

## Simple Span Application



### Roof Beams Snow Load (LDF=1.15)

$F_b = 2,400$  psi  
 $F_v = 265$  psi  
 $E = 1.8 \times 10^6$   
 True  $E = 1.9 \times 10^6$

Width (in.)	Depth (in.)	Span (feet)																
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
3 1/2	6	599	331	189	117	77	53	-	-	-	-	-	-	-	-	-	-	-
	7 1/2	937	597	373	233	154	106	76	55	-	-	-	-	-	-	-	-	-
	9	1,351	862	596	406	269	187	134	99	74	57	-	-	-	-	-	-	-
	9 1/2	1,505	961	665	478	318	221	159	117	88	68	53	-	-	-	-	-	-
	10 1/2	1,840	1,174	813	595	431	300	216	160	121	94	73	58	-	-	-	-	-
	11 7/8	2,355	1,503	1,041	762	581	437	316	235	178	138	109	86	69	56	-	-	-
	13 1/2	3,045	1,945	1,347	987	753	592	467	348	265	206	163	130	105	86	71	58	-
	14	3,275	2,092	1,449	1,061	810	637	514	389	297	231	183	146	118	97	80	66	55
	15	3,761	2,402	1,664	1,219	931	733	591	480	367	286	226	182	147	121	100	83	69
	16	4,253	2,734	1,895	1,388	1,060	834	673	554	447	349	277	222	181	148	123	103	86
	16 1/2	4,456	2,908	2,015	1,477	1,127	888	717	590	490	384	304	245	199	164	136	113	95
	18	5,104	3,462	2,400	1,759	1,343	1,058	854	698	579	487	398	321	262	216	179	150	126
	19 1/2	5,822	4,065	2,818	2,066	1,578	1,243	998	814	675	568	484	411	335	277	231	194	164
	21	6,619	4,577	3,269	2,397	1,831	1,440	1,150	938	779	655	558	481	417	349	291	245	207
22 1/2	7,510	5,101	3,754	2,753	2,103	1,642	1,313	1,071	889	748	638	549	477	418	361	304	258	
5 1/2	6	941	520	298	184	121	83	58	-	-	-	-	-	-	-	-	-	-
	7 1/2	1,472	939	587	366	242	167	119	87	65	-	-	-	-	-	-	-	-
	9	2,123	1,354	937	637	423	294	211	155	117	89	69	54	-	-	-	-	-
	9 1/2	2,366	1,510	1,044	751	499	347	249	184	139	107	83	65	51	-	-	-	-
	10 1/2	2,892	1,846	1,277	935	677	471	340	252	191	147	115	91	72	58	-	-	-
	11 7/8	3,700	2,363	1,636	1,198	913	686	496	369	280	217	171	136	109	88	72	59	-
	13 1/2	4,785	3,056	2,117	1,550	1,183	927	734	547	417	324	256	205	165	135	111	92	76
	14	5,147	3,287	2,277	1,668	1,273	994	793	611	466	363	287	230	186	152	125	104	86
	15	5,910	3,775	2,615	1,916	1,459	1,135	906	738	577	449	356	286	232	190	157	130	109
	16	6,683	4,296	2,977	2,182	1,651	1,284	1,025	835	692	548	435	349	284	233	193	161	135
	16 1/2	7,002	4,570	3,167	2,321	1,751	1,362	1,088	886	735	603	478	385	313	257	213	178	150
	18	8,021	5,441	3,771	2,744	2,067	1,609	1,285	1,048	869	730	622	504	411	339	281	236	199
	19 1/2	9,149	6,387	4,428	3,197	2,409	1,875	1,498	1,222	1,013	852	726	624	527	435	362	304	257
	21	10,401	7,192	5,101	3,683	2,775	2,161	1,726	1,408	1,168	983	837	721	626	548	457	384	326
	22 1/2	11,801	8,015	5,817	4,200	3,166	2,466	1,970	1,607	1,334	1,123	957	824	715	626	552	477	405
	24	13,377	8,907	6,578	4,750	3,581	2,789	2,229	1,819	1,510	1,271	1,083	933	811	710	626	555	495

Tabulated values are pounds per lineal foot.

Notes for X-Beam Roof Beams:

- (1) For preliminary design use only. Final design should include a complete analysis, including bearing stresses and lateral stability.
- (2) Span = simply supported beam.
- (3) Maximum deflection =  $L/180$  under live load. Other deflection limits may apply.
- (4) Service condition = dry.
- (5) Tabulated values represent total loads and include beam weight (assumed 35 pcf).
- (6) Sufficient bearing length shall be provided at supports.
- (7) Maximum beam shear is located at a distance from the supports equal to the depth of the beam.

