NAILED AND BOLTED CONNECTION (LATERAL LOAD);

6- JOIST/BEAM = LOAD PARALLEL TO GLUELINE, PLANK = LOAD PERPENDICULAR TO GLUELINE.

7- TABULATED FLEXURAL STRESS (Fb) MAY BE INCREASED BY 4 PERCENT WHEN THE MEMBER QUALIFIES AS A REPETITIVE MEMBER AS DEFINED IN THE NDS;

8- FOR UNIFORMLY LOADED SIMPLE-SPAN BEAMS AND JOISTS, DELECTION IS CALCULATED AS FOLLOWS:

$$\delta = \frac{270\ wL^4}{Ebh^3} + \frac{28.8\,wL^2}{Ebh}$$

Where: δ = estimated deflection, inches; w = uniform load, pounds per linear foot; L = span, feet; h = beam depth, inches; b = beam width, inches; E = true (shear-free) modulus of elasticity, pounds per square inch

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ALLOWABLE STRESS DESIGN (ASD)

ALLOWABLE UNIFORM LOAD (pounds per linear foot)

Span (feet)	per ply 1¾"x5½"				per ply 1¾"x7¼"				per ply 1¾"x9¼"				per ply 1¾"x9½"				per ply 1¾"x11¼"				per ply 1¾"x11½"				Span (feet)
	Live Load	Total load			Live Load	Total load			Live Load	Total load			Live Load	Total load			Live Load	Total load			Live Load	Total load			
		C_D=1.0	C_D=1.15	C_D=1.25		C_D=1.0	C_D=1.15	C_D=1.25		C_D=1.0	C_D=1.15	C_D=1.25		C_D=1.0	C_D=1.15	C_D=1.25		C_D=1.0	C_D=1.15	C_D=1.25		C_D=1.0	C_D=1.15	C_D=1.25	
	L/360	L/240	L/180	L/180	L/360	L/240	L/180	L/180	L/360	L/240	L/180	L/180	L/360	L/240	L/180	L/180	L/360	L/240	L/180	L/180	L/360	L/240	L/180	L/180	
6	290	435	580	580	626	882	1014	1102	1199	1209	1391	1512	1254	1254	1442	1567	1590	1590	1829	1988	1642	1642	1889	2053	6
7	186	280	373	373	409	613	775	818	798	988	1136	1235	857	1022	1176	1278	1280	1280	1472	1600	1319	1319	1517	1649	7
8	126	190	253	253	280	421	561	561	555	790	909	988	597	828	952	1035	942	1071	1232	1339	999	1102	1268	1378	8
9	90	135	180	180	200	301	401	401	400	600	718	780	431	647	752	818	687	879	1011	1099	729	914	1051	1143	9
10	66	99	132	132	148	222	296	296	297	446	581	595	321	481	609	642	514	712	819	890	547	740	851	925	10
11	49	74	99	99	112	168	224	224	226	340	453	453	244	367	489	489	395	589	677	736	420	612	703	765	11
12	38	57	77	77	87	130	174	174	176	265	353	353	190	286	381	381	309	463	569	618	329	493	591	642	12
13	30	45	61	61	68	103	137	137	140	210	280	280	151	227	303	303	246	369	484	492	262	393	504	524	13
14	24	36	48	48	55	83	110	110	113	169	226	226	122	183	244	244	199	298	398	398	212	318	424	424	14
15		29	39	39	45	67	90	90	92	138	185	185	100	150	200	200	163	245	326	326	174	261	348	348	15
16		24	32	32	37	56	74	74	76	114	153	153	82	124	165	165	135	203	271	271	144	216	288	288	16
17			27	27	31	46	62	62	64	96	128	128	69	103	138	138	113	170	227	227	121	181	242	242	17
18			23	23	26	39	52	52	54	81	108	108	58	87	117	117	96	144	192	192	102	153	205	205	18
19					22	33	44	44	46	69	92	92	49	74	99	99	82	123	164	164	87	131	175	175	19
20						28	38	38	39	59	79	79	42	64	85	85	70	106	141	141	75	113	150	150	20
21						25	33	33	34	51	68	68	37	55	74	74	61	91	122	122	65	97	130	130	21
22						21	29	29	29	44	59	59	32	48	64	64	53	80	106	106	56	85	113	113	22
23							25	25	26	39	52	52	28	42	56	56	46	70	93	93	49	74	99	99	23
24							22	22	23	34	46	46	25	37	50	50	41	61	82	82	44	66	88	88	24
25										30	40	40	22	33	44	44	36	54	73	73	39	58	78	78	25
26										27	36	36		29	39	39	32	48	65	65	34	52	69	69	26
27										24	32	32		26	35	35	29	43	58	58	31	46	62	62	27
28										21	29	29		23	31	31	26	39	52	52	27	41	55	55	28
29											26	26		21	28	28	23	35	47	47	25	37	50	50	29
30											23	23			25	25	21	31	42	42	22	34	45	45	30

NOTES :

1- BEAMS OVER 14" DEPTH MUST BE USED IN 2 OR MORE PLIES. MULTIPLE MEMBER MUST BE CORRECTLY CONNECTED TOGETHER (SEE CONNECTION DETAILS ON PAGE 10);
2- PROVIDE CONTINUOUS LATERAL SUPPORT OF MEMBER COMPRESSION EDGE;
3- PROVIDE LATERAL SUPPORT AT BEARING TO PREVENT LATERAL DISPLACEMENT OR ROTATION;
4- TABLE IS BASED ON UNIFORM LOADS AND SINGLE SPAN MEMBER;
5- SPAN IS EQUAL TO THE CENTRE-TO-CENTRE DISTANCE BETWEEN SUPPORTS;
6- LOAD DURATION FACTORS (C_D): 1.0 FOR OCCUPANCY LIVE LOAD (FLOOR), 1.15 FOR SNOW LOAD, 1.25 FOR CONSTRUCTION LOAD. TABULATED VALUES SHALL BE PERMITTED TO BE ADJUSTED FOR OTHER LOAD DURATIONS AS PERMITTED BY THE CODE;
7- SEE PAGE 11 FOR REQUIRED BEARING LENGHTS;
8- FOR L/240 ALLOWABLE LIVE LOAD DEFLECTION, MULTIPLY LIVE LOAD BY 1.5;
FOR L/480 ALLOWABLE LIVE LOAD DEFLECTION, MULTIPLY LIVE LOAD BY 0.75;
FOR L/600 ALLOWABLE LIVE LOAD DEFLECTION, MULTIPLY LIVE LOAD BY 0.60;
THE RESULTING LIVE LOAD MUST NOT EXCEED TABULATED TOTAL LOAD CORRESPONDING TO LOAD CASE (1.0, 1.15 OR 1.25);
9- CONTACT GLOBAL LVL INC. TECHNICAL DEPARTMENT FOR OTHER LOADS AND CONDITIONS.

PRODUCT

GLOBAL LVL 1.9E-2850Fb ALLOWABLE STRESS DESIGN (ASD)

ALLOWABLE UNIFORM LOAD (pounds per linear foot)

