



**TABLES FOR ICC REPORT ESR-2054**  
***ALLOWABLE UNIFORM LOADS***  
***LIMITING SPANS FOR SINGLE SPAN JOISTS***  
***ALLOWABLE WEB CRIPPLING***  
**Tables 9-12**



**1-800-275-2279**

### INTERIOR & EXTERIOR FRAMING

#### Steeler Manufactured Products

- |                           |                          |
|---------------------------|--------------------------|
| * Steel Studs & Track     | * Flat Stock             |
| * Smooth Products™        | * Shaftwall Studs        |
| * Slotted Track           | * J Track                |
| * Sound Resilient Channel | * Z-Furring Channel      |
| * Furring Channel         | * Custom Brake Shapes    |
| * Cold-Rolled Channel     | * Steeler Slotted Studs™ |
| * Angle                   | * Pony Wall Supports     |



### INTERIOR FINISHING & DRYWALL

#### Steeler Product Offerings

- \* Hanger Wire
- \* U-Hank Tie Wire
- \* Engineered Slide Clips
- \* National Gypsum
- \* The Steel Network
- \* Knauf Insulation
- \* Westpac Materials
- \* Products from USG
- \* Murco Wall Products
- \* Award Metals Corner Beads
- \* Trim-Tex Drywall Products
- \* And more...



### FASTENERS

#### Steeler Product Offerings

- |                         |                           |
|-------------------------|---------------------------|
| * Super Steelers™*      | * Rust Resistant Screws   |
| * Hi-Lo Super Steelers™ | * Drywall Drillers*       |
| * Super Woodies™*       | * Cement Board Screws     |
| * Super Framers*        | * Super Framing Drillers* |
| * Super Lathers*        | * Wafer Head Drillers*    |
| * Super Hex Framers*    | * Super Hex Drillers*     |
| * Super Laminating      | * And more...             |



\*Denotes availability in zinc coating

### TOOLS & ACCESSORIES

#### Steeler Product Offerings

- \* Bit Tips & Bit Tip Holders
- \* Magnetic Nut Runners
- \* Chop Saw Blades
- \* DeWalt
- \* Empire Levels
- \* Kett Tool Company
- \* ToolPro
- \* Pacific Laser Systems
- \* Wal-Board Tools
- \* Ramset Fastening Systems
- \* 3M Construction Supplies
- \* And more...



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Table 9A--Allowable Uniform Loads on S-Member Joists: Deflection of L/180 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/180																											
		Joist Span, ft																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
250 S162-033	0.721	54	39	30	24																								
250 S162-043	0.983	87	69	51	35	25																							
250 S162-054 (50 ksi)	1.218	81	69	60	43	31	23																						
250 S162-068 (50 ksi)	1.513	72	61	53	47	38	28	21																					
250 S162-097 (50 ksi)	2.128	54	46	40	35	32	29	26	22																				
250 S200-033	0.877	69	51	39	30	23																							
250 S200-043	1.136	87	72	55	42	30	22																						
250 S200-054 (50 ksi)	1.410	80	69	60	51	37	27	21																					
250 S200-068 (50 ksi)	1.750	71	61	53	47	42	34	25	20																				
250 S200-097 (50 ksi)	2.418	54	46	40	35	31	28	26	24	21																			
250 S250-118 (50 ksi)	2.883	42	36	31	27	24	22	20																					
250 S250-043	1.289	87	74	58	46	36	27	20																					
250 S250-054 (50 ksi)	1.603	80	69	60	53	44	33	25																					
250 S250-068 (50 ksi)	1.993	71	61	53	47	42	38	31	24																				
250 S250-097 (50 ksi)	2.764	54	46	39	35	31	28	25	23	21	20																		
250 S250-118 (50 ksi)	3.305	42	36	30	27	24	21																						
250 S300-054 (50 ksi)	1.843	80	68	60	53	47	38	29	23																				
250 S300-068 (50 ksi)	2.296	71	60	52	46	42	38	34	28	22																			
250 S300-097 (50 ksi)	3.196	53	45	39	34	31	28	25	23	21																			
250 S300-118 (50 ksi)	3.833	41	35	30	26	23	21																						
250 S350-054 (50 ksi)	2.055	80	68	59	53	47	43	33	26	20																			
250 S350-068 (50 ksi)	2.562	70	60	52	46	41	37	34	31	25	20																		
250 S350-097 (50 ksi)	3.577	53	45	39	34	30	27	25	22	21																			
250 S350-118 (50 ksi)	4.297	41	34	29	26	23	20																						
350 S162-033	0.839	81	59	45	36	29	24	20																					
350 S162-043	1.136	132	97	74	58	47	38	32	25	20																			

Table 9A--Allowable Uniform Loads on S-Member Joists: Deflection of L/180 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/180																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
350 S162-054	1.410	184	135	103	81	65	51	39	31	24																			
350 S162-054 (50 ksi)	1.410	240	176	134	95	69	51	39	31	24																			
350 S162-068	1.755	196	167	130	102	82	63	48	38	30	24																		
350 S162-068 (50 ksi)	1.755	297	250	167	117	85	63	48	38	30	24																		
350 S162-097	2.474	168	144	125	111	100	86	66	51	40	32	26	21																
350 S162-097 (50 ksi)	2.474	256	219	191	159	115	86	66	51	40	32	26	21																
350 S200-033	0.932	85	62	48	37	30	25	21																					
350 S200-043	1.251	136	100	76	60	48	40	33	28	23																			
350 S200-054	1.555	199	146	111	88	71	58	46	35	28	23																		
350 S200-054 (50 ksi)	1.555	245	180	137	108	80	60	46	35	28	23																		
350 S200-068	1.961	195	167	146	117	94	74	56	44	35	28	23																	
350 S200-068 (50 ksi)	1.961	297	254	195	137	99	74	56	44	35	28	23																	
350 S200-097	2.795	168	143	125	111	99	90	78	60	48	38	31	25	21															
350 S200-097 (50 ksi)	2.795	256	219	191	169	136	102	78	60	48	38	31	25	21															
350 S200-118	3.305	148	127	110	98	88	79	73	67	56	45	36	30	24	20														
350 S200-118 (50 ksi)	3.305	226	194	169	150	134	118	90	70	56	45	36	30	24	20														
350 S250-043	1.443	160	117	89	70	57	46	39	33	27	22																		
350 S250-054	1.795	205	150	115	90	73	60	50	42	34	27	22																	
350 S250-054 (50 ksi)	1.795	277	203	155	122	95	71	54	42	34	27	22																	
350 S250-068	2.235	195	167	146	129	105	87	67	53	42	33	27	22																
350 S250-068 (50 ksi)	2.235	297	254	206	162	118	88	67	53	42	33	27	22																
350 S250-097	3.110	167	143	125	110	99	90	82	71	57	45	37	30	25	21														
350 S250-097 (50 ksi)	3.110	255	218	191	169	152	120	92	71	57	45	37	30	25	21														
350 S250-118	3.727	148	126	110	97	87	79	72	66	61	53	43	35	29	24	20													
350 S250-118 (50 ksi)	3.727	226	193	169	149	134	122	108	84	66	53	43	35	29	24	20													
350 S300-054	2.036	209	171	130	102	83	68	57	48	39	32	26	21																
350 S300-054 (50 ksi)	2.036	312	228	174	137	109	81	62	48	38	31	25	21																
350 S300-068	2.538	195	167	145	129	107	88	74	61	49	39	32	26	22															
350 S300-068 (50 ksi)	2.538	296	254	222	179	138	103	79	61	49	39	32	26	22															
350 S300-097	3.542	167	142	124	110	99	89	82	75	66	53	43	36	29	24	20													
350 S300-097 (50 ksi)	3.542	255	218	190	169	151	137	107	84	66	53	43	36	29	24	20													
350 S300-118	4.255	147	126	109	97	87	78	72	66	61	56	51	42	35	29	24	20												
350 S300-118 (50 ksi)	4.255	225	193	168	149	134	121	111	99	78	63	51	42	35	29	24	20												
350 S350-054	2.248	209	179	138	109	88	72	60	51	44	36	29	24	20															
350 S350-054 (50 ksi)	2.248	313	241	184	145	117	90	69	53	42	34	28	23																
350 S350-068	2.805	195	166	145	129	113	93	78	66	55	44	36	30	25	20														
350 S350-068 (50 ksi)	2.805	296	253	221	190	152	114	87	68	54	43	35	29	24	20														
350 S350-097	3.923	166	142	124	110	98	89	81	75	69	61	49	41	34	28	23	20												
350 S350-097 (50 ksi)	3.923	254	218	190	168	151	137	122	95	75	61	49	40	33	28	23	20												
350 S350-118	4.720	147	125	109	96	86	78	71	65	60	56	52	48	40	33	28	23	20											
350 S350-118 (50 ksi)	4.720	225	192	168	148	133	121	110	101	90	72	58	48	40	33	28	23	20											
362 S162-033	0.854	84	62	47	37	30	25	20																					
362 S162-043	1.155	138	101	77	61	49	40	34	27	21																			
362 S162-054	1.435	189	138	106	83	67	55	43	33	26	21																		
362 S162-054 (50 ksi)	1.435	250	184	140	103	75	56	43	33	26	21																		

Table 9A--Allowable Uniform Loads on S-Member Joists: Deflection of L/180 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L / 180																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
362 S162-068	1.785	219	178	136	107	86	69	52	41	32	26	21																	
362 S162-068 (50 ksi)	1.785	333	266	181	127	92	69	52	41	32	26	21																	
362 S162-097	2.517	190	162	142	126	113	94	71	56	44	35	29	24																
362 S162-097 (50 ksi)	2.517	289	247	216	173	125	94	71	56	44	35	29	24																
362 S200-033	0.947	89	65	50	39	31	26	21																					
362 S200-043	1.270	142	104	80	63	50	41	35	29	25	20																		
362 S200-054	1.579	208	152	116	92	74	61	49	39	31	25	20																	
362 S200-054 (50 ksi)	1.579	256	188	143	113	87	65	49	39	31	25	20																	
362 S200-068	1.992	219	187	156	123	99	80	61	48	38	30	25	20																
362 S200-068 (50 ksi)	1.992	333	285	212	148	107	80	61	48	38	30	25	20																
362 S200-097	2.839	189	162	141	125	113	102	84	66	52	42	34	28	23															
362 S200-097 (50 ksi)	2.839	289	247	216	182	148	110	84	66	52	42	34	28	23															
362 S200-118	3.368	169	145	126	112	100	91	83	76	61	49	40	32	27	22														
362 S200-118 (50 ksi)	3.368	258	221	193	171	153	129	98	77	61	49	40	32	27	22														
362 S250-043	1.462	166	122	93	73	59	48	41	34	29	24																		
362 S250-054	1.819	215	157	120	94	76	63	52	44	37	30	24	20																
362 S250-054 (50 ksi)	1.819	290	212	162	128	103	77	59	46	37	29	24	20																
362 S250-068	2.265	218	187	163	137	110	91	73	57	45	36	30	24	20															
362 S250-068 (50 ksi)	2.265	332	283	216	170	128	96	73	57	45	36	30	24	20															
362 S250-097	3.153	189	162	141	125	112	102	93	78	61	49	40	33	27	23														
362 S250-097 (50 ksi)	3.153	289	247	216	191	172	130	99	78	61	49	40	33	27	23														
362 S250-118	3.780	169	144	126	111	100	90	83	76	70	58	47	39	32	27	23													
362 S250-118 (50 ksi)	3.780	258	220	192	170	153	139	117	91	72	58	47	39	32	27	23													
362 S300-054	2.060	233	179	136	107	86	71	59	50	43	34																		
362 S300-054 (50 ksi)	2.060	325	238	182	143	116	88	67	53	42	34	27	22																
362 S300-068	2.569	218	187	163	139	112	92	77	65	53	42	36	28	23	20														
362 S300-068 (50 ksi)	2.569	332	284	238	188	149	111	85	66	53	42	34	28	23	20														
362 S300-097	3.585	189	161	141	125	112	101	93	85	72	58	47	39	32	27	22													
362 S300-097 (50 ksi)	3.585	288	246	215	191	171	153	117	91	72	58	47	39	32	27	22													
362 S300-118	4.308	168	144	125	111	99	90	82	75	70	65	56	46	38	32	26	22												
362 S300-118 (50 ksi)	4.308	257	220	192	170	152	138	126	108	85	68	56	46	38	32	26	22												
362 S350-054	2.272	233	190	145	114	92	76	63	53	46	39	32	26	21															
362 S350-054 (50 ksi)	2.272	336	251	192	151	122	97	74	58	46	37	30	25	20															
362 S350-068	2.835	218	186	163	144	119	98	82	69	59	48	39	32	27	22														
362 S350-068 (50 ksi)	2.835	332	284	248	199	161	123	94	73	58	47	38	31	26	22														
362 S350-097	3.966	188	161	140	124	111	101	92	85	78	66	54	44	37	30	26	22												
362 S350-097 (50 ksi)	3.966	288	246	215	190	171	155	132	103	82	66	53	44	36	30	25	21												
362 S350-118	4.773	168	143	125	110	99	89	82	75	69	64	50	43	36	30	25	22												
362 S350-118 (50 ksi)	4.773	257	219	191	169	152	138	126	116	97	78	64	52	43	36	30	25	22											
400 S162-033	0.898	95	69	53	42	34	28	23																					
400 S162-043	1.213	156	114	87	68	55	45	38	32	27	22																		
400 S162-054	1.507	195	143	109	86	69	57	48	40	33	27	22																	
400 S162-054 (50 ksi)	1.507	283	207	158	125	94	71	54	42	33	27	22																	
400 S162-068	1.876	279	204	156	123	99	82	66	52	41	33	27	22																
400 S162-068 (50 ksi)	1.876	366	268	205	160	116	87	66	52	41	33	27	22																