Special order sizes in green.

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Width (in.)	Depth (in.)	Span (feet)																
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
6 3/4	9	2,605	1,662	1,150	782	519	360	259	191	143	110	85	66	52	-	-	-	-
	10 1/2	3,549	2,265	1,568	1,147	831	578	417	309	234	180	141	111	89	71	57	-	-
	12	4,638	2,961	2,050	1,501	1,144	869	628	467	355	275	216	172	139	112	91	75	61
	13 1/2	5,873	3,750	2,598	1,903	1,434	1,115	889	671	512	398	314	251	203	166	136	112	93
	15	7,253	4,633	3,210	2,330	1,754	1,364	1,089	887	708	551	437	350	284	233	192	160	134
	16 1/2	8,593	5,609	3,873	2,795	2,105	1,637	1,307	1,065	883	740	587	472	384	316	262	219	183
	18	9,844	6,677	4,572	3,299	2,485	1,934	1,544	1,259	1,044	878	747	618	504	416	345	289	244
	19 1/2	11,228	7,824	5,325	3,844	2,896	2,254	1,801	1,468	1,218	1,024	872	750	647	534	445	373	316
	21	12,765	8,827	6,133	4,427	3,336	2,598	2,075	1,692	1,404	1,182	1,006	866	752	658	561	472	400
	22 1/2	14,484	9,837	6,994	5,050	3,806	2,964	2,368	1,932	1,603	1,349	1,150	990	859	752	663	586	497
	24	16,417	10,932	7,909	5,711	4,305	3,353	2,679	2,186	1,815	1,528	1,302	1,121	974	853	752	667	595
	25 1/2	18,609	12,122	8,877	6,410	4,833	3,764	3,009	2,456	2,038	1,717	1,463	1,260	1,095	959	846	751	670
	27	21,114	13,420	9,830	7,148	5,389	4,199	3,356	2,740	2,275	1,916	1,633	1,407	1,223	1,072	945	839	749
	28 1/2	24,005	14,842	10,735	7,924	5,975	4,655	3,722	3,038	2,523	2,125	1,812	1,562	1,358	1,190	1,050	932	832
30	27,378	16,407	11,705	8,737	6,589	5,134	4,105	3,352	2,784	2,345	2,000	1,724	1,499	1,314	1,160	1,030	920	
Width (in.)	Depth (in.)	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
8 3/4	9	3,337	2,154	1,490	1,014	673	467	335	247	186	142	110	86	67	53	-	-	-
	10 1/2	4,600	2,936	2,032	1,487	1,077	750	540	400	303	234	183	144	115	92	74	-	-
	12	6,012	3,838	2,658	1,921	1,445	1,123	814	606	461	357	281	223	180	145	119	97	79
	13 1/2	7,613	4,862	3,336	2,405	1,810	1,407	1,122	870	663	516	407	326	263	215	176	146	121
	15	9,402	5,996	4,078	2,942	2,215	1,722	1,374	1,119	918	715	566	454	369	302	249	207	173
	16 1/2	11,139	7,189	4,891	3,529	2,657	2,067	1,650	1,344	1,114	936	761	612	498	409	339	283	238
	18	12,761	8,485	5,774	4,166	3,138	2,442	1,950	1,589	1,317	1,108	942	802	654	539	448	375	316
	19 1/2	14,554	9,882	6,725	4,854	3,657	2,846	2,273	1,853	1,537	1,293	1,100	946	821	692	577	484	409
	21	16,547	11,379	7,745	5,591	4,213	3,280	2,620	2,137	1,772	1,491	1,270	1,093	948	830	727	612	518
	22 1/2	18,775	12,752	8,833	6,377	4,806	3,742	2,990	2,439	2,024	1,703	1,451	1,249	1,084	949	836	741	644
	24	21,281	14,171	9,988	7,212	5,436	4,234	3,383	2,760	2,291	1,928	1,643	1,415	1,229	1,076	948	841	750
	25 1/2	24,123	15,713	11,211	8,095	6,103	4,753	3,799	3,100	2,573	2,167	1,847	1,590	1,382	1,210	1,067	947	845
	27	27,370	17,396	12,500	9,027	6,806	5,302	4,238	3,459	2,872	2,418	2,062	1,776	1,543	1,352	1,193	1,058	945
	28 1/2	31,118	19,240	13,855	10,007	7,545	5,878	4,700	3,836	3,185	2,683	2,288	1,971	1,713	1,501	1,325	1,176	1,050
30	35,490	21,269	15,174	11,034	8,320	6,483	5,184	4,232	3,514	2,961	2,525	2,176	1,892	1,658	1,463	1,299	1,160	

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