Span (feet)	per ply 1¾"x11⅞"				per ply 1¾"x12½"				per ply 1¾"x14"				per ply 1¾"x16"				per ply 1¾"x18"				per ply 1¾"x18¾"				Span (feet)
	Live Load	Total load			Live Load	Total load			Live Load	Total load			Live Load	Total load			Live Load	Total load			Live Load	Total load			
		C_D=1.0	C_D=1.15	C_D=1.25		C_D=1.0	C_D=1.15	C_D=1.25		C_D=1.0	C_D=1.15	C_D=1.25		C_D=1.0	C_D=1.15	C_D=1.25		C_D=1.0	C_D=1.15	C_D=1.25		C_D=1.0	C_D=1.15	C_D=1.25	
	L/360	L/240	L/180	L/180	L/360	L/240	L/180	L/180	L/360	L/240	L/180	L/180	L/360	L/240	L/180	L/180	L/360	L/240	L/180	L/180	L/360	L/240	L/180	L/180	
6	1722	1722	1980	2153	1861	1861	2140	2326	2227	2227	2561	2783	2799	2799	3219	3499	3500	3500	4025	4375	3803	3803	4374	4754	6
7	1379	1379	1586	1724	1482	1482	1705	1853	1749	1749	2012	2187	2153	2153	2476	2691	2625	2625	3018	3281	2822	2822	3245	3527	7
8	1087	1150	1322	1437	1232	1232	1416	1540	1441	1441	1657	1801	1749	1749	2012	2187	2100	2100	2415	2625	2243	2243	2579	2804	8
9	795	967	1112	1209	912	1053	1212	1317	1224	1224	1408	1531	1473	1473	1694	1841	1750	1750	2012	2187	1861	1861	2140	2326	9
10	597	783	900	979	687	857	985	1071	931	1045	1201	1306	1272	1272	1463	1590	1500	1500	1725	1875	1590	1590	1829	1988	10
11	459	647	744	809	529	708	814	885	721	863	993	1079	1030	1091	1254	1363	1312	1312	1509	1640	1388	1388	1597	1735	11
12	360	540	625	680	415	595	684	743	569	725	834	907	817	916	1054	1145	1117	1126	1295	1408	1210	1210	1391	1512	12
13	287	430	533	574	332	498	583	633	456	618	711	772	658	781	898	976	904	960	1104	1200	1007	1031	1185	1288	13
14	232	348	459	465	269	403	502	538	370	533	613	666	537	673	774	841	741	827	951	1034	827	889	1022	1111	14
15	190	286	381	381	221	331	438	442	305	458	534	580	444	586	674	733	614	721	829	901	687	774	890	968	15
16	158	237	317	317	183	275	367	367	254	381	469	508	370	515	593	644	514	633	728	792	576	680	782	850	16
17	132	199	265	265	154	231	308	308	213	320	415	427	312	456	525	571	435	561	645	701	487	602	693	753	17
18	112	168	225	225	130	196	261	261	181	272	362	362	265	398	468	509	370	500	575	625	415	537	618	672	18
19	96	144	192	192	111	167	223	223	155	232	310	310	227	341	420	455	318	449	516	561	357	482	555	603	19
20	82	124	165	165	96	144	192	192	133	200	267	267	196	295	379	393	275	405	466	507	309	435	500	544	20
21	71	107	143	143	83	125	166	166	116	174	232	232	170	256	341	341	239	359	423	459	269	395	454	493	21
22	62	93	125	125	72	109	145	145	101	152	202	202	149	224	298	298	209	314	385	419	235	353	414	450	22
23	54	82	109	109	63	95	127	127	89	133	178	178	131	197	262	262	184	277	352	369	207	311	378	411	23
24	48	72	96	96	56	84	112	112	78	117	157	157	116	174	232	232	163	245	323	326	183	275	347	367	24
25	42	64	85	85	49	74	99	99	69	104	139	139	103	154	206	206	145	217	290	290	163	245	320	326	25
26	38	57	76	76	44	66	89	89	62	93	124	124	91	137	183	183	129	194	259	259	145	218	291	291	26
27	34	51	68	68	39	59	79	79	55	83	111	111	82	123	164	164	116	174	232	232	130	196	261	261	27
28	30	46	61	61	35	53	71	71	49	74	99	99	74	111	148	148	104	156	208	208	117	176	235	235	28
29	27	41	55	55	32	48	64	64	45	67	90	90	66	100	133	133	94	141	188	188	106	159	212	212	29
30	25	37	50	50	29	43	58	58	40	61	81	81	60	90	120	120	85	128	170	170	96	144	192	192	30

HOW TO USE THIS TABLE:

1- DETERMINE THE UNIFORM LIVE LOAD AND THE UNIFORM TOTAL LOAD ACTING ON THE BEAM OR HEADER IN POUNDS PER LINEAR FOOT (plf);
2- DETERMINE THE LOAD DURATION FACTORS: 1.0, 1.15 OR 1.25;
3- LOCATE THE SPAN WHICH MEETS OR EXCEED CENTRE-TO-CENTRE DISTANCE BETWEEN SUPPORTS OF BEAM OR HEADER;
4- SCANNING FROM LEFT TO RIGHT, SELECT A BEAM SIZE WHOSE ALLOWABLE TOTAL LOAD (CORRESPONDING TO ACTUAL LOAD DURATION) BOTH MEETS OR EXCEEDS ACTUAL BEAM OR HEADER LOADS.
FOR 2-PLIES BEAMS, MULTIPLY TABULATED VALUES BY 2;
FOR 3-PLIES BEAMS, MULTIPLY TABULATED VALUES BY 3;
FOR 4-PLIES BEAMS, MULTIPLY TABULATED VALUES BY 4.

EXEMPLE :

- SINGLE SPAN BEAM SUPPORTING HOUSE FLOOR
- DEAD LOAD: 10 PSF (TYPICAL HOUSE FLOOR)
- LIVE LOAD: 30 PSF
- TRIBUTARY WIDTH OF BEAM = 20'
- BEAM SPAN = 16'

THEN:

- UNIFORM LIVE LOAD = 20' X 30 PSF = 600 PLF
- UNIFORM TOTAL LOAD = 20' X (10 + 30 PSF) = 800 PLF
- LOAD DURATION FACTOR: 1.0 (FLOOR LOADS)

OPTIONS:

- 2 - 1¾" X 16"

ALLOWABLE LIVE LOAD: 2 X 370 = 740 PLF > UNIFORM LIVE LOAD = 600 PLF
ALLOWABLE TOTAL LOAD: 2 X 515 = 1030 PLF > UNIFORM TOTAL LOAD = 800 PLF

- 3 - 1¾" X 14"

ALLOWABLE LIVE LOAD: 3 X 254 = 762 PLF > UNIFORM LIVE LOAD = 600 PLF
ALLOWABLE TOTAL LOAD: 3 X 381 = 1143 PLF > UNIFORM TOTAL LOAD = 800 PLF

- 4 - 1¾" X 11⅞"

ALLOWABLE LIVE LOAD: 4 X 158 = 632 PLF > UNIFORM LIVE LOAD = 600 PLF
ALLOWABLE TOTAL LOAD: 4 X 237 = 948 PLF > UNIFORM TOTAL LOAD = 800 PLF

SEE PAGE 4 FOR OTHER NOTES.

PRODUCT

GLOBAL LVL 1.9E-2850Fb

ALLOWABLE STRESS DESIGN (ASD)

ALLOWABLE UNIFORM LOAD (pounds per linear foot)

Span (feet)	per pli 1¾" x 20"				per pli 1¾" x 22"				per pli 1¾" x 24"			
	Live load	Total load			Live load	Total load			Live load	Total load		
		C_D = 1.0	C_D = 1.15	C_D = 1.25		C_D = 1.0	C_D = 1.15	C_D = 1.25		C_D = 1.0	C_D = 1.15	C_D = 1.25
	L/360	L/240	L/180	L/180	L/360	L/240	L/180	L/180	L/360	L/240	L/180	L/180
6	4374	4374	5030	5468	5499	5499	6324	6874	7000	7000	8050	8750
7	3181	3181	3658	3977	3849	3849	4427	4812	4666	4666	5366	5833
8	2499	2499	2874	3124	2961	2961	3405	3701	3500	3500	4025	4375
9	2058	2058	2367	2573	2406	2406	2766	3007	2800	2800	3220	3500
10	1749	1749	2012	2187	2026	2026	2330	2532	2333	2333	2683	2916
11	1521	1521	1749	1902	1749	1749	2012	2187	2000	2000	2300	2500
12	1346	1346	1547	1682	1539	1539	1770	1924	1750	1750	2012	2187
13	1154	1154	1327	1442	1363	1363	1568	1704	1555	1555	1788	1944
14	982	995	1144	1244	1176	1176	1352	1470	1369	1369	1574	1711
15	817	867	997	1083	1024	1024	1178	1280	1192	1192	1371	1491
16	687	762	876	952	888	900	1035	1125	1048	1048	1205	1310
17	582	675	776	843	754	797	917	996	928	928	1068	1160
18	497	602	692	752	646	711	818	889	817	828	952	1035
19	428	540	621	675	557	638	734	798	707	743	855	929
20	370	487	560	609	483	576	662	720	614	671	771	838
21	323	442	508	552	422	522	601	653	537	608	699	760
22	283	403	463	503	370	476	547	595	472	554	637	693
23	249	368	424	460	327	435	501	544	417	507	583	634
24	221	331	389	423	290	400	460	500	370	465	535	582
25	196	295	358	390	258	368	424	460	330	429	493	536
26	175	263	331	351	231	340	392	426	295	397	456	496
27	157	236	307	315	207	311	363	395	265	368	423	460
28	141	212	283	283	186	280	338	367	239	342	393	427
29	128	192	256	256	168	253	315	337	216	319	367	398
30	116	174	232	232	153	229	294	306	196	295	342	372

NOTES :

1- BEAMS OVER 14" DEPTH MUST BE USED IN 2 OR MORE PLIES. MULTIPLE MEMBER MUST BE CORRECTLY CONNECTED TOGETHER (SEE CONNECTION DETAILS ON PAGE 10);
2- PROVIDE CONTINUOUS LATERAL SUPPORT OF MEMBER COMPRESSION EDGE;
3- PROVIDE LATERAL SUPPORT AT BEARING TO PREVENT LATERAL DISPLACEMENT OR ROTATION;
4- TABLE IS BASED ON UNIFORM LOADS AND SINGLE SPAN MEMBER;
5- SPAN IS EQUAL TO THE CENTRE-TO-CENTRE DISTANCE BETWEEN SUPPORTS;
6- LOAD DURATION FACTORS (C_D): 1.0 FOR OCCUPANCY LIVE LOAD (FLOOR), 1.15 FOR SNOW LOAD, 1.25 FOR CONSTRUCTION LOAD. TABULATED VALUES SHALL BE PERMITTED TO BE ADJUSTED FOR OTHER LOAD DURATIONS AS PERMITTED BY THE CODE;
7- SEE PAGE 11 FOR REQUIRED BEARING LENGHTS;
8- FOR L/240 ALLOWABLE LIVE LOAD DEFLECTION, MULTIPLY LIVE LOAD BY 1.5;
FOR L/480 ALLOWABLE LIVE LOAD DEFLECTION, MULTIPLY LIVE LOAD BY 0.75;
FOR L/600 ALLOWABLE LIVE LOAD DEFLECTION, MULTIPLY LIVE LOAD BY 0.60;
THE RESULTING LIVE LOAD MUST NOT EXCEED TABULATED TOTAL LOAD CORRESPONDING TO LOAD CASE (1.0, 1.15 OR 1.25);
9- CONTACT GLOBAL LVL INC. TECHNICAL DEPARTMENT FOR OTHER LOADS AND CONDITIONS.