Table 9A--Allowable Uniform Loads on S-Member Joists: Deflection of L/180 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L / 180																											
		Joist Span, ft																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
400 S162-097	2.647	263	225	197	174	143	118	91	71	56	45	37	30	25	21														
400 S162-097 (50 ksi)	2.647	400	342	299	219	159	119	91	71	56	45	37	30	25	21														
400 S200-033	0.991	100	73	56	44	35	29	24	20																				
400 S200-043	1.328	160	117	90	71	57	47	39	33	28	25	21																	
400 S200-054	1.651	217	159	121	95	77	63	53	45	38	31	25	21																
400 S200-054 (50 ksi)	1.651	289	212	162	127	103	81	62	49	39	31	25	21																
400 S200-068	2.082	296	233	178	140	113	93	77	60	48	39	31	26	21															
400 S200-068 (50 ksi)	2.082	408	299	229	180	135	101	77	60	48	39	31	26	21															
400 S200-097	2.968	263	225	196	174	156	134	107	84	66	53	43	36	30	25	21													
400 S200-097 (50 ksi)	2.968	399	342	299	258	187	140	107	84	66	53	43	36	30	25	21													
400 S200-118	3.516	239	204	178	158	142	129	118	97	77	62	51	42	34	29	24	20												
400 S200-118 (50 ksi)	3.516	364	311	272	241	217	183	125	97	77	62	51	42	34	29	24	20												
400 S250-043	1.481	167	123	93	74	59	49	41	34	30	26	22	20																
400 S250-054	1.855	229	167	128	101	81	67	56	47	40	35	30	25	20															
400 S250-054 (50 ksi)	1.855	307	225	172	135	109	90	72	56	45	36	29	24	20															
400 S250-068	2.349	296	253	196	155	125	103	86	72	57	46	37	31	26	21														
400 S250-068 (50 ksi)	2.349	434	319	243	192	145	120	92	72	57	46	37	31	26	21														
400 S250-097	3.369	262	224	196	174	156	142	128	100	79	64	52	43	35	30	25	21												
400 S250-097 (50 ksi)	3.369	399	341	298	265	223	167	128	100	79	64	52	43	35	30	25	21												
400 S250-118	3.939	239	204	178	168	142	128	117	108	92	74	60	49	41	34	29	24	21											
400 S250-118 (50 ksi)	3.939	363	311	272	241	216	193	148	116	92	74	60	49	41	34	29	24	21											
400 S300-054	2.132	275	202	154	121	98	80	67	57	49	42	36	29	24	20														
400 S300-054 (50 ksi)	2.132	366	268	205	161	130	107	85	66	52	42	34	28	24	20														
400 S300-068	2.659	296	253	200	158	127	105	88	74	64	54	44	36	30	25	21													
400 S300-068 (50 ksi)	2.659	449	354	270	213	172	139	107	83	66	53	44	36	30	25	21													
400 S300-097	3.715	262	224	196	173	156	141	129	115	91	73	60	49	41	34	29	24	21											
400 S300-097 (50 ksi)	3.715	399	341	298	265	238	192	147	115	91	73	60	49	41	34	29	24	21											
400 S300-118	4.466	238	204	178	157	141	128	117	108	100	87	71	58	48	40	34	29	24	21										
400 S300-118 (50 ksi)	4.466	363	310	271	240	216	196	174	136	108	87	71	58	48	40	34	29	24	21										
400 S350-054	2.344	293	214	164	129	104	85	71	60	52	45	39	33	27	23														
400 S350-054 (50 ksi)	2.344	386	283	216	170	137	113	93	73	58	47	38	31	26	22														
400 S350-068	2.926	295	253	212	167	135	111	93	79	67	58	50	41	34	28	24	20												
400 S350-068 (50 ksi)	2.926	449	374	286	225	182	150	118	92	73	59	48	39	33	27	23	20												
400 S350-097	4.095	262	224	195	173	155	141	129	119	103	83	68	56	46	39	33	28	24	20										
400 S350-097 (50 ksi)	4.095	398	341	298	264	237	215	166	130	103	83	68	56	46	39	33	28	24	20										
400 S350-118	4.931	238	203	177	157	141	127	116	107	99	92	81	66	55	46	39	33	28	24	20									
400 S350-118 (50 ksi)	4.931	362	310	271	240	215	195	179	155	123	99	81	66	55	46	39	33	28	24	20									
550 S162-033	1.074	161	118	90	71	57	47	39	33	29	25	22																	
550 S162-043	1.443	271	199	152	120	97	80	67	57	49	42	37	32	27	23														
550 S162-054	1.795	343	252	192	152	122	101	84	72	62	53	47	40	33	28	24	20												
550 S162-054 (50 ksi)	1.795	491	360	276	217	176	145	116	91	72	58	48	40	33	28	24	20												
550 S162-068	2.240	435	319	244	192	155	128	107	91	78	68	59	49	41	34	29	25	21											
550 S162-068 (50 ksi)	2.240	648	475	363	287	232	186	143	112	89	72	59	49	41	34	29	25	21											
550 S162-097	3.165	633	465	355	280	226	186	156	132	114	99	82	67	56	47	40	34	29	25	21									
550 S162-097 (50 ksi)	3.165	938	688	526	415	336	257	198	155	123	100	82	67	56	47	40	34	29	25	21									

Table 9A--Allowable Uniform Loads on S-Member Joists: Deflection of L/180 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L / 180																											
		Joist Span, ft.																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
550 S162-118	3.837	626	536	438	345	279	230	193	164	140	119	97	80	67	56	48	41	35	30	26	23	20							
550 S162-118 (50 ksi)	3.837	950	814	647	510	410	307	235	184	147	119	97	80	67	56	48	41	35	30	26	23	20							
550 S200-033	1.167	164	120	92	72	58	48	40	34	29	25	22																	
550 S200-043	1.568	255	187	143	112	91	75	63	53	46	39	34	30	27	24	22													
550 S200-054	1.940	365	268	204	161	130	107	90	76	65	57	50	44	38	32	27	23	20											
550 S200-054 (50 ksi)	1.940	461	338	258	204	165	136	114	97	82	66	54	45	38	32	27	23	20											
550 S200-068	2.446	489	358	274	216	174	144	120	102	88	76	67	56	47	40	34	29	25	21										
550 S200-068 (50 ksi)	2.446	692	507	388	306	247	204	164	129	103	83	68	56	47	40	34	29	25	21										
550 S200-097	3.487	662	523	400	315	255	210	176	149	128	111	95	78	66	55	47	40	34	30	26	22								
550 S200-097 (50 ksi)	3.487	1005	778	595	469	379	299	230	180	143	116	95	78	66	55	47	40	34	30	26	22								
550 S200-118	4.255	625	535	468	390	315	260	217	185	159	138	114	94	79	66	56	48	41	35	31	27	23	20						
550 S200-118 (50 ksi)	4.255	950	813	711	578	468	359	275	216	172	139	114	94	79	66	56	48	41	35	31	27	23	20						
550 S250-043	1.711	266	195	149	117	95	78	65	55	48	41	36	32	28	25	22	20												
550 S250-054	2.144	353	259	198	156	126	103	87	73	63	55	48	42	37	33	30	27	23											
550 S250-054 (50 ksi)	2.144	490	359	275	217	175	144	121	103	88	75	62	51	43	36	30	26	22											
550 S250-068	2.713	533	391	299	235	190	157	131	111	96	83	73	64	55	46	39	34	29	25	22									
550 S250-068 (50 ksi)	2.713	669	491	375	296	239	197	165	140	120	97	79	66	55	46	39	34	29	25	22									
550 S250-097	3.888	662	567	457	360	291	240	201	171	147	127	111	92	77	65	55	47	41	35	30	26	23	20						
550 S250-097 (50 ksi)	3.888	1005	861	663	523	423	349	270	212	169	136	112	92	77	65	55	47	41	35	30	26	23	20						
550 S250-118	4.678	625	535	468	415	354	292	245	208	179	155	132	110	92	77	66	56	48	41	36	31	27	24	21					
550 S250-118 (50 ksi)	4.678	949	813	711	631	528	417	320	251	200	162	132	110	92	77	66	56	48	41	36	31	27	24	21					
550 S300-054	2.352	374	274	209	165	133	110	92	78	67	58	51	45	39	35	32	28	26	22										
550 S300-054 (50 ksi)	2.352	514	377	288	227	183	151	127	108	92	80	67	55	46	39	33	28	24	21										
550 S300-068	2.979	518	380	290	229	185	152	127	108	93	80	70	62	55	49	44	39	33	29	25	22								
550 S300-068 (50 ksi)	2.979	711	522	399	314	254	210	176	149	128	109	89	74	62	52	44	38	33	28	24	21								
550 S300-097	4.234	661	566	495	390	315	260	218	185	159	138	121	105	88	74	63	54	46	40	35	30	26	23	20					
550 S300-097 (50 ksi)	4.234	1004	850	650	513	414	342	286	241	192	155	127	105	88	74	63	54	46	40	35	30	26	23	20					
550 S300-118	5.100	625	535	467	415	373	325	273	232	199	173	151	125	105	88	75	64	55	48	41	36	31	27	24	21				
550 S300-118 (50 ksi)	5.100	949	813	710	631	562	463	365	286	228	185	151	125	105	88	75	64	55	48	41	36	31	27	24	21				
550 S350-054	2.632	446	327	250	197	159	131	110	93	80	69	60	53	47	42	38	34	30	26	23									
550 S350-054 (50 ksi)	2.632	605	444	339	267	216	178	149	127	109	95	79	65	55	46	39	33	29	25	22									
550 S350-068	3.290	571	419	320	252	204	168	140	119	102	89	78	68	61	54	48	44	44	38	33	28	25	22						
550 S350-068 (50 ksi)	3.290	781	573	438	345	279	230	193	164	141	121	99	82	69	58	49	42	36	31	27	24	21							
550 S350-097	4.614	661	566	495	423	342	282	236	201	172	149	131	115	99	84	71	61	52	45	39	34	30	26	23	20				
550 S350-097 (50 ksi)	4.614	1004	860	670	528	427	352	285	251	215	174	142	118	99	83	71	60	52	45	39	34	30	26	23	20				
550 S350-118	5.564	624	534	467	414	372	338	292	248	213	185	162	142	118	100	85	72	62	54	47	41	36	31	27	24	21			
550 S350-118 (50 ksi)	5.564	948	812	710	630	562	463	388	323	258	209	171	142	118	100	85	72	62	54	47	41	36	31	27	24	21			
600 S162-033	1.133	175	128	98	77	62	53	46	36	31	27	24	21																
600 S162-043	1.519	306	224	171	135	109	90	75	64	55	48	42	37	33	28	24	20												
600 S162-054	1.892	388	285	217	171	138	114	96	81	70	60	53	47	41	35	29	25	22											
600 S162-054 (50 ksi)	1.892	556	408	312	246	199	164	137	112	89	72	59	49	41	35	29	25	22											
600 S162-068	2.361	492	361	276	217	176	145	121	103	88	77	67	59	51	43	36	31	27	23	20									
600 S162-068 (50 ksi)	2.361	732	538	411	324	262	216	176	138	110	89	73	61	51	43	36	31	27	23	20									
600 S162-097	3.338	718	527	402	317	256	211	177	150	129	112	98	84	70	59	50	43	37	32	28	24	21							
600 S162-097 (50 ksi)	3.338	1063	780	596	471	381	314	244	192	153	124	101	84	70	59	50	43	37	32	28	24	21							

Table 9A--Allowable Uniform Loads on S-Member Joist L180.xls



Table 9A--Allowable Uniform Loads on S-Member Joists: Deflection of L/180 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L / 180																											
		Joist Span, ft.																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
600 S162-118	4.048	793	651	498	392	317	261	219	186	160	139	121	100	84	70	60	51	44	38	33	29	25	22						
600 S162-118 (50 ksi)	4.048	1203	961	735	580	469	390	292	229	182	147	121	100	84	70	60	51	44	38	33	29	25	22						
600 S200-033	1.226	177	130	99	78	63	52	43	37	31	27	24	21																
600 S200-043	1.634	287	211	161	127	102	84	71	60	51	45	39	34	30	27	24	22	20											
600 S200-054	2.036	411	302	230	182	147	121	101	86	74	64	56	49	44	39	33	29	25	21										
600 S200-054 (50 ksi)	2.036	521	382	292	230	186	154	129	109	94	82	67	56	46	39	33	29	25	21										
600 S200-068	2.567	551	404	309	243	197	162	136	115	99	86	75	66	58	49	42	36	31	27	23	20								
600 S200-068 (50 ksi)	2.567	780	572	438	345	279	230	193	158	126	102	84	69	58	49	42	36	31	27	23	20								
600 S200-097	3.660	805	591	451	356	288	237	199	169	145	126	110	97	81	69	58	50	43	37	32	28	25	21						
600 S200-097 (50 ksi)	3.660	1197	878	672	530	428	353	283	222	177	143	117	97	81	69	58	50	43	37	32	28	25	21						
600 S200-118	4.466	793	679	560	441	356	294	246	209	180	156	137	117	98	82	70	60	51	44	39	34	29	26	23	20				
600 S200-118 (50 ksi)	4.466	1203	1030	829	654	529	437	340	267	213	172	141	117	98	82	70	60	51	44	39	34	29	26	23	20				
600 S250-043	1.788	300	220	168	133	107	88	74	63	54	47	41	36	32	28	25	23	21											
600 S250-054	2.240	397	291	222	175	142	117	98	83	71	62	54	48	42	38	34	30	27	25	22									
600 S250-054 (50 ksi)	2.240	553	406	310	245	198	163	137	116	100	87	75	63	52	44	38	32	28	24	21									
600 S250-068	2.834	598	439	335	264	214	176	147	125	108	93	82	72	64	57	49	42	36	31	27	24	21							
600 S250-068 (50 ksi)	2.834	754	553	423	333	270	222	186	158	136	118	98	81	68	57	49	42	36	31	27	23	21							
600 S250-097	4.061	833	673	514	405	328	270	226	192	165	143	125	111	95	80	68	59	50	44	38	33	29	25	22	20				
600 S250-097 (50 ksi)	4.061	1265	976	746	589	476	393	329	260	207	168	138	114	95	80	68	59	50	44	38	33	29	25	22	20				
600 S250-118	4.889	792	678	593	494	399	329	276	234	201	175	153	135	113	96	81	70	60	52	45	39	34	30	27	23	21			
600 S250-118 (50 ksi)	4.889	1202	1030	901	736	596	491	394	309	246	199	163	135	113	96	81	70	60	52	45	39	34	30	27	23	21			
600 S300-054	2.448	421	308	236	186	150	123	103	88	75	65	57	50	45	40	36	32	29	26	24	21								
600 S300-054 (50 ksi)	2.448	580	426	325	256	207	171	143	122	105	91	79	68	57	48	41	35	30	26	22	20								
600 S300-068	3.101	581	426	326	257	207	171	143	121	104	90	79	70	62	55	49	45	40	36	31	27	24	21						
600 S300-068 (50 ksi)	3.101	800	587	449	354	286	236	198	168	144	125	109	91	76	64	54	47	40	35	30	26	23	20						
600 S300-097	4.407	833	713	555	437	353	291	244	207	178	155	135	119	106	91	78	67	57	50	43	38	33	29	26	23	20			
600 S300-097 (50 ksi)	4.407	1264	953	729	575	465	383	321	273	235	190	156	129	108	91	78	67	57	50	43	38	33	29	26	23	20			
600 S300-118	5.311	792	678	592	526	443	366	306	260	224	194	170	150	129	109	93	79	68	59	51	45	39	34	30	27	24			
600 S300-118 (50 ksi)	5.311	1202	1030	900	780	630	520	436	351	280	227	186	154	129	109	93	79	68	59	51	45	39	34	30	27	24			
600 S350-054	2.729	500	367	280	221	178	147	123	104	90	78	68	60	53	47	43	38	35	31	28	25	22							
600 S350-054 (50 ksi)	2.729	646	499	382	301	243	201	168	143	123	107	93	80	67	56	48	41	35	31	27	23	20							
600 S350-068	3.411	640	469	358	282	228	188	157	134	115	100	87	77	68	61	54	49	44	40	35	31	27	24	21					
600 S350-068 (50 ksi)	3.411	878	644	492	388	314	259	217	184	158	138	121	101	84	71	60	52	45	39	34	29	26	23	20					
600 S350-097	4.787	833	713	601	474	383	316	264	225	193	167	147	129	115	103	88	75	65	56	49	43	37	33	29	26	23			
600 S350-097 (50 ksi)	4.787	1264	983	751	592	479	395	331	281	242	210	174	144	121	102	87	74	64	55	48	42	37	32	29	25	22			
600 S350-118	5.775	791	677	592	526	472	390	327	278	239	207	181	160	142	123	104	89	77	67	58	51	44	39	34	30	27			
600 S350-118 (50 ksi)	5.775	1202	1029	900	776	628	518	434	369	316	256	210	174	145	123	104	89	77	67	58	51	44	39	34	30	27			
800 S162-043	1.826	349	267	204	161	130	107	90	76	65	57	50	44	39	35	31	28	25	23	21									
800 S162-054	2.276	481	352	269	212	172	141	118	101	86	75	66	58	51	46	41	37	34	31	28	26	23	22	20					
800 S162-054 (50 ksi)	2.276	666	489	373	295	238	196	165	140	120	105	92	81	72	64	58	51	44	38	33	29	26	23	20					
800 S162-068	2.846	631	463	354	279	225	186	156	132	114	99	86	76	68	60	54	49	44	40	37	34	31	28	25	23	20			
800 S162-068 (50 ksi)	2.846	913	670	512	404	327	270	226	192	165	144	126	111	99	88	75	64	55	48	42	37	32	29	25	23	20			
800 S162-097	4.030	1094	803	614	484	391	323	270	230	198	172	150	133	118	105	95	86	77	67	59	51	45	40	35	31	28			
800 S162-097 (50 ksi)	4.030	1559	1144	875	691	559	461	387	329	283	246	207	172	145	122	104	90	77	67	59	51	45	40	35	31	28			

**Table 9A--Allowable Uniform Joists: Deflection of L/180 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>**

Member Identification	Wt. lbs/ft	Deflection Limit = L / 180																											
		Joist Span, ft																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
800 S162-118	4.893	1359	997	762	601	486	401	336	286	246	213	187	165	147	131	118	106	93	81	70	62	54	48	42	38	34			
800 S162-118 (50 ksi)	4.893	2003	1471	1125	888	718	593	497	423	364	303	249	207	173	147	125	107	93	81	70	62	54	48	42	38	34			
800 S200-043	1.941	348	298	233	183	148	122	102	87	75	65	57	50	44	40	36	32	29	26	24	22	20	20	20	21				
800 S200-054	2.421	615	451	345	272	220	181	152	129	111	96	84	74	66	59	53	48	44	40	36	33	29	26	23	21				
800 S200-054 (50 ksi)	2.421	695	556	425	335	271	224	188	160	137	119	104	92	82	73	66	58	50	44	38	33	29	26	23	21				
800 S200-068	3.052	823	604	461	364	294	243	203	173	149	129	113	100	89	79	71	64	58	53	48	42	37	33	29	26	23			
800 S200-068 (50 ksi)	3.052	1119	859	657	518	419	346	290	247	212	185	162	140	117	99	85	73	63	55	48	42	37	33	29	26	23			
800 S200-097	4.351	1210	888	679	535	433	357	299	254	219	190	166	147	131	117	105	95	86	77	67	59	52	46	41	36	32			
800 S200-097 (50 ksi)	4.351	1797	1319	1009	796	644	532	446	379	327	284	237	197	165	140	119	102	88	77	67	59	52	46	41	36	32			
800 S200-118	5.311	1507	1106	845	667	539	445	373	317	272	237	207	183	163	145	131	118	107	93	81	71	63	55	49	44	39			
800 S200-118 (50 ksi)	5.311	2230	1637	1252	988	799	660	554	471	405	349	286	238	199	169	144	124	107	93	81	71	63	55	49	44	39			
800 S250-043	2.094	348	298	234	184	149	123	103	87	75	65	57	50	44	40	36	32	29	26	24	22	20	20	20	21				
800 S250-054	2.625	592	434	332	262	211	174	146	124	107	93	81	71	63	57	51	46	42	38	35	32	29	27	25	23	21			
800 S250-054 (50 ksi)	2.625	694	568	435	343	277	229	192	163	140	122	107	94	84	75	67	61	55	49	43	38	33	29	26	23	21			
800 S250-068	3.319	884	649	496	391	316	261	219	186	160	139	122	107	95	85	77	69	63	57	52	48	43	38	33	30	27			
800 S250-068 (50 ksi)	3.319	1119	826	631	498	403	332	279	237	204	177	155	137	122	109	97	83	72	63	55	48	43	38	33	30	26			
800 S250-097	4.752	1359	997	762	601	486	401	336	286	246	213	187	165	147	131	118	107	97	88	78	68	60	53	47	42	38			
800 S250-097 (50 ksi)	4.752	1970	1446	1106	873	706	593	489	416	358	311	273	228	191	162	138	119	103	89	78	68	60	53	47	42	38			
800 S250-118	5.733	1651	1220	933	736	595	491	411	350	301	261	229	202	180	161	144	131	118	106	93	81	72	63	56	50	45			
800 S250-118 (50 ksi)	5.733	2366	1814	1388	1095	886	731	614	522	449	391	327	272	228	193	165	141	122	106	93	81	72	63	56	50	45			
800 S300-054	2.833	626	459	351	276	223	184	154	131	113	98	86	75	67	60	54	48	44	40	36	33	31	28	26	24	22			
800 S300-054 (50 ksi)	2.833	694	578	442	349	282	233	195	166	142	124	108	96	85	76	68	62	56	51	46	41	36	32	28	25	22			
800 S300-068	3.585	855	627	479	378	306	252	211	179	154	134	117	103	92	82	74	67	60	55	50	46	42	39	36	33	30			
800 S300-068 (50 ksi)	3.585	1119	875	669	528	427	352	295	251	216	188	165	145	129	116	104	93	80	70	61	54	47	42	37	33	29			
800 S300-097	5.098	1451	1064	814	642	519	428	359	305	262	228	200	176	157	140	126	114	103	94	86	77	68	60	53	47	42			
800 S300-097 (50 ksi)	5.098	1906	1399	1070	844	683	564	473	402	346	301	264	233	207	182	155	133	115	100	88	77	68	60	53	47	42			
800 S300-118	6.156	1651	1340	1024	808	653	539	452	384	330	287	251	222	197	177	159	143	130	119	105	92	81	72	64	57	51			
800 S300-118 (50 ksi)	6.156	2366	1903	1456	1149	930	767	644	547	471	410	359	305	256	217	185	159	138	120	105	92	81	72	64	57	51			
800 S350-054	3.114	694	539	412	325	263	216	181	154	132	115	101	89	79	70	63	57	52	47	43	39	36	33	31	28	26			
800 S350-054 (50 ksi)	3.114	694	539	412	325	263	216	181	154	132	115	101	89	79	70	63	57	52	47	43	39	36	33	31	28	26			
800 S350-068	3.896	937	687	525	414	335	276	231	196	169	147	128	113	101	90	81	73	66	60	54	48	42	37	33	29	26			
800 S350-068 (50 ksi)	3.896	1118	954	729	575	465	384	322	274	236	205	179	158	141	126	113	102	88	77	67	59	52	46	41	36	32			
800 S350-097	5.479	1560	1145	875	690	568	460	386	328	282	245	215	190	168	151	135	122	111	101	92	85	76	67	60	53	47			
800 S350-097 (50 ksi)	5.479	1966	1443	1104	871	704	581	487	415	357	310	272	240	214	191	171	147	127	111	101	92	85	76	67	60	53	47		
800 S350-118	6.620	1650	1414	1084	865	691	570	478	406	349	304	266	235	209	187	168	152	138	125	115	103	91	80	71	64	57			
800 S350-118 (50 ksi)	6.620	2365	1875	1434	1131	915	755	634	539	464	403	353	312	278	243	207	178	154	134	117	103	91	80	71	64	57			
1000 S162-054	2.661	551	453	346	273	220	182	152	129	111	97	84	75	66	59	53	48	43	40	36	33	30	28	26	24	22			
1000 S162-054 (50 ksi)	2.661	551	472	412	366	303	250	210	178	153	133	117	103	92	82	74	67	60	55	50	46	43	39	35	31	28			
1000 S162-068	3.331	824	605	462	364	295	243	204	173	149	129	113	100	89	79	71	64	58	53	48	44	41	38	35	32	30			
1000 S162-068 (50 ksi)	3.331	1112	863	660	521	421	348	292	248	213	185	163	144	128	114	103	93	84	77	70	64	56	50	45	40	36			
1000 S162-097	4.721	1337	981	750	592	478	395	331	281	242	210	184	162	144	129	116	105	95	87	79	73	67	62	57	53	49			
1000 S162-097 (50 ksi)	4.721	1835	1347	1030	813	658	543	455	387	333	290	254	225	200	179	161	145	132	120	105	92	81	72	64	57	51			
1000 S162-118	5.737	1906	1399	1070	844	683	563	472	402	345	300	263	232	207	185	166	150	136	124	114	104	96	87	77	69	62			
1000 S162-118 (50 ksi)	5.737	2492	1829	1399	1104	893	737	619	526	453	394	346	305	272	243	219	191	165	144	126	111	98	87	77	69	62			
1000 S200-054	2.806	551	471	373	294	237	196	164	139	120	104	91	80	71	64	57	52	47	43	39	36	33	30	28	26	24			