PRODUCT

GLOBAL LVL 1.9E-2850Fb

ALLOWABLE STRESS DESIGN (ASD)

FLOOR (C_D=1.0) - BEAM SPAN TABLES (feet)

Loads (psf)	Tributary width A/2 (feet)	5½"		7¼"		9¼"		9½"		11¼"		11⅞"		14"		16"		18"		20"		22"		24"	
		2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply
LL=10 DL=30	8	8,15	9,37	10,75	12,35	13,71	15,76	14,08	16,19	16,68	19,17	17,61	20,23	20,76	23,86	23,73	27,26	26,69	30,67	29.65	34.07	32.63	37.48	35.59	40.89
	10	7,55	8,68	9,95	11,44	12,70	14,60	13,04	15,00	15,44	17,76	16,30	18,74	19,22	22,10	21,97	25,26	24,71	28,41	27.46	31.57	30.21	34.73	32.96	37.88
	12	7,09	8,15	9,34	10,75	11,92	13,71	12,24	14,08	14,50	16,68	15,31	17,61	18,04	20,76	20,62	23,73	23,20	26,69	25.78	29.65	28.36	32.62	30.94	35.58
	14	6,72	7,73	8,85	10,19	11,30	13,01	11,60	13,36	13,74	15,82	14,50	16,70	17,11	19,68	19,54	22,50	21,99	25,31	24.43	28.12	26.88	30.93	29.32	33.74
	16	6,41	7,38	8,45	9,73	10,78	12,42	11,07	12,75	13,11	15,10	13,84	15,94	16,32	18,80	18,65	21,48	20,99	24,17	23.31	26.85	25.65	29.54	27.99	32.22
	18	6,15	7,09	8,11	9,34	10,34	11,92	10,62	12,24	12,58	14,50	13,28	15,31	15,66	18,04	17,90	20,62	20,14	23,20	22.37	25.78	24.61	28.35	26.85	30.93
	20	5,92	6,83	7,81	9,01	9,97	11,49	10,24	11,80	12,12	13,98	12,80	14,75	15,09	17,40	17,25	19,88	19,40	22,37	21.55	24.85	23.72	27.33	25.87	29.82
LL=15 DL=30	8	8,15	9,37	10,75	12,35	13,71	15,76	14,08	16,19	16,68	19,16	17,61	20,23	20,76	23,85	23,73	27,26	26,69	30,67	29.65	34.07	32.63	37.48	35.59	40.89
	10	7,55	8,68	9,95	11,44	12,70	14,60	13,04	15,00	15,44	17,76	16,30	18,74	19,22	22,10	21,97	25,26	24,71	28,41	27.46	31.57	30.21	34.73	32.96	37.88
	12	7,09	8,15	9,34	10,75	11,92	13,71	12,24	14,08	14,50	16,68	15,31	17,61	18,04	20,76	20,62	23,73	23,20	26,69	25.78	29.65	28.36	32.62	30.94	35.58
	14	6,72	7,73	8,85	10,19	11,30	13,01	11,60	13,36	13,74	15,82	14,50	16,70	17,11	19,68	19,54	22,50	21,99	25,31	24.43	28.12	26.88	30.93	29.19	33.74
	16	6,41	7,38	8,45	9,73	10,78	12,42	11,07	12,75	13,11	15,10	13,84	15,94	16,32	18,80	18,65	21,48	20,99	24,17	23.27	26.85	25.30	29.54	27.30	32.22
	18	6,15	7,09	8,11	9,34	10,34	11,92	10,62	12,24	12,58	14,50	13,28	15,31	15,66	18,04	17,90	20,62	20,01	23,20	21.94	25.78	23.85	28.35	25.74	30.93
	20	5,92	6,83	7,81	9,01	9,97	11,49	10,24	11,80	12,12	13,98	12,80	14,75	15,09	17,40	17,12	19,88	18,98	22,37	20.82	24.85	22.63	27.33	24.42	29.82
LL=10 DL=40	8	7,38	8,49	9,73	11,19	12,42	14,28	12,75	14,66	15,10	17,37	15,94	18,33	18,80	21,62	21,48	24,71	24,17	27,79	26.85	30.88	29.54	33.97	32.23	37.05
	10	6,83	7,86	9,01	10,36	11,49	13,23	11,80	13,58	13,98	16,08	14,75	16,98	17,40	20,02	19,88	22,88	22,36	25,74	24.85	28.60	27.34	31.46	29.83	34.32
	12	6,41	7,38	8,45	9,73	10,78	12,42	11,07	12,75	13,11	15,10	13,84	15,94	16,32	18,80	18,65	21,48	20,99	24,17	23.31	26.85	25.65	29.54	27.99	32.22
	14	6,07	7,00	8,00	9,23	10,21	11,77	10,49	12,09	12,42	14,32	13,11	15,11	15,46	17,82	17,67	20,36	19,88	22,91	22.09	25.45	24.30	28.00	26.51	30.54
	16	5,79	6,68	7,64	8,81	9,74	11,24	10,01	11,54	11,85	13,67	12,51	14,42	14,75	17,01	16,86	19,44	18,96	21,87	21.07	24.29	23.18	26.72	25.29	29.15
	18	5,55	6,41	7,32	8,45	9,34	10,78	9,60	11,07	11,37	13,11	12,00	13,84	14,14	16,32	16,17	18,65	18,19	20,99	20.21	23.31	22.23	25.65	24.25	27.98
	20	5,35	6,18	7,05	8,14	9,00	10,39	9,25	10,67	10,95	12,64	11,55	13,34	13,62	15,73	15,57	17,98	17,52	20,22	19.46	22.47	21.41	24.71	23.16	26.96
LL=15 DL=40	8	7,38	8,49	9,73	11,19	12,42	14,28	12,75	14,66	15,10	17,37	15,94	18,33	18,80	21,62	21,48	24,71	24,17	27,79	26.85	30.88	29.54	33.97	32.23	37.05
	10	6,83	7,86	9,01	10,36	11,49	13,23	11,80	13,58	13,98	16,08	14,75	16,98	17,40	20,02	19,88	22,88	22,36	25,74	24.85	28.60	27.34	31.46	29.83	34.32
	12	6,41	7,38	8,45	9,73	10,78	12,42	11,07	12,75	13,11	15,10	13,84	15,94	16,32	18,80	18,65	21,48	22,36	25,74	24.85	28.60	27.34	31.46	29.83	34.32
	14	6,07	7,00	8,00	9,23	10,21	11,77	10,49	12,09	12,42	14,32	13,11	15,11	15,46	17,82	17,67	20,36	19,88	22,91	22.09	25.45	24.30	28.00	26.40	30.54
	16	5,79	6,68	7,64	8,81	9,74	11,24	10,01	11,54	11,85	13,67	12,51	14,42	14,75	17,01	16,86	19,44	18,96	21,87	21.05	24.29	22.88	26.72	24.69	29.15
	18	5,55	6,41	7,32	8,45	9,34	10,78	9,60	11,07	11,37	13,11	12,00	13,84	14,14	16,32	16,17	18,65	18,10	20,99	19.85	23.31	21.57	25.65	23.28	27.98
	20	5,35	6,18	7,05	8,14	9,00	10,39	9,25	10,67	10,95	12,64	11,55	13,34	13,62	15,73	15,49	17,98	17,17	20,22	18.83	22.47	20.47	24.71	22.09	26.96