Table 9A--Allowable Uniform Loads on S-Member Joists: Deflection of L/180 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/180																											
		Joist Span, ft																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
1400 S250-068 (50 ksi)	4.773	783	671	586	521	468	425	389	359	333	301	264	233	208	186	167	151	137	125	115	105	97	90	83	77	72			
1400 S250-097	6.827	2306	1801	1377	1087	879	725	608	517	445	387	339	300	267	238	215	194	176	161	147	135	124	115	106	98	92			
1400 S250-097 (50 ksi)	6.827	2306	1975	1728	1535	1251	1033	867	738	635	552	485	429	382	342	308	278	253	231	212	194	179	166	154	143	133			
1400 S250-118	8.267	3100	2275	1740	1373	1111	916	769	654	563	489	429	379	337	302	271	245	223	203	186	171	157	145	134	125	116			
1400 S250-118 (50 ksi)	8.267	3753	3216	2511	1983	1604	1324	1112	946	814	708	622	560	489	438	395	357	325	297	272	250	230	213	197	183	171			
1400 S300-054*	3.987	388	332	290	257	231	210	192	177	164	153	143	126	112	100	90	81	74	67	61	56	52	48	44	41	38			
1400 S300-054* (50ksi)	3.987	388	332	290	257	231	210	192	177	164	153	143	126	112	100	90	81	74	67	61	56	52	48	44	41	38			
1400 S300-068	5.040	783	670	586	520	468	425	389	358	332	289	254	224	199	178	160	145	132	120	110	101	93	86	79	74	68			
1400 S300-068 (50 ksi)	5.040	783	670	586	520	468	425	389	359	333	310	278	246	219	196	176	159	145	132	121	111	102	94	87	81	76			
1400 S300-097	7.173	2305	1960	1499	1183	957	790	662	563	485	421	369	326	290	260	234	211	192	175	160	147	135	125	116	107	100			
1400 S300-097 (50 ksi)	7.173	2305	1975	1727	1535	1309	1081	907	772	664	578	507	448	399	357	322	291	265	242	221	203	188	173	161	149	139			
1400 S300-118	8.689	3411	2503	1915	1511	1222	1009	846	720	619	538	472	417	371	332	299	270	246	224	205	188	173	160	148	138	128			
1400 S300-118 (50 ksi)	8.689	3753	3216	2664	2103	1702	1405	1179	1003	864	751	659	583	519	465	419	379	345	315	288	265	244	226	209	195	181			
1400 S350-054*	4.268	388	332	290	257	231	210	192	177	164	153	143	126	112	100	90	81	74	67	61	56	52	48	44	41	38			
1400 S350-054* (50ksi)	4.268	388	332	290	257	231	210	192	177	164	153	143	126	112	100	90	81	74	67	61	56	52	48	44	41	38			
1400 S350-068	5.350	783	670	586	520	467	424	389	358	332	289	254	224	199	178	160	145	132	120	110	101	93	86	79	74	68			
1400 S350-068 (50 ksi)	5.350	783	670	586	520	467	424	389	358	332	310	290	273	248	222	200	181	164	150	137	126	116	107	99	92	86			
1400 S350-097	7.563	2305	1975	1727	1488	1204	994	834	709	611	531	466	412	366	328	295	267	243	221	203	186	172	159	147	136	127			
1400 S350-097 (50 ksi)	7.563	2305	1975	1727	1534	1380	1254	1055	898	773	673	590	522	465	416	375	340	309	282	258	237	219	202	188	174	163			
1400 S350-118	9.154	3753	3059	2340	1847	1494	1233	1035	881	758	659	578	511	455	407	367	332	301	275	252	231	213	197	183	170	158			
1400 S350-118 (50 ksi)	9.154	3753	3215	2812	2449	1982	1636	1373	1169	1007	876	769	680	605	542	489	442	402	367	336	309	285	264	245	228	212			
1600 S162-097	6.796	2007	1666	1274	1005	813	671	563	478	412	358	313	277	246	220	198	179	163	148	136	124	114	106	98	91	84			
1600 S162-097 (50 ksi)	6.796	2007	1719	1504	1336	1142	943	791	673	579	504	442	391	348	311	280	254	231	210	193	177	163	151	140	130	121			
1600 S162-118	8.271	2957	2171	1660	1310	1059	874	733	623	536	466	409	361	321	287	259	234	212	194	177	163	150	138	128	119	110			
1600 S162-118 (50 ksi)	8.271	3687	3066	2345	1851	1498	1237	1038	883	760	661	580	513	457	409	368	333	303	276	253	233	215	198	184	171	159			
1600 S200-068*	4.991	682	584	511	453	407	370	339	312	283	246	216	190	169	151	136	123	112	102	93	85	79	72	67	62	58			
1600 S200-068* (50ksi)	4.991	682	584	511	453	407	370	339	312	290	270	253	238	224	206	186	168	153	139	127	117	108	100	92	86	80			
1600 S200-097	7.118	2007	1719	1422	1122	907	749	628	534	459	399	350	309	275	246	221	200	182	166	152	139	128	118	110	102	94			
1600 S200-097 (50 ksi)	7.118	2007	1719	1503	1336	1201	1061	890	757	652	567	498	440	392	351	316	286	260	237	217	200	184	170	158	147	136			
1600 S200-118	8.689	3296	2419	1850	1460	1181	974	817	695	598	520	456	403	358	321	289	261	237	216	198	182	167	154	143	133	123			
1600 S200-118 (50 ksi)	8.689	3687	3159	2632	2078	1682	1388	1165	991	854	743	652	576	513	460	414	375	341	311	285	262	241	223	207	192	179			

For S1: 1 foot=305mm, 1 lb/ft=14.6 N/m.

Notes:

1. Allowable Uniform Loads are determined by solving the bending, deflection and shear equations for the least value.
2. Dead weight of the member has been included in determining the Allowable Uniform Loads.
3. Allowable Uniform Loads are based on the compression flange continuous braced by sheathing.
4. End reactions must not exceed, without web stiffeners, the values shown in the Allowable Web Crippling Tables.
5. Members marked with \* require web stiffeners; the (h/t) web height to thickness ratios exceed 200 and are less than 260. See Web Stiffener Details.
6. Values are based on members with standard punchouts. If punchouts occur at reactions or concentrated loads web stiffeners are required.
7. Minimum Allowable Uniform Loads are limited to 20 plf.

Table 9B--Allowable Uniform Loads on S-Member Joists: Deflection of L/240 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L / 240																												
		Joist Span, ft																												
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
250 S162-033	0.721	54	39	28	20																									
250 S162-043	0.983	87	57	38	26																									
250 S162-054	1.218	81	69	46	32	23																								
250 S162-054 (50 ksi)	1.218	111	69	46	32	23																								
250 S162-068	1.513	72	61	53	39	28	21																							
250 S162-068 (50 ksi)	1.513	109	85	56	39	28	21																							
250 S162-097	2.128	54	46	40	35	32	28	21																						
250 S162-097 (50 ksi)	2.128	83	71	62	52	38	28	21																						
250 S200-033	0.877	69	51	35	24																									
250 S200-043	1.136	87	67	45	31	22																								
250 S200-054	1.410	80	69	55	38	27	20																							
250 S200-054 (50 ksi)	1.410	123	83	55	38	27	20																							
250 S200-068	1.750	71	61	53	47	34	25																							
250 S200-068 (50 ksi)	1.750	109	93	67	47	34	25																							
250 S200-097	2.418	54	46	40	35	31	28	25																						
250 S200-097 (50 ksi)	2.418	83	71	62	54	45	33	25																						
250 S200-118	2.883	42	36	31	27	24	22	20																						
250 S200-118 (50 ksi)	2.883	65	56	48	43	38	34	29	22																					
250 S250-043	1.289	87	74	53	37	27	20																							
250 S250-054	1.603	80	69	60	46	33	24																							
250 S250-054 (50 ksi)	1.603	122	98	65	45	33	24																							
250 S250-068	1.993	71	61	53	47	40	30	22																						
250 S250-068 (50 ksi)	1.993	109	93	80	56	40	30	22																						
250 S250-097	2.764	54	46	39	35	31	28	25	23																					
250 S250-097 (50 ksi)	2.764	83	70	61	54	48	40	30	23																					
250 S250-118	3.305	42	36	30	27	24	21																							
250 S250-118 (50 ksi)	3.305	65	55	48	42	38	34	31	27	21																				
250 S300-054	1.843	80	68	60	53	38	28	21																						
250 S300-054 (50 ksi)	1.843	122	104	75	52	37	28	21																						
250 S300-068	2.296	71	60	52	46	42	35	26	20																					
250 S300-068 (50 ksi)	2.296	109	93	81	65	47	35	26	20																					
250 S300-097	3.196	53	45	39	34	31	28	25	23	21																				
250 S300-097 (50 ksi)	3.196	82	70	61	54	48	43	36	27	21																				
250 S300-118	3.833	41	35	30	26	23	21																							
250 S300-118 (50 ksi)	3.833	65	55	47	42	37	33	30	28	25																				
250 S350-054	2.055	80	68	59	53	44	32	24																						
250 S350-054 (50 ksi)	2.055	122	104	83	58	41	31	23																						
250 S350-068	2.562	70	60	52	46	41	37	30	23																					
250 S350-068 (50 ksi)	2.562	108	93	81	71	53	39	30	23																					
250 S350-097	3.577	53	45	39	34	30	27	25	22	21																				
250 S350-097 (50 ksi)	3.577	82	70	60	53	48	43	39	31	24																				
250 S350-118	4.297	41	34	29	26	23	20																							
250 S350-118 (50 ksi)	4.297	64	54	47	41	37	33	30	27	25	22																			
350 S162-033	0.839	81	59	45	36	29	23																							
350 S162-043	1.136	132	97	74	58	42	31	24																						

Table 9B--Allowable Uniform Loads on S-Member Joists: Deflection of L/240 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L / 240																												
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
350 S162-054	1.410	184	135	102	71	51	38	29	23																					
350 S162-054 (50 ksi)	1.410	240	152	102	71	51	38	29	23																					
350 S162-068	1.755	196	167	125	87	63	47	36	28	22																				
350 S162-068 (50 ksi)	1.755	297	187	125	87	63	47	36	28	22																				
350 S162-097	2.474	168	144	125	111	86	64	49	38	30	24																			
350 S162-097 (50 ksi)	2.474	256	219	170	119	86	64	49	38	30	24																			
350 S200-033	0.932	85	62	48	37	30	25	20																						
350 S200-043	1.251	136	100	76	60	48	36	27	21																					
350 S200-054	1.555	199	146	111	82	59	44	34	26	21																				
350 S200-054 (50 ksi)	1.555	245	176	118	82	59	44	34	26	21																				
350 S200-068	1.961	195	167	146	102	74	55	42	33	26	20																			
350 S200-068 (50 ksi)	1.961	297	219	146	102	74	55	42	33	26	20																			
350 S200-097	2.795	168	143	125	111	99	75	58	45	35	28	23																		
350 S200-097 (50 ksi)	2.795	256	219	191	140	101	75	58	45	35	28	23																		
350 S200-118	3.305	148	127	110	98	88	79	67	52	41	33	26	21																	
350 S200-118 (50 ksi)	3.305	226	194	169	150	118	88	67	52	41	33	26	21																	
350 S250-043	1.443	160	117	89	70	57	43	33	26	20																				
350 S250-054	1.795	205	150	115	90	72	53	41	32	25	20																			
350 S250-054 (50 ksi)	1.795	277	203	141	98	71	53	40	31	25	20																			
350 S250-068	2.235	195	167	146	122	88	66	50	39	31	25	20																		
350 S250-068 (50 ksi)	2.235	297	254	174	122	88	66	50	39	31	25	20																		
350 S250-097	3.110	167	143	125	110	99	89	68	53	42	33	27	22																	
350 S250-097 (50 ksi)	3.110	255	218	191	165	120	89	68	53	42	33	27	22																	
350 S250-118	3.727	148	126	110	97	87	79	72	62	49	39	32	26	21																
350 S250-118 (50 ksi)	3.727	226	193	169	149	134	105	80	62	49	39	32	26	21																
350 S300-054	2.036	209	171	130	102	83	62	47	37	29	23																			
350 S300-054 (50 ksi)	2.036	312	228	161	112	81	61	46	36	28	23																			
350 S300-068	2.538	195	167	145	129	103	77	58	45	36	29	23																		
350 S300-068 (50 ksi)	2.538	296	254	203	142	103	76	58	45	36	29	23																		
350 S300-097	3.542	167	142	124	110	99	89	80	62	49	39	32	26	21																
350 S300-097 (50 ksi)	3.542	255	218	190	169	140	105	80	62	49	39	32	26	21																
350 S300-118	4.255	147	126	109	97	87	78	72	66	58	46	37	30	25	21															
350 S300-118 (50 ksi)	4.255	225	193	168	149	134	121	94	73	58	46	37	30	25	21															
350 S350-054	2.248	209	179	138	109	88	70	53	42	33	26	21																		
350 S350-054 (50 ksi)	2.248	313	241	177	124	90	67	51	40	31	25	20																		
350 S350-068	2.805	195	166	145	129	113	87	66	52	41	33	26	21																	
350 S350-068 (50 ksi)	2.805	296	253	221	157	114	85	65	50	40	32	26	21																	
350 S350-097	3.923	166	142	124	110	98	89	81	71	56	45	36	29	24	20															
350 S350-097 (50 ksi)	3.923	254	218	190	168	151	119	90	70	56	44	36	29	24	20															
350 S350-118	4.720	147	125	109	96	86	78	71	65	60	53	43	35	29	24	20														
350 S350-118 (50 ksi)	4.720	225	192	168	148	133	121	108	84	66	53	43	35	29	24	20														
362 S162-033	0.854	84	62	47	37	30	25																							
362 S162-043	1.155	138	101	77	61	45	34	26	20																					
362 S162-054	1.435	189	138	106	77	56	42	32	25																					
362 S162-054 (50 ksi)	1.435	250	165	110	77	56	42	32	25																					