MINIMUM BEARING REQUIREMENTS:
3" BEARING AT BOTH ENDS AND 7½" AT INTERMEDIATE

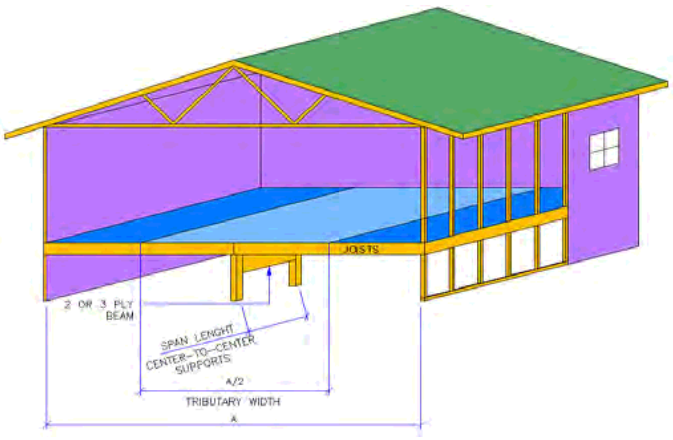
SHADED AREAS:
- 4½" BEARING AT BOTH ENDS AND 11¼" BEARING AT INTERMEDIATE
- 6" BEARING AT BOTH ENDS AND 15" BEARING AT INTERMEDIATE
- 7½"BEARING AT BOTH ENDS AND 18¾" BEARING AT INTERMEDIATE

NOTES

1- TABLE ASSUME UNIFORM LOADS AND SINGLE FLOOR JOIST SPANS. WHEN THE FLOOR JOISTS ARE CONTINUOUS OVER THE BEAM, MULTIPLY TRIBUTARY WIDTH BY 1,25 AND ALWAYS SELECT THE NEXT HIGHER TRIBUTARY WIDTH:

EXAMPLE: TRIBUTARY WIDTH OF 12' MULTIPLIED BY 1,25 = 15'.
IN TABLES, USE 16' FOR TRIBUTARY WIDTH;

2- LATERAL RESTRAINT IS REQUIRED ALONG COMPRESSION EDGE OF BEAM AT INTERVALS OF 24" OR CLOSER;
3- LATERAL SUPPORT IS REQUIRED AT BEARING POINT TO PREVENT ROTATION OR LATERAL DISPLACEMENT;
4- MAXIMUM SPANS SHOWN ARE MEASURED CENTRE-TO-CENTRE BETWEEN SUPPORTS;
5- DEFLECTION LIMITATIONS: L/360 FOR LIVE LOAD AND L/240 FOR TOTAL LOAD;
6- CONTACT LVL GLOBAL INC. TECHNICAL DEPARTMENT FOR OTHER APPICATIONS AND SIZES.



PRODUCT

GLOBAL LVL 1.9E-2850Fb

ALLOWABLE STRESS DESIGN (ASD)

ROOF SNOW (C_D = 1.15) - BEAM SPAN TABLES (feet)

Loads (psf)	Tributary width A/2 (feet)	5½"		7¼"		9¼"		9½"		11¼"		11⅞"		14"		16"		18"		20"		22"		24"	
		2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply
DL=10 LL=21	8	9,21	10,58	12,14	13,94	15,50	17,80	15,92	18,28	18,85	21,64	19,89	22,85	23,46	26,93	26,81	30,79	30,17	34,63	33.51	38.47	36.87	42.32	40.22	46.17
	10	8,53	9,80	11,25	12,93	14,36	16,50	14,75	16,94	17,46	20,06	18,43	21,18	21,73	24,97	24,84	28,54	27,95	32,10	31.04	35.66	34.16	39.23	37.26	42.79
	12	8,02	9,21	10,57	12,15	13,48	15,50	13,85	15,92	16,40	18,85	17,31	19,90	20,41	23,46	23,33	26,81	26,25	30,16	29.16	33.51	32.08	36.86	35.00	40.21
	14	7,60	8,74	10,02	11,52	12,79	14,70	13,13	15,10	15,55	17,88	16,41	18,88	19,36	22,25	22,12	25,44	24,89	28,61	27.65	31.79	30.42	34.97	33.19	38.15
	16	7,26	8,35	9,57	11,01	12,21	14,05	12,54	14,42	14,85	17,08	15,67	18,03	18,48	21,26	21,12	24,30	23,77	27,33	26.40	30.36	29.05	33.40	31.69	36.44
	18	6,97	8,02	9,18	10,57	11,72	13,49	12,04	13,85	14,26	16,40	15,04	17,31	17,74	20,41	20,28	23,33	22,82	26,25	25.34	29.16	27.88	32.08	30.42	34.99
	20	6,72	7,73	8,85	10,19	11,30	13,01	11,60	13,36	13,74	15,82	14,50	16,70	17,10	19,69	19,55	22,50	21,99	25,31	24.43	28.12	26.88	30.93	29.32	33.74
DL=15 LL=21	8	9,21	10,58	12,14	13,94	15,50	17,80	15,92	18,28	18,85	21,64	19,89	22,85	23,46	26,93	26,81	30,79	30,17	34,63	33.51	38.47	36.87	42.32	40.22	46.17
	10	8,53	9,80	11,25	12,93	14,36	16,50	14,75	16,94	17,46	20,06	18,43	21,18	21,73	24,97	24,84	28,54	27,95	32,10	31.04	35.66	34.16	39.23	37.26	42.79
	12	8,02	9,21	10,57	12,15	13,48	15,50	13,85	15,92	16,40	18,85	17,31	19,90	20,41	23,46	23,33	26,81	26,25	30,16	29.16	33.51	32.08	36.86	35.00	40.21
	14	7,60	8,74	10,02	11,52	12,79	14,70	13,13	15,10	15,55	17,88	16,41	18,88	19,36	22,25	22,12	25,44	24,89	28,61	27.65	31.79	30.42	34.97	33.19	38.15
	16	7,26	8,35	9,57	11,01	12,21	14,05	12,54	14,42	14,85	17,08	15,67	18,03	18,48	21,26	21,12	24,30	23,77	27,33	26.40	30.36	29.05	33.40	31.69	36.44
	18	6,97	8,02	9,18	10,57	11,72	13,49	12,04	13,85	14,26	16,40	15,04	17,31	17,74	20,41	20,28	23,33	22,82	26,25	25.34	29.16	27.88	32.08	30.13	34.99
	20	6,72	7,73	8,85	10,19	11,30	13,01	11,60	13,36	13,74	15,82	14,50	16,70	17,10	19,69	19,55	22,50	21,99	25,31	24.37	28.12	26.49	30.93	28.58	33.74
DL=20 LL=21	8	9,11	10,46	12,01	13,80	15,33	17,60	15,74	18,08	18,65	21,41	19,68	22,60	23,20	26,64	26,52	30,45	29,84	34,26	33.15	38.06	36.47	41.87	39.78	45.67
	10	8,44	9,70	11,13	12,79	14,20	16,31	14,59	16,76	17,27	19,84	18,23	20,95	21,50	24,70	24,57	28,22	27,64	31,75	30.71	35.28	33.78	38.80	36.86	42.33
	12	7,93	9,11	10,45	12,01	13,34	15,33	13,70	15,74	16,22	18,65	17,13	19,68	20,19	23,20	23,08	26,52	25,96	29,84	28.84	33.15	31.73	36.46	34.44	39.78
	14	7,52	8,64	9,91	11,40	12,65	14,54	12,99	14,94	15,38	17,69	16,24	18,67	19,14	22,01	21,88	25,16	24,62	28,30	27.18	31.44	29.55	34.59	31.88	37.73
	16	7,18	8,26	9,46	10,89	12,07	13,89	12,40	14,27	14,69	16,89	15,50	17,83	18,28	21,03	20,89	24,03	23,19	27,03	25.43	30.03	27.64	33.04	29.83	36.04
	18	6,89	7,93	9,08	10,45	11,59	13,34	11,90	13,70	14,09	16,22	14,88	17,13	17,54	20,19	19,72	23,08	21,86	25,96	23.97	28.84	26.06	31.73	28.12	34.61
	20	6,64	7,65	8,75	10,08	11,17	12,86	11,47	13,21	13,59	15,64	14,34	16,51	16,64	19,47	18,71	22,25	20,74	25,03	22.74	27.81	24.72	30.59	26.68	33.32

MINIMUM BEARING REQUIREMENTS:

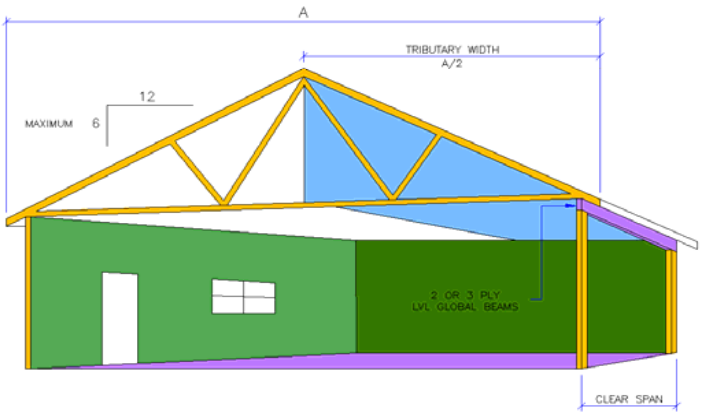
3" BEARING AT BOTH ENDS AND 7½" AT INTERMEDIATE

SHADED AREAS:

- 4½" BEARING AT BOTH ENDS AND 11¼" BEARING AT INTERMEDIATE
- 6" BEARING AT BOTH ENDS AND 15" BEARING AT INTERMEDIATE
- 7½"BEARING AT BOTH ENDS AND 18¾" BEARING AT INTERMEDIATE

NOTES

1- DL = DEAD LOAD, LL = LIVE LOAD;
2- TABLES ARE BASED ON A MAXIMUM ROOF SLOPE OF 6/12;
3- LATERAL SUPPORT IS REQUIRED ALONG COMPRESSION EDGE OF BEAM AT INTERVAL OF 24" CENTRE-TO-CENTRE OR CLOSER;
4- PROVIDE LATERAL SUPPORT AT BEARING TO PREVENT LATERAL DISPLACEMENT OR ROTATION;
5- TABLES ARE CALCULATED WITH A SINGLE SPAN TRUSS;
6- TABLES ARE BASED ON SINGLE BEAM SPAN;
7- MAXIMUM SPANS ARE MEASURED CENTRE-TO-CENTRE BETWEEN SUPPORTS;
8- DEFLECTION LIMITATIONS: L/360 FOR LIVE LOAD AND L/180 FOR TOTAL LOAD;
9- CONTACT GLOBAL LVL INC. TECHNICAL DEPARTMENT FOR OTHER APPLICATIONS AND SIZES.



PRODUCT

GLOBAL LVL 1.9E-2850Fb ALLOWABLE STRESS DESIGN (ASD)

ROOF SNOW (C_D= 1.15) - BEAM SPAN TABLES (feet)

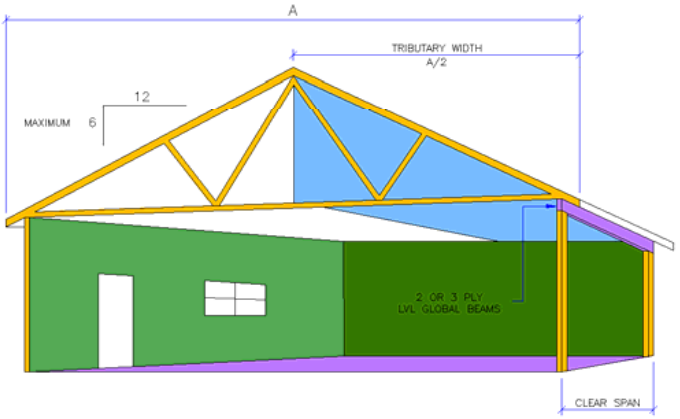
Loads (psf)	Tributary width A/2 (feet)	5½"		7¼"		9¼"		9½"		11¼"		11⅞"		14"		16"		18"		20"		22"		24"	
		2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply
DL=10 LL=30	8	8,15	9,37	10,75	12,35	13,71	15,76	14,09	16,19	16,68	19,17	17,61	20,23	20,76	23,86	23,73	27,26	26,70	30,68	29.65	34.07	32.62	37.48	35.59	40.89
	10	7,55	8,68	9,95	11,45	12,70	14,60	13,04	15,00	15,45	17,76	16,30	18,75	19,22	22,11	21,97	25,26	24,72	28,43	27.46	31.57	30.21	34.73	32.95	37.88
	12	7,09	8,15	9,34	10,75	11,92	13,72	12,24	14,09	14,50	16,68	15,31	17,61	18,05	20,76	20,63	23,73	23,21	26,70	25.78	29.65	28.36	32.62	30.94	35.58
	14	6,72	7,73	8,85	10,19	11,30	13,01	11,60	13,36	13,74	15,82	14,51	16,70	17,10	19,69	19,55	22,50	22,00	25,32	24.43	28.12	26.88	30.93	29.32	33.74
	16	6,41	7,38	8,45	9,73	10,78	12,42	11,07	12,76	13,12	15,10	13,84	15,95	16,32	18,80	18,66	21,48	20,99	24,18	23.31	26.85	25.65	29.54	27.98	32.22
	18	6,15	7,09	8,11	9,34	10,35	11,92	10,63	12,24	12,58	14,50	13,28	15,31	15,66	18,05	17,90	20,62	20,14	23,21	22.37	25.78	24.61	28.35	26.85	30.93
	20	5,93	6,83	7,81	9,01	9,97	11,49	10,24	11,80	12,13	13,98	12,80	14,76	15,09	17,40	17,25	19,88	19,41	22,37	21.55	24.85	23.71	27.33	25.87	29.82
DL=15 LL=30	8	8,15	9,37	10,75	12,35	13,71	15,76	14,09	16,19	16,68	19,17	17,61	20,23	20,76	23,86	23,73	27,26	26,70	30,68	29.65	34.07	32.62	37.48	35.59	40.89
	10	7,55	8,68	9,95	11,45	12,70	14,60	13,04	15,00	15,45	17,76	16,30	18,75	19,22	22,11	21,97	25,26	24,72	28,43	27.46	31.57	30.21	34.73	32.95	37.88
	12	7,09	8,15	9,34	10,75	11,92	13,72	12,24	14,09	14,50	16,68	15,31	17,61	18,05	20,76	20,63	23,73	23,21	26,70	25.78	29.65	28.36	32.62	30.94	35.58
	14	6,72	7,73	8,85	10,19	11,30	13,01	11,60	13,36	13,74	15,82	14,51	16,70	17,10	19,69	19,55	22,50	22,00	25,32	24.43	28.12	26.88	30.93	29.32	33.74
	16	6,41	7,38	8,45	9,73	10,78	12,42	11,07	12,76	13,12	15,10	13,84	15,95	16,32	18,80	18,66	21,48	20,99	24,18	23.31	26.85	25.65	29.54	27.98	32.22
	18	6,15	7,09	8,11	9,34	10,35	11,92	10,63	12,24	12,58	14,50	13,28	15,31	15,66	18,05	17,90	20,62	20,14	23,21	22.37	25.78	24.61	28.35	26.85	30.93
	20	5,93	6,83	7,81	9,01	9,97	11,49	10,24	11,80	12,13	13,98	12,80	14,76	15,09	17,40	17,25	19,88	19,41	22,37	21.55	24.85	23.71	27.33	25.69	29.82
DL=20 LL=30	8	8,15	9,37	10,75	12,35	13,71	15,76	14,09	16,19	16,68	19,17	17,61	20,23	20,76	23,86	23,73	27,26	26,70	30,68	29.65	34.07	32.62	37.48	35.59	40.89
	10	7,55	8,68	9,95	11,45	12,70	14,60	13,04	15,00	15,45	17,76	16,30	18,75	19,22	22,11	21,97	25,26	24,72	28,43	27.46	31.57	30.21	34.73	32.95	37.88
	12	7,09	8,15	9,34	10,75	11,92	13,72	12,24	14,09	14,50	16,68	15,31	17,61	18,05	20,76	20,63	23,73	23,21	26,70	25.78	29.65	28.36	32.62	30.94	35.58
	14	6,72	7,73	8,85	10,19	11,30	13,01	11,60	13,36	13,74	15,82	14,51	16,70	17,10	19,69	19,55	22,50	22,00	25,32	24.43	28.12	26.88	30.93	29.02	33.74
	16	6,41	7,38	8,45	9,73	10,78	12,42	11,07	12,76	13,12	15,10	13,84	15,95	16,32	18,80	18,66	21,48	20,99	24,18	23.14	26.85	25.15	29.54	27.14	32.22
	18	6,15	7,09	8,11	9,34	10,35	11,92	10,63	12,24	12,58	14,50	13,28	15,31	15,66	18,05	17,90	20,62	19,89	23,21	21.81	25.78	23.71	28.35	25.59	30.93
	20	5,93	6,83	7,81	9,01	9,97	11,49	10,24	11,80	12,13	13,98	12,80	14,76	15,09	17,40	17,02	19,88	18,87	22,37	20.69	24.85	22.50	27.33	24.28	29.82

MINIMUM BEARING REQUIREMENTS:
3" BEARING AT BOTH ENDS AND 7½" AT INTERMEDIATE

SHADED AREAS:
- 4½" BEARING AT BOTH ENDS AND 11¼" BEARING AT INTERMEDIATE
- 6" BEARING AT BOTH ENDS AND 15" BEARING AT INTERMEDIATE
- 7½"BEARING AT BOTH ENDS AND 18¾" BEARING AT INTERMEDIATE

NOTES

1- DL = DEAD LOAD, LL = LIVE LOAD;
2- TABLES ARE BASED ON A MAXIMUM ROOF SLOPE OF 6/12;
3- LATERAL SUPPORT IS REQUIRED ALONG COMPRESSION EDGE OF BEAM AT INTERVAL OF 24' CENTRE-TO-CENTRE OR CLOSER;
4- PROVIDE LATERAL SUPPORT AT BEARING TO PREVENT LATERAL DISPLACEMENT OR ROTATION;
5- TABLES ARE CALCULATED WITH A SINGLE SPAN TRUSS;
6- TABLES ARE BASED ON SINGLE BEAM SPAN;
7- MAXIMUM SPANS ARE MEASURED CENTRE-TO-CENTRE BETWEEN SUPPORTS;
8- DEFLECTION LIMITATIONS: L/360 FOR LIVE LOAD AND L/180 FOR TOTAL LOAD;
9- CONTACT GLOBAL LVL INC. TECHNICAL DEPARTMENT FOR OTHER APPLICATIONS AND SIZES.