Table 9B--Allowable Uniform Loads on S-Member Joists: Deflection of L/240 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L / 240																												
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
362 S162-068	1.785	219	178	135	95	68	51	39	30	24																				
362 S162-068 (50 ksi)	1.785	324	203	135	95	68	51	39	30	24																				
362 S162-097	2.517	190	162	142	126	93	70	53	41	32	26	21																		
362 S162-097 (50 ksi)	2.517	289	247	185	129	93	70	53	41	32	26	21																		
362 S200-033	0.947	89	65	50	39	31	26	21																						
362 S200-043	1.270	142	104	80	63	50	39	30	23	18																				
362 S200-054	1.579	208	152	116	89	65	48	37	29	23																				
362 S200-054 (50 ksi)	1.579	256	188	128	89	65	48	37	29	23																				
362 S200-068	1.992	219	187	156	111	80	60	46	35	28	22																			
362 S200-068 (50 ksi)	1.992	333	237	158	111	80	60	46	35	28	22																			
362 S200-097	2.839	189	162	141	125	110	82	63	49	38	31	25	20																	
362 S200-097 (50 ksi)	2.839	289	247	216	152	110	82	63	49	38	31	25	20																	
362 S200-118	3.368	169	145	126	112	100	91	73	57	45	36	29	23																	
362 S200-118 (50 ksi)	3.368	258	221	193	171	128	96	73	57	45	36	29	23																	
362 S250-043	1.462	166	122	93	73	59	47	36	28	22																				
362 S250-054	1.819	215	157	120	94	76	58	44	34	27	22																			
362 S250-054 (50 ksi)	1.819	290	212	152	107	77	58	44	34	27	22																			
362 S250-068	2.265	218	187	163	132	95	71	54	42	33	27	22																		
362 S250-068 (50 ksi)	2.265	332	283	189	132	95	71	54	42	33	27	22																		
362 S250-097	3.153	189	162	141	125	112	97	74	57	45	36	29	24	20																
362 S250-097 (50 ksi)	3.153	289	247	216	179	130	97	74	57	45	36	29	24	20																
362 S250-118	3.780	169	144	126	111	100	90	83	68	53	43	34	28	23																
362 S250-118 (50 ksi)	3.780	258	220	192	170	153	114	87	68	53	43	34	28	23																
362 S300-054	2.060	233	179	136	107	86	67	51	40	32	25																			
362 S300-054 (50 ksi)	2.060	325	238	174	121	88	66	50	39	31	25	20																		
362 S300-068	2.569	218	187	163	139	111	83	63	49	39	31	25	21																	
362 S300-068 (50 ksi)	2.569	332	284	219	153	111	83	63	49	39	31	25	21																	
362 S300-097	3.585	189	161	141	125	112	101	87	67	53	43	34	28	23																
362 S300-097 (50 ksi)	3.585	288	246	215	191	152	113	87	67	53	43	34	28	23																
362 S300-118	4.308	168	144	125	111	99	90	82	75	63	50	41	33	27	23															
362 S300-118 (50 ksi)	4.308	257	220	192	170	152	134	102	80	63	50	41	33	27	23															
362 S350-054	2.272	233	190	145	114	92	76	58	45	36	29	23																		
362 S350-054 (50 ksi)	2.272	336	251	192	134	97	72	55	43	34	27	22																		
362 S350-068	2.835	218	186	163	144	119	94	72	56	44	35	29	23																	
362 S350-068 (50 ksi)	2.835	332	284	243	170	123	92	70	54	43	34	28	23																	
362 S350-097	3.966	188	161	140	124	111	101	92	77	61	49	39	32	26	22															
362 S350-097 (50 ksi)	3.966	288	246	215	190	171	129	98	76	60	48	39	32	26	22															
362 S350-118	4.773	168	143	125	110	99	89	82	75	69	57	47	38	31	26	21														
362 S350-118 (50 ksi)	4.773	257	219	191	169	152	138	117	91	72	57	47	38	31	26	21														
400 S162-033	0.898	95	69	53	42	34	28	23																						
400 S162-043	1.213	156	114	87	68	55	43	33	25	20																				
400 S162-054	1.507	195	143	109	86	69	53	40	31	25	20																			
400 S162-054 (50 ksi)	1.507	283	207	139	97	70	53	40	31	25	20																			
400 S162-068	1.876	279	204	156	120	87	65	49	38	30	24	20																		
400 S162-068 (50 ksi)	1.876	366	256	171	120	87	65	49	38	30	24	20																		

















Table 9C--Allowable Uniform Loads on S-Member Joists: Deflection of L/360 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/ 360																											
		Joist Span, ft																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
250 S162-033	0.721	45	28																										
250 S162-043	0.983	60	38	25																									
250 S162-054	1.218	74	46	30	21																								
250 S162-054 (50 ksi)	1.218	74	46	30	21																								
250 S162-068	1.513	72	56	37	26																								
250 S162-068 (50 ksi)	1.513	90	56	37	26																								
250 S162-097	2.128	54	46	40	34	24																							
250 S162-097 (50 ksi)	2.128	83	71	50	34	24																							
250 S200-033	0.877	55	34	23																									
250 S200-043	1.136	71	45	29	20																								
250 S200-054	1.410	80	55	36	25																								
250 S200-054 (50 ksi)	1.410	88	55	36	25																								
250 S200-068	1.750	71	61	44	30	22																							
250 S200-068 (50 ksi)	1.750	107	67	44	30	22																							
250 S200-097	2.418	54	46	40	35	29	21																						
250 S200-097 (50 ksi)	2.418	83	71	59	41	29	21																						
250 S200-118	2.883	42	36	31	27	24	22																						
250 S200-118 (50 ksi)	2.883	65	56	48	43	34	25																						
250 S250-043	1.289	85	53	35	24																								
250 S250-054	1.603	80	65	43	30	21																							
250 S250-054 (50 ksi)	1.603	104	65	43	30	21																							
250 S250-068	1.993	71	61	53	37	26																							
250 S250-068 (50 ksi)	1.993	109	80	53	37	26																							
250 S250-097	2.764	54	46	39	35	31	26																						
250 S250-097 (50 ksi)	2.764	83	70	61	49	35	26																						
250 S250-118	3.305	42	36	30	27	24	21																						
250 S250-118 (50 ksi)	3.305	65	55	48	42	38	30	22																					
250 S300-054	1.843	80	68	51	35	25																							
250 S300-054 (50 ksi)	1.843	120	75	49	34	24																							
250 S300-068	2.296	71	60	52	43	31	22																						
250 S300-068 (50 ksi)	2.296	109	93	62	43	31	22																						
250 S300-097	3.196	53	45	39	34	31	28	23																					
250 S300-097 (50 ksi)	3.196	82	70	61	54	41	30	23																					
250 S300-118	3.833	41	35	30	26	23	21																						
250 S300-118 (50 ksi)	3.833	65	55	47	42	37	33	26	20																				
250 S350-054	2.055	80	68	57	40	28	21																						
250 S350-054 (50 ksi)	2.055	122	83	55	38	27	20																						
250 S350-068	2.562	70	60	52	46	35	26	19																					
250 S350-068 (50 ksi)	2.562	108	93	70	48	34	25	19																					
250 S350-097	3.577	53	45	39	34	30	27	25	20																				
250 S350-097 (50 ksi)	3.577	82	70	60	53	47	35	26	20																				
250 S350-118	4.297	41	34	29	26	23	20																						
250 S350-118 (50 ksi)	4.297	64	54	47	41	37	33	30	23																				
350 S162-033	0.839	81	59	41	28	20																							
350 S162-043	1.136	131	82	55	38	27	20																						



Table 9C--Allowable Uniform Loads on S-Member Joists: Deflection of L/360 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/ 360																												
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
350 S162-054	1.410	161	101	67	47	34	25																							
350 S162-054 (50 ksi)	1.410	161	101	67	47	34	25																							
350 S162-068	1.755	196	124	83	57	41	31	23																						
350 S162-068 (50 ksi)	1.755	196	124	83	57	41	31	23																						
350 S162-097	2.474	168	144	112	78	56	42	32	24																					
350 S162-097 (50 ksi)	2.474	256	169	112	78	56	42	32	24																					
350 S200-033	0.932	85	62	46	32	23																								
350 S200-043	1.251	136	95	63	44	32	24	18																						
350 S200-054	1.555	187	117	78	54	39	29	22																						
350 S200-054 (50 ksi)	1.555	187	117	78	54	39	29	22																						
350 S200-068	1.961	195	145	97	67	49	36	27	21																					
350 S200-068 (50 ksi)	1.961	232	145	97	67	49	36	27	21																					
350 S200-097	2.795	168	143	125	93	67	49	37	29	23																				
350 S200-097 (50 ksi)	2.795	256	200	133	93	67	49	37	29	23																				
350 S200-118	3.305	148	127	110	98	78	57	43	34	26	21																			
350 S200-118 (50 ksi)	3.305	226	194	155	108	78	57	43	34	26	21																			
350 S250-043	1.443	160	114	76	53	38	28	21																						
350 S250-054	1.795	205	141	94	65	47	35	26	20																					
350 S250-054 (50 ksi)	1.795	223	140	93	65	47	35	26	20																					
350 S250-068	2.235	195	167	115	80	58	43	33	25	20																				
350 S250-068 (50 ksi)	2.235	276	173	115	80	58	43	33	25	20																				
350 S250-097	3.110	167	143	125	109	79	58	44	34	27	21																			
350 S250-097 (50 ksi)	3.110	255	218	157	109	79	58	44	34	27	21																			
350 S250-118	3.727	148	126	110	97	87	69	52	40	31	25	20																		
350 S250-118 (50 ksi)	3.727	226	193	169	128	93	69	52	40	31	25	20																		
350 S300-054	2.036	209	164	109	76	55	41	31	24																					
350 S300-054 (50 ksi)	2.036	255	160	106	74	53	40	30	23																					
350 S300-068	2.538	195	167	135	94	68	50	38	29	23																				
350 S300-068 (50 ksi)	2.538	296	202	134	94	67	50	38	29	23																				
350 S300-097	3.542	167	142	124	110	92	69	52	40	31	25	20																		
350 S300-097 (50 ksi)	3.542	255	218	184	128	92	69	52	40	31	25	20																		
350 S300-118	4.255	147	126	109	97	87	78	61	47	37	29	23																		
350 S300-118 (50 ksi)	4.255	225	193	168	149	109	81	61	47	37	29	23																		
350 S350-054	2.248	209	179	123	86	62	46	35	27	21																				
350 S350-054 (50 ksi)	2.248	281	176	117	82	59	44	33	26	20																				
350 S350-068	2.805	195	166	145	106	77	57	43	33	26	21																			
350 S350-068 (50 ksi)	2.805	296	223	149	104	75	56	42	33	25	20																			
350 S350-097	3.923	166	142	124	110	98	78	59	46	36	28	23																		
350 S350-097 (50 ksi)	3.923	254	218	190	145	105	78	59	46	36	28	23																		
350 S350-118	4.720	147	125	109	96	86	78	70	54	42	34	27	22																	
350 S350-118 (50 ksi)	4.720	225	192	168	148	125	92	70	54	42	34	27	22																	
362 S162-033	0.854	84	62	44	31	22																								
362 S162-043	1.155	138	89	59	41	30	22																							
362 S162-054	1.435	175	110	73	51	37	27	21																						
362 S162-054 (50 ksi)	1.435	175	110	73	51	37	27	21																						

Table 9C--Allowable Uniform Loads on S-Member Joists: Deflection of L/360 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/ 360																												
		Joist Span, ft																												
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
362 S162-068	1.785	215	135	90	62	45	33	25	20																					
362 S162-068 (50 ksi)	1.785	215	135	90	62	45	33	25	20																					
362 S162-097	2.517	190	162	122	85	61	46	34	27	21																				
362 S162-097 (50 ksi)	2.517	289	184	122	85	61	46	34	27	21																				
362 S200-033	0.947	89	65	50	35	25																								
362 S200-043	1.270	142	103	69	48	34	26																							
362 S200-054	1.579	202	127	84	59	42	32	24																						
362 S200-054 (50 ksi)	1.579	202	127	84	59	42	32	24																						
362 S200-068	1.992	219	158	105	73	53	39	30	23																					
362 S200-068 (50 ksi)	1.992	251	158	105	73	53	39	30	23																					
362 S200-097	2.839	189	162	141	101	73	54	41	31	25	20																			
362 S200-097 (50 ksi)	2.839	289	217	144	101	73	54	41	31	25	20																			
362 S200-118	3.368	169	145	126	112	84	63	47	37	29	23																			
362 S200-118 (50 ksi)	3.368	258	221	168	117	84	63	47	37	29	23																			
362 S250-043	1.462	166	122	82	57	41	31	23																						
362 S250-054	1.819	215	152	102	71	51	38	29	22																					
362 S250-054 (50 ksi)	1.819	242	152	101	70	51	38	29	22																					
362 S250-068	2.265	218	187	125	87	63	47	35	27	21																				
362 S250-068 (50 ksi)	2.265	299	188	125	87	63	47	35	27	21																				
362 S250-097	3.153	189	162	141	118	86	63	48	37	29	23																			
362 S250-097 (50 ksi)	3.153	289	247	170	118	86	63	48	37	29	23																			
362 S250-118	3.780	169	144	126	111	100	75	57	44	34	27	22																		
362 S250-118 (50 ksi)	3.780	258	220	192	140	101	75	57	44	34	27	22																		
362 S300-054	2.060	233	177	118	82	60	44	34	26	20																				
362 S300-054 (50 ksi)	2.060	276	173	115	80	58	43	33	25	20																				
362 S300-068	2.569	218	187	146	102	73	55	41	32	25	20																			
362 S300-068 (50 ksi)	2.569	332	218	145	101	73	54	41	32	25	20																			
362 S300-097	3.585	189	161	141	125	100	74	57	44	34	27	22																		
362 S300-097 (50 ksi)	3.585	288	246	199	139	100	74	57	44	34	27	22																		
362 S300-118	4.308	168	144	125	111	99	88	67	52	40	32	26	21																	
362 S300-118 (50 ksi)	4.308	257	220	192	164	119	88	67	52	40	32	26	21																	
362 S350-054	2.272	233	190	133	93	67	50	38	29	23																				
362 S350-054 (50 ksi)	2.272	304	191	127	89	64	47	36	28	22																				
362 S350-068	2.835	218	186	163	115	83	62	47	36	29	23																			
362 S350-068 (50 ksi)	2.835	332	241	161	112	81	60	46	35	28	22																			
362 S350-097	3.966	188	161	140	124	111	85	64	50	39	31	25	20																	
362 S350-097 (50 ksi)	3.966	288	246	215	157	114	84	64	50	39	31	25	20																	
362 S350-118	4.773	168	143	125	110	99	89	76	59	46	37	29	24																	
362 S350-118 (50 ksi)	4.773	257	219	191	169	135	100	76	59	46	37	29	24																	
400 S162-033	0.898	95	69	53	39	28	21																							
400 S162-043	1.213	156	112	75	52	38	28	21																						
400 S162-054	1.507	195	138	92	64	46	35	26	20																					
400 S162-054 (50 ksi)	1.507	221	138	92	64	46	35	26	20																					
400 S162-068	1.876	271	170	113	79	57	42	32	25	20																				
400 S162-068 (50 ksi)	1.876	271	170	113	79	57	42	32	25	20																				

Table 9C--Allowable Uniform Loads on S-Member Joists: Deflection of L/360 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/ 360																												
		Joist Span, ft																												
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
400 S162-097	2.647	263	225	155	108	78	58	44	34	27	21																			
400 S162-097 (50 ksi)	2.647	372	233	155	108	78	58	44	34	27	21																			
400 S200-033	0.991	100	73	56	44	32	24																							
400 S200-043	1.328	160	117	86	60	43	32	25																						
400 S200-054	1.651	217	159	106	74	54	40	30	23																					
400 S200-054 (50 ksi)	1.651	254	159	106	74	54	40	30	23																					
400 S200-068	2.082	296	198	132	92	67	50	38	29	23																				
400 S200-068 (50 ksi)	2.082	316	198	132	92	67	50	38	29	23																				
400 S200-097	2.968	263	225	183	127	92	68	52	40	32	25	20																		
400 S200-097 (50 ksi)	2.968	399	274	183	127	92	68	52	40	32	25	20																		
400 S200-118	3.516	239	204	178	148	107	80	61	47	37	29	24																		
400 S200-118 (50 ksi)	3.516	364	311	213	148	107	80	61	47	37	29	24																		
400 S250-043	1.481	167	123	93	70	50	38	29	22																					
400 S250-054	1.855	229	167	125	88	63	47	36	28	22																				
400 S250-054 (50 ksi)	1.855	294	184	123	86	62	46	35	27	21																				
400 S250-068	2.349	296	235	157	109	79	59	45	35	27	22																			
400 S250-068 (50 ksi)	2.349	374	235	157	109	79	59	45	35	27	22																			
400 S250-097	3.369	262	224	196	152	110	82	62	48	38	30	24	20																	
400 S250-097 (50 ksi)	3.369	399	326	217	152	110	82	62	48	38	30	24	20																	
400 S250-118	3.939	239	204	178	168	127	95	72	56	44	35	28	23																	
400 S250-118 (50 ksi)	3.939	363	311	252	176	127	95	72	56	44	35	28	23																	
400 S300-054	2.132	275	202	148	103	75	56	42	33	26	21																			
400 S300-054 (50 ksi)	2.132	345	216	144	101	73	54	41	32	25	20																			
400 S300-068	2.659	296	253	183	127	92	69	52	41	32	25	21																		
400 S300-068 (50 ksi)	2.659	435	273	182	127	92	68	52	40	32	25	20																		
400 S300-097	3.715	262	224	196	173	126	94	71	55	44	35	28	23																	
400 S300-097 (50 ksi)	3.715	399	341	250	175	126	94	71	55	44	35	28	23																	
400 S300-118	4.466	238	204	178	157	141	111	85	66	52	41	33	27	22																
400 S300-118 (50 ksi)	4.466	363	310	271	207	149	111	85	66	52	41	33	27	22																
400 S350-054	2.344	293	214	164	116	84	62	48	37	29	23																			
400 S350-054 (50 ksi)	2.344	380	238	159	111	80	60	45	35	28	22																			
400 S350-068	2.926	295	253	207	144	104	78	59	46	36	29	23																		
400 S350-068 (50 ksi)	2.926	449	301	201	140	101	75	57	44	35	28	23																		
400 S350-097	4.095	262	224	195	173	143	107	81	63	50	40	32	26	21																
400 S350-097 (50 ksi)	4.095	398	341	283	197	143	106	81	63	49	39	32	26	21																
400 S350-118	4.931	238	203	177	157	141	127	96	75	59	47	38	31	25	21															
400 S350-118 (50 ksi)	4.931	362	310	271	235	170	127	96	75	59	47	38	31	25	21															
550 S162-033	1.074	161	118	90	71	57	44	34	26	21																				
550 S162-043	1.443	271	199	152	111	81	60	46	36	29	23																			
550 S162-054	1.795	343	252	192	138	100	75	57	44	35	28	23																		
550 S162-054 (50 ksi)	1.795	469	294	197	138	100	75	57	44	35	28	23																		
550 S162-068	2.240	435	319	243	170	123	92	70	55	43	35	28	23																	
550 S162-068 (50 ksi)	2.240	578	363	243	170	123	92	70	55	43	35	28	23																	
550 S162-097	3.165	633	465	336	235	170	127	97	76	60	48	39	32	27	22															
550 S162-097 (50 ksi)	3.165	800	502	336	235	170	127	97	76	60	48	39	32	27	22															

Table 9C--Allowable Uniform Loads on S-Member Joists: Deflection of L/360 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/ 360																											
		Joist Span, ft																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
550 S162-118	3.837	626	536	400	280	203	151	116	90	71	57	47	38	32	26	22													
550 S162-118 (50 ksi)	3.837	950	599	400	280	203	151	116	90	71	57	47	38	32	26	22													
550 S200-033	1.167	164	120	92	72	58	48	38	29	23																			
550 S200-043	1.568	255	187	143	112	91	69	52	41	32	26	21																	
550 S200-054	1.940	365	268	204	156	113	85	65	51	40	32	26	22																
550 S200-054 (50 ksi)	1.940	461	334	223	156	113	85	65	51	40	32	26	22																
550 S200-068	2.446	489	358	274	195	142	106	81	63	50	40	33	27	22															
550 S200-068 (50 ksi)	2.446	665	418	279	195	142	106	81	63	50	40	33	27	22															
550 S200-097	3.487	662	523	390	273	198	148	113	88	70	56	46	37	31	26	22													
550 S200-097 (50 ksi)	3.487	929	583	390	273	198	148	113	88	70	56	46	37	31	26	22													
550 S200-118	4.255	625	535	468	327	237	177	136	106	84	67	55	45	37	31	26	22												
550 S200-118 (50 ksi)	4.255	950	700	468	327	237	177	136	106	84	67	55	45	37	31	26	22												
550 S250-043	1.711	266	195	149	117	95	78	60	47	37	30	24	20																
550 S250-054	2.144	353	259	198	156	126	99	76	59	47	38	31	25	21															
550 S250-054 (50 ksi)	2.144	490	359	253	177	128	96	73	57	45	37	30	24	20															
550 S250-068	2.713	533	391	299	229	166	124	95	74	59	47	38	32	26	22														
550 S250-068 (50 ksi)	2.713	669	488	326	228	166	124	95	74	59	47	38	32	26	22														
550 S250-097	3.888	662	567	457	321	233	174	133	104	82	66	54	44	37	31	26	22												
550 S250-097 (50 ksi)	3.888	1005	686	458	321	233	174	133	104	82	66	54	44	37	31	26	22												
550 S250-118	4.678	625	535	468	381	276	206	158	123	98	79	64	52	43	36	30	26	22											
550 S250-118 (50 ksi)	4.678	949	813	544	381	276	206	158	123	98	79	64	52	43	36	30	26	22											
550 S300-054	2.352	374	274	209	165	133	110	85	66	53	42	36	28	24	20														
550 S300-054 (50 ksi)	2.352	514	377	274	192	139	104	79	62	49	40	32	26	22															
550 S300-068	2.979	518	380	290	229	185	142	109	85	67	54	44	36	30	25	21													
550 S300-068 (50 ksi)	2.979	711	522	366	256	186	139	106	83	66	53	43	36	29	25	21													
550 S300-097	4.234	661	566	495	365	265	198	151	118	94	75	61	51	42	35	29	25	21											
550 S300-097 (50 ksi)	4.234	1004	780	521	365	265	198	151	118	94	75	61	51	42	35	29	25	21											
550 S300-118	5.100	625	535	467	415	315	235	180	141	112	90	73	60	50	42	35	29	25	21										
550 S300-118 (50 ksi)	5.100	949	813	620	434	315	235	180	141	112	90	73	60	50	42	35	29	25	21										
550 S350-054	2.632	446	327	250	197	169	129	99	77	61	49	40	33	27	23														
550 S350-054 (50 ksi)	2.632	605	444	324	226	164	123	94	73	58	47	38	31	26	22														
550 S350-068	3.290	571	419	320	252	204	162	124	97	77	62	50	41	34	29	24	20												
550 S350-068 (50 ksi)	3.290	781	573	407	285	207	154	118	92	73	59	48	39	33	27	23													
550 S350-097	4.614	661	566	495	411	299	223	171	133	106	85	69	57	47	40	33	28	24	20										
550 S350-097 (50 ksi)	4.614	1004	860	583	408	296	221	169	132	105	85	69	57	47	39	33	28	24	20										
550 S350-118	5.564	624	534	467	414	356	266	204	159	126	102	83	68	56	47	40	33	28	24	21									
550 S350-118 (50 ksi)	5.564	948	812	700	490	356	266	204	159	126	102	83	68	56	47	40	33	28	24	21									
600 S162-033	1.133	175	128	98	77	62	51	42	33	26	21																		
600 S162-043	1.519	306	224	171	135	100	75	57	45	35	28	23																	
600 S162-054	1.892	388	285	217	170	123	92	70	55	44	35	29	24	20															
600 S162-054 (50 ksi)	1.892	556	363	242	170	123	92	70	55	44	35	29	24	20															
600 S162-068	2.361	492	361	276	210	152	114	87	68	54	43	35	29	24	20														
600 S162-068 (50 ksi)	2.361	713	448	299	210	152	114	87	68	54	43	35	29	24	20														
600 S162-097	3.338	718	527	402	290	211	158	121	94	75	60	49	40	33	28	23	20												
600 S162-097 (50 ksi)	3.338	988	621	415	290	211	158	121	94	75	60	49	40	33	28	23	20												

Table 9C--Allowable Uniform Loads on S-Member Joists: Deflection of L/360 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/ 360																											
		Joist Span, ft																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
600 S162-118	4.048	793	651	495	347	252	188	144	112	89	72	58	48	40	33	28	24	20											
600 S162-118 (50 ksi)	4.048	1179	741	495	347	252	188	144	112	89	72	58	48	40	33	28	24	20											
600 S200-033	1.226	177	130	99	78	63	52	43	37	29	23																		
600 S200-043	1.634	287	211	161	127	102	84	65	50	40	32	26	22																
600 S200-054	2.036	411	302	230	182	139	104	80	62	49	40	32	27	22															
600 S200-054 (50 ksi)	2.036	521	382	274	192	139	104	80	62	49	40	32	27	22															
600 S200-068	2.567	551	404	309	240	174	130	100	78	62	50	41	33	28	23	20													
600 S200-068 (50 ksi)	2.567	780	513	343	240	174	130	100	78	62	50	41	33	28	23	20													
600 S200-097	3.660	805	591	451	336	244	182	140	109	87	70	57	47	39	32	27	23	20											
600 S200-097 (50 ksi)	3.660	1143	718	480	336	244	182	140	109	87	70	57	47	39	32	27	23	20											
600 S200-118	4.466	793	679	560	404	293	219	168	131	104	84	68	56	47	39	33	28	23	20										
600 S200-118 (50 ksi)	4.466	1203	864	577	404	293	219	168	131	104	84	68	56	47	39	33	28	23	20										
600 S250-043	1.788	300	220	168	133	107	88	73	57	45	37	30	25	20															
600 S250-054	2.240	397	291	222	175	142	117	93	72	58	46	38	31	26	22														
600 S250-054 (50 ksi)	2.240	553	406	308	216	157	117	90	70	56	45	37	30	25	21														
600 S250-068	2.834	598	439	335	264	203	152	116	91	72	58	47	39	32	27	23													
600 S250-068 (50 ksi)	2.834	754	553	399	279	203	152	116	91	72	58	47	39	32	27	23													
600 S250-097	4.061	833	673	514	394	286	214	164	128	102	82	67	55	46	38	32	27	23	20										
600 S250-097 (50 ksi)	4.061	1265	841	562	394	286	214	164	128	102	82	67	55	46	38	32	27	23	20										
600 S250-118	4.889	792	678	593	468	340	254	195	152	121	97	79	65	54	45	38	32	27	23	20									
600 S250-118 (50 ksi)	4.889	1202	1000	668	468	340	254	195	152	121	97	79	65	54	45	38	32	27	23	20									
600 S300-054	2.448	421	308	236	186	150	123	103	81	65	52	42	35	29	24	21													
600 S300-054 (50 ksi)	2.448	580	426	325	234	170	127	97	76	60	49	40	33	27	23														
600 S300-068	3.101	581	426	326	257	207	171	133	104	83	67	54	45	37	31	26	22												
600 S300-068 (50 ksi)	3.101	800	587	447	313	227	170	130	102	81	65	53	44	36	30	26	22												
600 S300-097	4.407	833	713	555	437	324	243	186	145	115	93	76	62	52	44	37	31	26	23										
600 S300-097 (50 ksi)	4.407	1264	953	637	446	324	243	186	145	115	93	76	62	52	44	37	31	26	23										
600 S300-118	5.311	792	678	592	526	386	289	221	173	137	111	90	74	62	52	44	37	31	27	23	20								
600 S300-118 (50 ksi)	5.311	1202	1030	759	532	386	289	221	173	137	111	90	74	62	52	44	37	31	27	23	20								
600 S350-054	2.729	500	367	280	221	178	147	121	94	75	60	49	41	34	28	24	20												
600 S350-054 (50 ksi)	2.729	646	499	382	276	200	150	115	90	71	57	47	39	32	27	23													
600 S350-068	3.411	640	469	358	282	228	188	151	118	94	76	62	51	42	36	30	25	22											
600 S350-068 (50 ksi)	3.411	878	644	492	347	252	188	144	113	90	72	59	49	40	34	29	24	21											
600 S350-097	4.787	833	713	601	474	365	273	209	163	130	105	85	70	59	49	41	35	30	26	22									
600 S350-097 (50 ksi)	4.787	1264	983	711	498	362	270	207	162	129	104	85	70	58	49	41	35	30	25	22									
600 S350-118	5.775	791	677	592	526	435	326	249	195	155	125	102	84	70	59	49	42	36	30	26	22								
600 S350-118 (50 ksi)	5.775	1202	1029	855	599	435	326	249	195	155	125	102	84	70	59	49	42	36	30	26	22								
800 S162-043	1.826	349	267	204	161	130	107	90	76	65	57	46	38	32	27	23													
800 S162-054	2.276	481	352	269	212	172	141	118	101	86	72	59	48	40	34	29	25	21											
800 S162-054 (50 ksi)	2.276	666	489	373	295	238	182	140	109	87	70	58	48	40	33	28	24	21											
800 S162-068	2.846	631	463	354	279	225	186	156	132	110	89	73	60	50	42	36	31	26	23	20									
800 S162-068 (50 ksi)	2.846	913	670	512	404	307	230	177	138	110	89	73	60	50	42	36	31	26	23	20									
800 S162-097	4.030	1094	803	614	484	391	321	247	193	154	124	102	84	70	59	50	43	37	32	27	24	21							
800 S162-097 (50 ksi)	4.030	1559	1144	842	590	429	321	247	193	154	124	102	84	70	59	50	43	37	32	27	24	21							