PRODUCT

GLOBAL LVL 1.9E-2850Fb

ALLOWABLE STRESS DESIGN (ASD)

ROOF SNOW (C_D = 1.15) - BEAM SPAN TABLES (feet)

Loads (psf)	Tributary width A/2 (feet)	5½"		7¼"		9¼"		9½"		11¼"		11⅞"		14"		16"		18"		20"		22"		24"	
		2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply	2 ply	3 ply
DL=10 LL=40	8	7,38	8,49	9,73	11,19	12,42	14,28	12,75	14,67	15,10	17,37	15,94	18,33	18,80	21,62	21,48	24,71	24,17	27,79	26.85	30.88	29.54	33.97	32.23	37.05
	10	6,83	7,86	9,01	10,36	11,49	13,23	11,80	13,58	13,98	16,09	14,75	16,98	17,40	20,02	19,88	22,88	22,37	25,74	24.85	28.60	27.34	31.46	29.82	34.32
	12	6,41	7,38	8,45	9,73	10,78	12,42	11,07	12,75	13,11	15,10	13,84	15,94	16,32	18,80	18,65	21,48	20,99	24,17	23.31	26.85	25.65	29.54	27.98	32.22
	14	6,07	7,00	8,00	9,22	10,21	11,77	10,49	12,09	12,42	14,32	13,11	15,11	15,46	17,82	17,67	20,36	19,88	22,91	22.09	25.45	24.30	28.00	26.51	30.54
	16	5,79	6,68	7,64	8,81	9,74	11,24	10,01	11,54	11,85	13,67	12,51	14,43	14,75	17,01	16,86	19,44	18,96	21,87	21.07	24.29	23.18	26.72	25.29	29.15
	18	5,55	6,41	7,32	8,45	9,34	10,78	9,60	11,07	11,37	13,11	12,00	13,84	14,14	16,32	16,17	18,65	18,19	20,99	20.21	23.31	22.23	25.65	24.25	27.98
	20	5,35	6,18	7,05	8,14	9,00	10,39	9,24	10,67	10,95	12,64	11,55	13,34	13,62	15,73	15,57	17,98	17,52	20,22	19.46	22.47	21.41	24.71	23.36	26.96
DL=15 LL=40	8	7,38	8,49	9,73	11,19	12,42	14,28	12,75	14,67	15,10	17,37	15,94	18,33	18,80	21,62	21,48	24,71	24,17	27,79	26.85	30.88	29.54	33.97	32.23	37.05
	10	6,83	7,86	9,01	10,36	11,49	13,23	11,80	13,58	13,98	16,09	14,75	16,98	17,40	20,02	19,88	22,88	22,37	25,74	24.85	28.60	27.34	31.46	29.82	34.32
	12	6,41	7,38	8,45	9,73	10,78	12,42	11,07	12,75	13,11	15,10	13,84	15,94	16,32	18,80	18,65	21,48	20,99	24,17	23.31	26.85	25.65	29.54	27.98	32.22
	14	6,07	7,00	8,00	9,22	10,21	11,77	10,49	12,09	12,42	14,32	13,11	15,11	15,46	17,82	17,67	20,36	19,88	22,91	22.09	25.45	24.30	28.00	26.51	30.54
	16	5,79	6,68	7,64	8,81	9,74	11,24	10,01	11,54	11,85	13,67	12,51	14,43	14,75	17,01	16,86	19,44	18,96	21,87	21.07	24.29	23.18	26.72	25.29	29.15
	18	5,55	6,41	7,32	8,45	9,34	10,78	9,60	11,07	11,37	13,11	12,00	13,84	14,14	16,32	16,17	18,65	18,19	20,99	20.21	23.31	22.23	25.65	24.25	27.98
	20	5,35	6,18	7,05	8,14	9,00	10,39	9,24	10,67	10,95	12,64	11,55	13,34	13,62	15,73	15,57	17,98	17,52	20,22	19.46	22.47	21.41	24.71	23.31	26.96
DL=20 LL=40	8	7,38	8,49	9,73	11,19	12,42	14,28	12,75	14,67	15,10	17,37	15,94	18,33	18,80	21,62	21,48	24,71	24,17	27,79	26.85	30.88	29.54	33.97	32.23	37.05
	10	6,83	7,86	9,01	10,36	11,49	13,23	11,80	13,58	13,98	16,09	14,75	16,98	17,40	20,02	19,88	22,88	22,37	25,74	24.85	28.60	27.34	31.46	29.82	34.32
	12	6,41	7,38	8,45	9,73	10,78	12,42	11,07	12,75	13,11	15,10	13,84	15,94	16,32	18,80	18,65	21,48	20,99	24,17	23.31	26.85	25.65	29.54	27.98	32.22
	14	6,07	7,00	8,00	9,22	10,21	11,77	10,49	12,09	12,42	14,32	13,11	15,11	15,46	17,82	17,67	20,36	19,88	22,91	22.09	25.45	24.30	28.00	26.51	30.54
	16	5,79	6,68	7,64	8,81	9,74	11,24	10,01	11,54	11,85	13,67	12,51	14,43	14,75	17,01	16,86	19,44	18,96	21,87	21.07	24.29	23.05	26.72	24.87	29.15
	18	5,55	6,41	7,32	8,45	9,34	10,78	9,60	11,07	11,37	13,11	12,00	13,84	14,14	16,32	16,17	18,65	18,19	20,99	19.99	23.31	21.73	25.65	23.45	27.98
	20	5,35	6,18	7,05	8,14	9,00	10,39	9,24	10,67	10,95	12,64	11,55	13,34	13,62	15,73	15,57	17,98	17,29	20,22	18.96	22.47	20.61	24.71	22.24	26.96

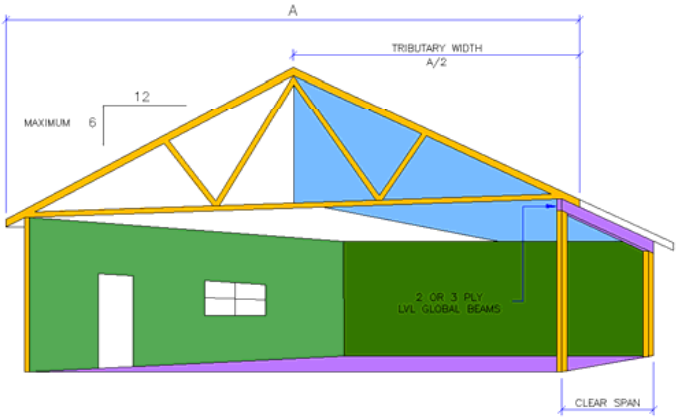
MINIMUM BEARING REQUIREMENTS:
3" BEARING AT BOTH ENDS AND 7½" AT INTERMEDIATE

SHADED AREAS:

- 4½" BEARING AT BOTH ENDS AND 11¼" BEARING AT INTERMEDIATE
- 6" BEARING AT BOTH ENDS AND 15" BEARING AT INTERMEDIATE
- 7½"BEARING AT BOTH ENDS AND 18¾" BEARING AT INTERMEDIATE

NOTES

1- DL = DEAD LOAD, LL = LIVE LOAD;
2- TABLES ARE BASED ON A MAXIMUM ROOF SLOPE OF 6/12;
3- LATERAL SUPPORT IS REQUIRED ALONG COMPRESSION EDGE OF BEAM AT INTERVAL OF 24" CENTRE-TO-CENTRE OR CLOSER;
4- PROVIDE LATERAL SUPPORT AT BEARING TO PREVENT LATERAL DISPLACEMENT OR ROTATION;
5- TABLES ARE CALCULATED WITH A SINGLE SPAN TRUSS;
6- TABLES ARE BASED ON SINGLE BEAM SPAN;
7- MAXIMUM SPANS ARE MEASURED CENTRE-TO-CENTRE BETWEEN SUPPORTS;
8- DEFLECTION LIMITATIONS: L/360 FOR LIVE LOAD AND L/180 FOR TOTAL LOAD;
9- CONTACT GLOBAL LVL INC. TECHNICAL DEPARTMENT FOR OTHER APPLICATIONS AND SIZES.