Table 9C--Allowable Uniform Loads on S-Member Joists: Deflection of L/360 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/360																												
		Joist Span, ft																												
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
1400 S250-068 (50 ksi)	4.773	783	671	586	521	468	425	389	359	333	301	264	233	208	186	167	151	133	116	101	89	79	70	62	55	50				
1400 S250-097	6.827	2306	1801	1377	1087	879	725	608	517	445	387	339	300	267	238	215	194	176	161	147	135	119	106	94	84	75				
1400 S250-097 (50 ksi)	6.827	2306	1975	1728	1535	1251	1033	867	738	635	552	485	429	365	309	264	227	197	171	150	132	116	103	92	82	73				
1400 S250-118	8.267	3100	2275	1740	1373	1111	916	769	654	563	489	429	379	337	302	271	245	223	203	184	162	143	127	113	101	90				
1400 S250-118 (50 ksi)	8.267	3753	3216	2511	1983	1604	1324	1112	946	814	708	622	532	447	379	324	278	241	210	184	162	143	127	113	101	90				
1400 S300-054*	3.987	388	332	290	257	231	210	192	177	164	153	143	126	112	100	90	81	74	67	61	56	52	48	44	41	38				
1400 S300-054* (50ksi)	3.987	388	332	290	257	231	210	192	177	164	153	143	126	112	100	90	81	74	67	61	56	52	48	44	41	38				
1400 S300-068	5.040	783	670	586	520	468	425	389	358	332	289	254	224	199	178	160	145	132	120	110	92	84	72	66	61	57				
1400 S300-068 (50 ksi)	5.040	783	670	586	520	468	425	389	359	333	310	278	246	219	196	176	159	145	127	111	98	86	77	68	61	55				
1400 S300-097	7.173	2305	1960	1499	1183	957	790	662	563	485	421	369	326	290	260	234	211	192	175	160	147	131	116	103	92	83				
1400 S300-097 (50 ksi)	7.173	2305	1975	1727	1535	1309	1081	907	772	664	578	507	448	399	341	291	251	217	189	166	146	129	114	102	91	81				
1400 S300-118	8.689	3411	2503	1915	1511	1222	1009	846	720	619	538	472	417	371	332	299	270	246	224	203	178	158	140	125	111	100				
1400 S300-118 (50 ksi)	8.689	3753	3216	2664	2103	1702	1405	1179	1003	864	751	659	583	492	417	356	307	266	231	203	178	157	140	124	111	99				
1400 S350-054*	4.268	388	332	290	257	231	210	192	177	164	153	143	126	112	100	90	81	74	67	61	56	52	48	44	41	38				
1400 S350-054* (50ksi)	4.268	388	332	290	257	231	210	192	177	164	153	143	126	112	100	90	81	74	67	61	56	52	48	44	41	38				
1400 S350-068	5.350	783	670	586	520	467	424	389	358	332	289	254	224	199	178	160	145	132	120	110	92	84	72	66	61	57				
1400 S350-068 (50 ksi)	5.350	783	670	586	520	467	424	389	358	332	310	290	273	248	222	200	181	164	150	131	116	102	91	81	72	65				
1400 S350-097	7.563	2305	1975	1727	1488	1204	994	834	709	611	531	466	412	366	328	295	267	243	212	185	163	144	128	114	102	91				
1400 S350-097 (50 ksi)	7.563	2305	1975	1727	1534	1380	1254	1055	898	773	673	590	522	444	377	322	277	240	209	183	161	142	126	112	100	90				
1400 S350-118	9.154	3753	3059	2340	1847	1494	1233	1035	881	758	659	578	511	455	407	367	332	292	254	223	196	173	154	137	122	110				
1400 S350-118 (50 ksi)	9.154	3753	3215	2812	2449	1982	1636	1373	1169	1007	876	769	643	541	458	392	337	292	254	223	196	173	154	137	122	110				
1600 S162-097	6.796	2007	1666	1274	1005	813	671	563	478	412	358	313	277	246	220	198	179	163	148	136	124	114	106	98	91	84				
1600 S162-097 (50 ksi)	6.796	2007	1719	1504	1336	1142	943	791	673	579	504	442	391	348	311	280	252	218	190	166	146	129	115	102	91	82				
1600 S162-118	8.271	2957	2171	1660	1310	1059	874	733	623	536	466	409	361	321	287	259	234	212	194	177	163	150	138	128	117	105				
1600 S162-118 (50 ksi)	8.271	3687	3066	2345	1851	1498	1237	1038	883	760	661	580	513	457	409	365	314	272	237	208	183	162	144	128	114	102				
1600 S200-068*	4.991	682	584	511	453	407	370	339	312	283	246	216	190	169	151	136	123	112	102	93	85	79	72	67	62	58				
1600 S200-068* (50ksi)	4.991	682	584	511	453	407	370	339	312	290	270	253	238	224	206	186	168	153	139	122	107	95	84	75	67	60				
1600 S200-097	7.118	2007	1719	1422	1122	907	749	628	534	459	399	350	309	275	246	221	200	182	166	152	139	128	118	110	102	94				
1600 S200-097 (50 ksi)	7.118	2007	1719	1503	1336	1201	1061	890	757	652	567	498	440	392	351	316	278	241	210	184	162	143	127	113	101	91				
1600 S200-118	8.689	3296	2419	1850	1460	1181	974	817	695	598	520	456	403	358	321	289	261	237	216	198	182	167	154	143	130	116				
1600 S200-118 (50 ksi)	8.689	3687	3159	2632	2078	1682	1388	1165	991	854	743	652	576	513	460	405	349	302	264	231	203	180	160	142	127	114				

For S1: 1 foot=305mm, 1 lb/ft=14.6 N/m.

Notes:

- Allowable Uniform Loads are determined by solving the bending, deflection and shear equations for the least value.
- Dead weight of the member has been included in determining the Allowable Uniform Loads.
- Allowable Uniform Loads are based on the compression flange continuous braced by sheathing.
- End reactions must not exceed, without web stiffeners, the values shown in the Allowable Web Crippling Tables.
- Members marked with \* require web stiffeners: the (h/t) web height to thickness ratios exceed 200 and are less than 260. See Web Stiffener Details.
- Values are based on members with standard punchouts. If punchouts occur at reactions or concentrated loads web stiffeners are required.
- Minimum Allowable Uniform Loads are limited to 20 plf.

Table 9D--Allowable Uniform Loads on S-Member Joists: Deflection of L/480 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L / 480																											
		Joist Span, ft																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
250 S162-033	0.721	34	21																										
250 S162-043	0.983	45	28																										
250 S162-054	1.218	55	34	22																									
250 S162-054 (50 ksi)	1.218	55	34	22																									
250 S162-068	1.513	67	42	27																									
250 S162-068 (50 ksi)	1.513	67	42	27																									
250 S162-097	2.128	54	46	37	25																								
250 S162-097 (50 ksi)	2.128	83	56	37	25																								
250 S200-033	0.877	41	26																										
250 S200-043	1.136	53	33	22																									
250 S200-054	1.410	65	41	27																									
250 S200-054 (50 ksi)	1.410	65	41	27																									
250 S200-068	1.750	71	50	33	22																								
250 S200-068 (50 ksi)	1.750	80	50	33	22																								
250 S200-097	2.418	54	46	40	30	21																							
250 S200-097 (50 ksi)	2.418	83	66	44	30	21																							
250 S200-118	2.883	42	36	31	27	24																							
250 S200-118 (50 ksi)	2.883	65	56	48	35	25																							
250 S250-043	1.289	63	39	26																									
250 S250-054	1.603	78	49	32	22																								
250 S250-054 (50 ksi)	1.603	78	48	32	22																								
250 S250-068	1.993	71	59	39	27																								
250 S250-068 (50 ksi)	1.993	96	59	39	27																								
250 S250-097	2.764	54	46	39	35	26																							
250 S250-097 (50 ksi)	2.764	83	70	53	36	26																							
250 S250-118	3.305	42	36	30	27	24	21																						
250 S250-118 (50 ksi)	3.305	65	55	48	42	30	22																						
250 S300-054	1.843	80	57	37	26																								
250 S300-054 (50 ksi)	1.843	89	56	37	25																								
250 S300-068	2.296	71	60	46	32	22																							
250 S300-068 (50 ksi)	2.296	109	70	46	32	22																							
250 S300-097	3.196	53	45	39	34	30	22																						
250 S300-097 (50 ksi)	3.196	82	70	61	43	30	22																						
250 S300-118	3.833	41	35	30	26	23	21																						
250 S300-118 (50 ksi)	3.833	65	55	47	42	35	26																						
250 S350-054	2.055	80	64	43	29	21																							
250 S350-054 (50 ksi)	2.055	99	61	40	28	20																							
250 S350-068	2.562	70	60	52	36	26																							
250 S350-068 (50 ksi)	2.562	108	78	52	36	25																							
250 S350-097	3.577	53	45	39	34	30	25																						
250 S350-097 (50 ksi)	3.577	82	70	60	49	35	25																						
250 S350-118	4.297	41	34	29	26	23	20																						
250 S350-118 (50 ksi)	4.297	64	54	47	41	37	30	22																					
350 S162-033	0.839	73	46	30	21																								
350 S162-043	1.136	98	61	41	28	20																							

Table 9D--Allowable Uniform Loads on S-Member Joists: Deflection of L/480 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L / 480																											
		Joist Span, ft																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
350 S162-054	1.410	121	75	50	35	25																							
350 S162-054 (50 ksi)	1.410	121	75	50	35	25																							
350 S162-068	1.755	148	93	61	43	31	23																						
350 S162-068 (50 ksi)	1.755	148	93	61	43	31	23																						
350 S162-097	2.474	168	126	84	58	42	31	23																					
350 S162-097 (50 ksi)	2.474	202	126	84	58	42	31	23																					
350 S200-033	0.932	83	52	35	24																								
350 S200-043	1.251	113	71	47	33	24																							
350 S200-054	1.555	140	87	58	40	29	21																						
350 S200-054 (50 ksi)	1.555	140	87	58	40	29	21																						
350 S200-068	1.961	173	108	72	50	36	26	20																					
350 S200-068 (50 ksi)	1.961	173	108	72	50	36	26	20																					
350 S200-097	2.795	168	143	99	69	49	36	27	21																				
350 S200-097 (50 ksi)	2.795	238	149	99	69	49	36	27	21																				
350 S200-118	3.305	148	127	110	80	57	42	32	24																				
350 S200-118 (50 ksi)	3.305	226	174	115	80	57	42	32	24																				
350 S250-043	1.443	136	85	57	39	28	21																						
350 S250-054	1.795	168	105	70	48	35	26	19																					
350 S250-054 (50 ksi)	1.795	167	105	69	48	35	26	19																					
350 S250-068	2.235	195	129	86	60	43	32	24																					
350 S250-068 (50 ksi)	2.235	207	129	86	60	43	32	24																					
350 S250-097	3.110	167	143	117	81	58	43	32	25																				
350 S250-097 (50 ksi)	3.110	255	176	117	81	58	43	32	25																				
350 S250-118	3.727	148	126	110	95	69	51	38	29	23																			
350 S250-118 (50 ksi)	3.727	226	193	137	95	69	51	38	29	23																			
350 S300-054	2.036	196	122	81	57	41	30	23																					
350 S300-054 (50 ksi)	2.036	191	119	79	55	40	29	22																					
350 S300-068	2.538	195	151	100	70	50	37	28	21																				
350 S300-068 (50 ksi)	2.538	241	151	100	70	50	37	28	21																				
350 S300-097	3.542	167	142	124	95	68	51	38	29	23																			
350 S300-097 (50 ksi)	3.542	255	206	137	95	68	51	38	29	23																			
350 S300-118	4.255	147	126	109	97	81	60	45	34	27	21																		
350 S300-118 (50 ksi)	4.255	225	193	162	112	81	60	45	34	27	21																		
350 S350-054	2.248	209	138	92	64	46	34	26	20																				
350 S350-054 (50 ksi)	2.248	210	132	87	61	44	32	24																					
350 S350-068	2.805	195	166	114	79	57	42	32	24																				
350 S350-068 (50 ksi)	2.805	267	167	111	77	55	41	31	24																				
350 S350-097	3.923	166	142	124	108	78	58	43	33	26	20																		
350 S350-097 (50 ksi)	3.923	254	218	155	108	78	57	43	33	26	20																		
350 S350-118	4.720	147	125	109	96	86	68	51	39	31	24																		
350 S350-118 (50 ksi)	4.720	225	192	168	128	92	68	51	39	31	24																		
362 S162-033	0.854	79	50	33	23																								
362 S162-043	1.155	107	67	44	31	22																							
362 S162-054	1.435	131	82	54	38	27	20																						
362 S162-054 (50 ksi)	1.435	131	82	54	38	27	20																						