MULTIPLE MEMBER CONNECTIONS

TOP LOAD (1)			
Depth (in)	Number of plies		
	2	3	4
5½ to 12½	2 rows 16d nails at 12" o.c.	2 rows 16d nails at 12" o.c.	2 rows ½" bolts at 24" o.c.
14 to 18¾	3 rows 16d nails at 12" o.c.	3 rows 16d nails at 12" o.c.	3 rows ½" bolts at 24" o.c.

NOTES

1- LOAD MUST BE APPLIED EVENLY ACROSS ENTIRE MEMBER WIDTH.

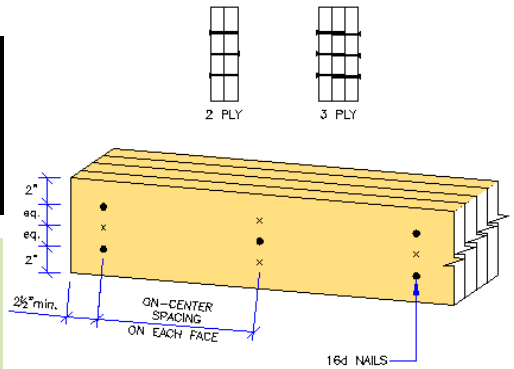
NAILED CONNECTION ALLOWABLE UNIFORM LOAD APPLIED TO EITHER 1¾" OUTSIDE MEMBER (plf)				
NUMBER OF PLIES	2 rows 16d nails at 12" o.c.	2 rows 16d nails at 6" o.c.	3 rows 16d nails at 12" o.c.	3 rows 16d nails at 6" o.c.
2	485	975	730	1465
3 (2)	360	730	545	1095

NOTES

1- THE TABULATED NAILING PATTERN IS FROM EACH SIDE OF A 3 PLY MEMBER;

2- TABULATED VALUES MUST BE VERIFIED WITH THE MAXIMUM ALLOWABLE UNIFORM LOAD OF THE MEMBER;

3- ALL NAILS SHOWN SHALL BE MINIMUM 16d: DIAMETER 0,162 INCH, LENGTH 3½", BENDING YIELD STRENGTH (F_{yb}) = 90 000 PSI.



BOLTED CONNECTION ALLOWABLE UNIFORM LOAD APPLIED TO EITHER 1¾" OUTSIDE MEMBER (plf)				
NUMBER OF PLIES	2 rows ½" bolts at 24" o.c.	2 rows ½" bolts at 12" o.c.	3 rows ½" bolts at 24" o.c.	3 rows ½" bolts at 12" o.c.
2	410	820	615	1230
3	310	615	460	920
4	275	550	410	820

NOTES

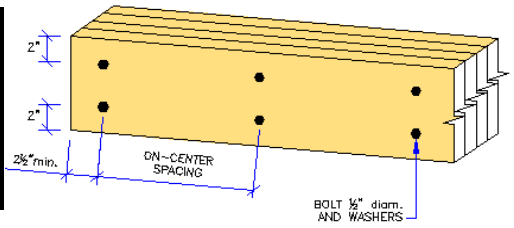
1- TABULATED VALUES ARE ALLOWABLE UNIFORM SIDE LOADS FOR NORMAL DURATION; ALLOWABLE UNIFORM SIDE LOADS SHALL BE PERMITTED TO BE AJUSTED FOR OTHER DURATIONS AS PERMITTED BY THE CODE;

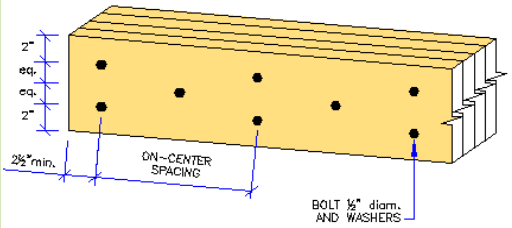
2- ALL BOLTS SHOWN SHALL BE MINIMUM: GRADE A307, DIAMETER 1/2", BENDING YIELD STRENGTH F_{yb} = 45 000 PSI;

3- 2" (EXTERIOR) DIAMETER WASHERS SHALL BE USED UNDER THE HEAD AND NUT OF ALL BOLTS;

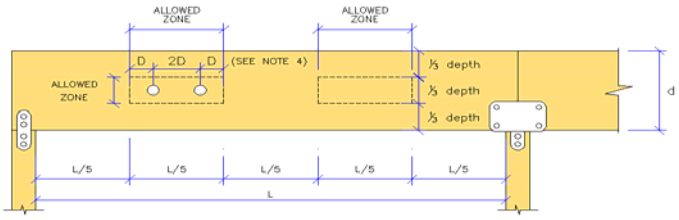
4- PREDRILL ALL BOLT HOLES TO 9/16" DIAMETER;

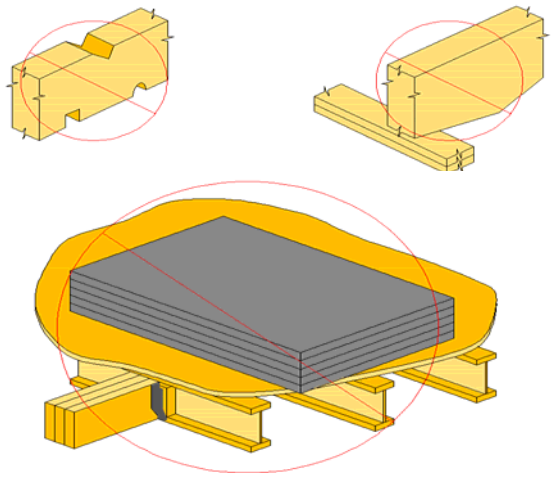
5- TABULATED VALUES MUST BE VERIFIED WITH THE MAXIMUM ALLOWABLE UNIFORM LOAD OF THE MEMBER.





ALLOWABLE HOLES AND INSTALLATION





NOTES

1- MAXIMUM 1" HOLE DIAMETER (D=1") FOR BEAM DEPTHS BETWEEN 7¼" TO 9¼"; MAXIMUM 2" HOLE DIAMETER (D=2") FOR BEAM DEPTHS BETWEEN 11¼" TO 18¾";

2- THE ALLOWED HOLE ZONE IS FOR UNIFORMLY LOADED MEMBERS, SINGLE OR CONTINUOUS;

3- WHENEVER POSSIBLE HOLES SHOULD BE CENTERED IN THE ALLOWABLE ZONE;

4- WHERE MORE THAN ONE HOLE IS NECESSARY, THE DISTANCE BETWEEN ADJACENT HOLE EDGES SHALL EQUAL OR EXCEED TWICE THE DIAMETER OF THE LARGEST ROUND HOLE;

5- DO NOT DRILL, NOTCH, CUT OR ALTER MEMBER UNLESS AUTORIZED BY GLOBAL LVL INC;

6- AVOID OVERLOADING FLOOR;

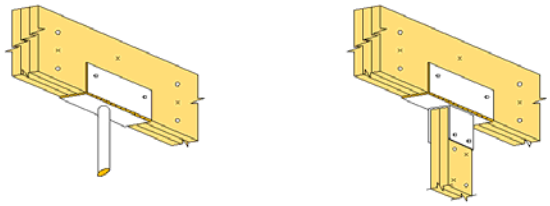
7- FOR ALL OTHER CONDITIONS, CONTACT GLOBAL LVL INC. TECHNICAL DEPARTMENT.

PRODUCT

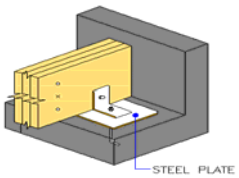
GLOBAL LVL 1.9E-2850Fb ALLOWABLE STRESS DESIGN (ASD)

MINIMUM BEARING LENGTH REQUIREMENTS (inches)

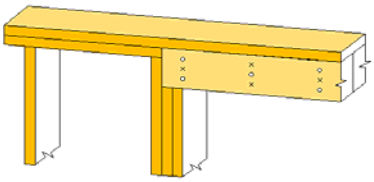
TOTAL REACTION R_F (lb)	1 PLY (b=1¾")	2 PLIES (b=3½")	3 PLIES (b=5¼")	4 PLIES (b=7")
1 000	1½	1½	1½	1½
2 000	2	1½	1½	1½
3 000	3	1½	1½	1½
4 000	3	2	1½	1½
5 000	5	2½	1¾	1½
6 000	5	3	2	1½
7 000	7	3½	2½	1¾
8 000	9	4	2¾	2
9 000	9	4½	3	2¼
10 000	10	5	3½	2½
11 000		5½	3¾	2¾
12 000		6	4	3
13 000		6½	4½	3¼
14 000		7	4¾	3½
15 000		7½	5	3¾
16 000		8	5½	4
17 000		8½	5¾	4¼
18 000		9	6	4½
19 000		9½	6½	4¾
20 000		10	6¾	5
21 000			7	5¼
22 000			7½	5½
23 000			7¾	5¾
24 000			8	6
25 000			8½	6¼
26 000			8¾	6½
27 000			9	6¾
28 000			9½	7
29 000			9¾	7¼
30 000			10	7½
31 000				7¾
32 000				8
33 000				8¼
34 000				8½
35 000				8¾
36 000				9
37 000				9¼
38 000				9½
39 000				9¾
40 000				10



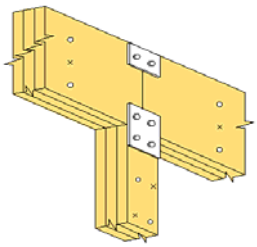
BEARING FOR SINGLE OR CONTINUOUS BEAM SPAN



BEARING ON CONCRETE WALL



BEARING FOR DOOR OR WINDOW HEADER



BEARING FOR SINGLE BEAM SPAN

NOTES

1- REQUIRED BEARING LENGTH (in) = TOTAL REACTION (lb) / ($F_{C\perp}$ x b) WHERE b = 1¾ x NUMBER OF PLIES;
2- LATERAL SUPPORT IS REQUIRED AT EACH BEARING SUPPORT TO PREVENT ROTATION AND LATERAL DISPLACEMENT;
3- BEARING LENGTH SPECIFIED REQUIRES A WIDTH EQUAL TO OR LARGER THAN THE WIDTH (b) OF THE SUPPORTED BEAM;
4- TABULATED REQUIRED BEARING LENGTHS FOR NORMAL DURATION OF LOAD. REQUIRED BEARING LENGTHS SHALL NOT BE ADJUSTED FOR OTHER LOAD DURATIONS.

PRODUCT

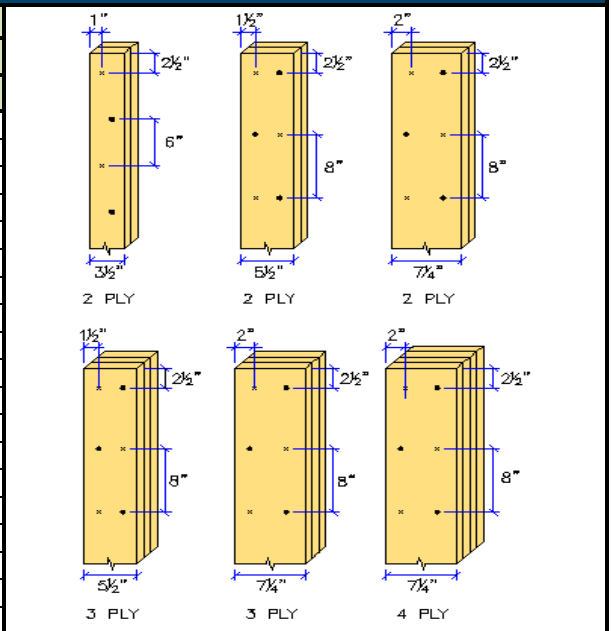
GLOBAL LVL 1.9E-2850Fb

ALLOWABLE STRESS DESIGN (ASD)

MAXIMUM AXIAL LOAD (P_f, in pounds)

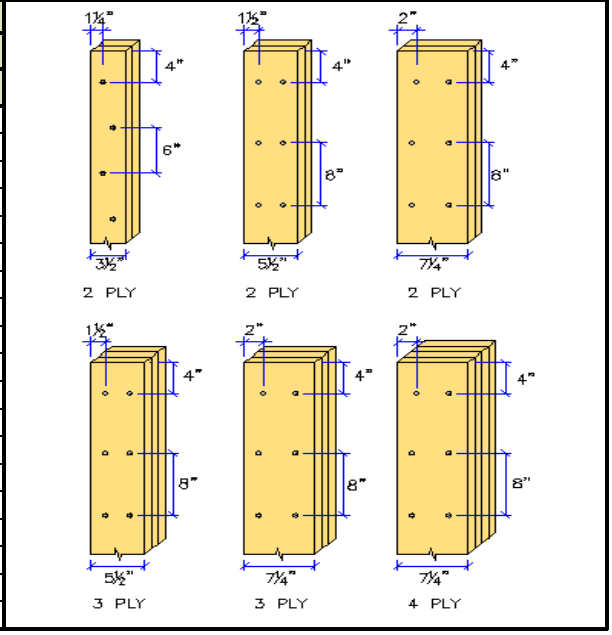
ON COLUMN ASSEMBLED WITH NAILS [1]

effective length of column (feet) [2]	Column size (inches)					
	3½" x 3½"	3½" x 5½"	3½" x 7¼"	5¼" x 5½	5¼" x 7¼"	7" x 7¼"
6	10602	17672	23511	33187	44581	61743
7	8726	14568	19384	30984	42005	59960
8	7170	11936	15869	28225	38556	57700
9	5950	9852	13086	25149	34502	54872
10	4993	8225	10914	22114	30383	51516
11	4239	6948	9212	19387	26617	47703
12	3637	5935	7863	17025	23333	43680
13	3151	5122	6781	15011	20528	39722
14	2754	4461	5903	13301	18154	36019
15				11853	16130	32657
16				10610	14407	29652
17				9544	12932	26984
18				8625	11664	24622
19				7828	10567	22530
20				7133	9613	20676
21				6524	8779	19028
22						17560
23						16247
24						15071



ON COLUMN ASSEMBLED WITH BOLTS [1]

effective length of column (feet) [2]	Column size (inches)					
	3½" x 3½"	3½" x 5½"	3½" x 7¼"	5¼" x 5½	5¼" x 7¼"	7" x 7¼"
6	12091	20887	27981	38423	52208	72081
7	9982	17354	23256	35646	49115	69612
8	8255	14326	19177	32352	45109	66573
9	6893	11902	15906	28825	40498	63012
10	5824	9989	13328	25413	35851	58929
11	4972	8474	11289	22371	31565	54466
12	4288	7263	9664	19737	27815	49882
13	3733	6285	8354	17485	24598	45445
14	3276	5487	7285	15563	21835	41326
15				13921	19474	37593
16				12512	17451	34252
17				11297	15709	31281
18				10245	14204	28642
19				9332	12897	26297
20				8528	11756	24210
21				7821	10755	22348
22						20683
23						19190
24						17846



NOTES:

1- TABULATED VALUES ARE FOR NORMAL DURATION OF LOAD (C_D = 1,0). MAXIMUM AXIAL LOAD SHALL BE PERMITTED TO BE ADJUSTED FOR OTHER LOAD DURATIONS AS PERMITTED BY THE CODE;

2- EFFECTIVE LENGTH IS THE DISTANCE BETWEEN CENTERS OF RESTRAINING MEMBERS;

3- TABLES ASSUME THAT THE COLUMN IS UNBRACED LATERALLY EXCEPT AT THE ENDS OF THE GLOBAL LVL COLUMN;

4- SEE FIGURES FOR NAILING AND BOLTING SCHEDULES;

5- TABLES ASSUME AN ECCENTRICITY = 1/6 OF THE LARGER DIMENSION OF THE COLUMN (THICKNESS OR WIDTH);

6- TABULATED MAXIMUM AXIAL LOADS ARE BASED ON APPARENT MODULUS OF ELASTICITY (E = 1,8x10^6 psi);

7- 1/2" DIAM. BOLTS WITH 2" EXTERIOR DIAM. WASHERS UNDER HEAD AND NUT, IN COMPLIANCE WITH ASTM STANDARD A307;

8- TYPE OF NAILS:
2 PLIES = 3½" COMMON NAILS (0,162" DIAM.);
3 PLIES = 5" COMMON NAILS (0,162" DIAM.);
4 PLIES = 7" COMMON NAILS (0,162" DIAM.);

9- TABLE ASSUME A SINGLE AXIAL LOAD. FOR OTHER LOAD CASES, CONTACT GLOBAL LVL INC. TECHNICAL DEPARTMENT.

PRODUCT

GLOBAL LVL 1.9E-2850Fb ALLOWABLE STRESS DESIGN (ASD)

GENERAL NOTES

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REPORT FROM ACCREDITED CERTIFICATION ORGANIZATION

APA PRODUCT REPORT® NUMBER: PR-L301 (THE ENGINEERED WOOD ASSOCIATION)

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