Table 9D--Allowable Uniform Loads on S-Member Joists: Deflection of L/480 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L / 480																											
		Joist Span, ft																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
362 S162-068	1.785	161	101	67	46	33	25																						
362 S162-068 (50 ksi)	1.785	161	101	67	46	33	25																						
362 S162-097	2.517	190	137	91	63	45	34	25																					
362 S162-097 (50 ksi)	2.517	220	137	91	63	45	34	25																					
362 S200-033	0.947	89	57	38	26																								
362 S200-043	1.270	123	77	51	36	26																							
362 S200-054	1.579	151	95	63	44	31	23																						
362 S200-054 (50 ksi)	1.579	151	95	63	44	31	23																						
362 S200-068	1.992	188	118	78	54	39	29	22																					
362 S200-068 (50 ksi)	1.992	188	118	78	54	39	29	22																					
362 S200-097	2.839	189	162	108	75	54	40	30	23																				
362 S200-097 (50 ksi)	2.839	259	162	108	75	54	40	30	23																				
362 S200-118	3.368	169	145	125	87	63	46	35	27	21																			
362 S200-118 (50 ksi)	3.368	258	189	125	87	63	46	35	27	21																			
362 S250-043	1.462	147	92	61	43	31	23																						
362 S250-054	1.819	182	114	76	53	38	28	21																					
362 S250-054 (50 ksi)	1.819	181	113	75	52	38	28	21																					
362 S250-068	2.265	218	140	93	65	47	34	26	20																				
362 S250-068 (50 ksi)	2.265	224	140	93	65	47	34	26	20																				
362 S250-097	3.153	189	162	127	88	63	47	35	27	21																			
362 S250-097 (50 ksi)	3.153	289	191	127	88	63	47	35	27	21																			
362 S250-118	3.780	169	144	126	104	75	55	42	32	25																			
362 S250-118 (50 ksi)	3.780	258	220	149	104	75	55	42	32	25																			
362 S300-054	2.060	212	133	88	61	44	33	25																					
362 S300-054 (50 ksi)	2.060	206	129	86	60	43	32	24																					
362 S300-068	2.569	218	164	109	76	54	40	30	23																				
362 S300-068 (50 ksi)	2.569	261	163	108	75	54	40	30	23																				
362 S300-097	3.585	189	161	141	103	74	55	42	32	25																			
362 S300-097 (50 ksi)	3.585	288	224	149	103	74	55	42	32	25																			
362 S300-118	4.308	168	144	125	111	88	65	49	38	29	23																		
362 S300-118 (50 ksi)	4.308	257	220	176	122	88	65	49	38	29	23																		
362 S350-054	2.272	233	149	99	69	50	37	28	21																				
362 S350-054 (50 ksi)	2.272	228	143	95	66	47	35	26	20																				
362 S350-068	2.835	218	186	123	86	62	46	35	27	21																			
362 S350-068 (50 ksi)	2.835	288	180	120	83	60	44	34	26	20																			
362 S350-097	3.966	188	161	140	118	85	63	47	36	28	22																		
362 S350-097 (50 ksi)	3.966	288	246	168	117	84	62	47	36	28	22																		
362 S350-118	4.773	168	143	125	110	99	74	56	43	34	26	21																	
362 S350-118 (50 ksi)	4.773	257	219	191	139	100	74	56	43	34	26	21																	
400 S162-033	0.898	95	63	42	29	21																							
400 S162-043	1.213	134	84	56	39	28	21																						
400 S162-054	1.507	165	103	69	48	34	26																						
400 S162-054 (50 ksi)	1.507	165	103	69	48	34	26																						
400 S162-068	1.876	203	127	85	59	42	31	24																					
400 S162-068 (50 ksi)	1.876	203	127	85	59	42	31	24																					

Table 9D--Allowable Uniform Loads on S-Member Joists: Deflection of L/480 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L / 480																												
		Joist Span, ft																												
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
400 S162-097	2.647	263	174	116	81	58	43	32	25																					
400 S162-097 (50 ksi)	2.647	278	174	116	81	58	43	32	25																					
400 S200-033	0.991	100	71	47	33	24																								
400 S200-043	1.328	154	97	64	45	32	24																							
400 S200-054	1.651	190	119	79	55	40	29	22																						
400 S200-054 (50 ksi)	1.651	190	119	79	55	40	29	22																						
400 S200-068	2.082	236	148	99	69	49	37	28	21																					
400 S200-068 (50 ksi)	2.082	236	148	99	69	49	37	28	21																					
400 S200-097	2.968	263	205	136	95	68	51	38	29	23																				
400 S200-097 (50 ksi)	2.968	327	205	136	95	68	51	38	29	23																				
400 S200-118	3.516	239	204	159	110	80	59	45	34	27	21																			
400 S200-118 (50 ksi)	3.516	364	239	159	110	80	59	45	34	27	21																			
400 S250-043	1.481	167	112	75	52	37	28	21																						
400 S250-054	1.855	224	141	94	65	47	35	26	20																					
400 S250-054 (50 ksi)	1.855	220	138	92	64	46	34	26	20																					
400 S250-068	2.349	280	175	117	81	59	43	33	25	20																				
400 S250-068 (50 ksi)	2.349	280	175	117	81	59	43	33	25	20																				
400 S250-097	3.369	262	224	162	113	81	60	46	35	28	22																			
400 S250-097 (50 ksi)	3.369	389	244	162	113	81	60	46	35	28	22																			
400 S250-118	3.939	239	204	178	131	94	70	53	41	32	25	20																		
400 S250-118 (50 ksi)	3.939	363	283	188	131	94	70	53	41	32	25	20																		
400 S300-054	2.132	264	166	110	77	55	41	31	24																					
400 S300-054 (50 ksi)	2.132	258	162	108	75	54	40	30	23																					
400 S300-068	2.659	296	205	136	95	69	51	39	30	23																				
400 S300-068 (50 ksi)	2.659	326	204	136	95	68	51	38	30	23																				
400 S300-097	3.715	262	224	187	130	94	70	53	41	32	25	20																		
400 S300-097 (50 ksi)	3.715	399	280	187	130	94	70	53	41	32	25	20																		
400 S300-118	4.466	238	204	178	154	111	82	62	48	38	30	24																		
400 S300-118 (50 ksi)	4.466	363	310	221	154	111	82	62	48	38	30	24																		
400 S350-054	2.344	293	186	124	86	62	46	35	27	21																				
400 S350-054 (50 ksi)	2.344	284	178	119	83	60	44	33	26	20																				
400 S350-068	2.926	295	232	154	108	78	58	44	34	26	21																			
400 S350-068 (50 ksi)	2.926	359	225	150	104	75	56	42	33	26	20																			
400 S350-097	4.095	262	224	195	148	107	79	60	46	36	29	23																		
400 S350-097 (50 ksi)	4.095	398	317	211	147	106	79	60	46	36	29	23																		
400 S350-118	4.931	238	203	177	157	126	94	71	55	43	34	27	22																	
400 S350-118 (50 ksi)	4.931	362	310	252	175	126	94	71	55	43	34	27	22																	
550 S162-033	1.074	161	118	88	61	44	33	25	20																					
550 S162-043	1.443	271	179	119	83	60	45	34	27	21																				
550 S162-054	1.795	343	220	147	103	74	55	42	33	26	21																			
550 S162-054 (50 ksi)	1.795	351	220	147	103	74	55	42	33	26	21																			
550 S162-068	2.240	433	272	181	127	92	68	52	41	32	26	21																		
550 S162-068 (50 ksi)	2.240	433	272	181	127	92	68	52	41	32	26	21																		
550 S162-097	3.165	599	376	251	175	127	95	72	56	44	35	29	23																	
550 S162-097 (50 ksi)	3.165	599	376	251	175	127	95	72	56	44	35	29	23																	













Table 9D--Allowable Uniform Loads on S-Member Joists: Deflection of L/480 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L / 480																											
		Joist Span, ft																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
1400 S250-068 (50 ksi)	4.773	783	671	586	521	468	425	389	359	333	301	264	219	184	156	133	114	99	86	75	66	58	51	45	40	36			
1400 S250-097	6.827	2306	1801	1377	1087	879	725	608	517	445	387	339	300	267	235	201	172	149	130	113	99	88	77	69	61	55			
1400 S250-097 (50 ksi)	6.827	2306	1975	1728	1535	1251	1033	867	733	586	475	399	324	272	230	196	169	146	127	111	97	86	76	67	60	53			
1400 S250-118	8.267	3100	2275	1740	1373	1111	916	769	654	563	489	429	379	334	283	241	207	179	156	136	120	105	93	83	74	66			
1400 S250-118 (50 ksi)	8.267	3753	3216	2511	1983	1604	1324	1112	898	717	582	478	397	333	282	241	207	179	155	136	119	105	93	82	73	65			
1400 S300-054*	3.987	388	332	290	257	231	210	192	177	164	153	143	126	112	100	90	81	74	67	61	56	50	45	40	35	31			
1400 S300-054* (50ksi)	3.987	388	332	290	257	231	210	192	177	164	153	143	126	112	100	90	81	74	68	59	52	46	41	36	32	28			
1400 S300-068	5.040	783	670	586	520	468	425	389	358	325	280	243	213	188	167	150	134	122	110	98	85	75	66	58	52	46	41		
1400 S300-068 (50 ksi)	5.040	783	670	586	520	468	425	389	359	333	310	278	241	202	171	146	125	108	94	82	72	64	56	50	44	40			
1400 S300-097	7.173	2305	1960	1499	1183	957	790	662	563	485	421	369	326	290	258	220	189	164	142	125	109	96	85	76	67	60			
1400 S300-097 (50 ksi)	7.173	2305	1975	1727	1535	1309	1081	907	772	646	524	430	358	300	254	217	186	161	140	122	108	95	84	74	66	59			
1400 S300-118	8.689	3411	2503	1915	1511	1222	1009	846	720	619	538	472	417	367	311	265	228	197	172	150	132	116	103	91	81	73			
1400 S300-118 (50 ksi)	8.689	3753	3216	2664	2103	1702	1405	1179	988	790	640	526	437	367	311	265	228	197	171	150	132	116	103	91	81	72			
1400 S350-054*	4.268	388	332	290	257	231	210	192	177	164	153	143	126	112	100	90	81	74	67	61	56	50	45	40	35	31			
1400 S350-054* (50ksi)	4.268	388	332	290	257	231	210	192	177	164	153	143	126	112	100	90	81	74	68	59	52	46	41	36	32	28			
1400 S350-068	5.350	783	670	586	520	467	424	389	358	332	289	254	224	199	178	160	145	129	112	98	86	76	67	60	53	48			
1400 S350-068 (50 ksi)	5.350	783	670	586	520	467	424	389	358	332	310	290	273	238	201	172	148	128	111	97	85	75	67	59	53	47			
1400 S350-097	7.563	2305	1975	1727	1488	1204	994	834	709	611	531	466	399	335	284	242	208	180	157	137	120	106	94	84	74	67			
1400 S350-097 (50 ksi)	7.563	2305	1975	1727	1534	1380	1254	1055	892	713	578	475	395	331	281	239	206	178	155	135	119	105	93	82	73	66			
1400 S350-118	9.154	3753	3059	2340	1847	1494	1233	1035	881	758	659	578	480	403	341	291	250	217	188	165	145	128	113	100	89	80			
1400 S350-118 (50 ksi)	9.154	3753	3215	2812	2449	1982	1636	1373	1085	867	703	578	480	403	341	291	250	217	188	165	145	128	113	100	89	80			
1600 S162-097	6.796	2007	1666	1274	1005	813	671	563	478	412	358	313	277	246	220	198	179	163	145	127	112	99	87	78	69	62			
1600 S162-097 (50 ksi)	6.796	2007	1719	1504	1336	1142	943	791	673	579	504	431	358	301	255	217	187	162	141	123	108	95	84	75	67	60			
1600 S162-118	8.271	2957	2171	1660	1310	1059	874	733	623	536	466	409	361	321	287	259	234	207	180	157	138	122	108	96	86	76			
1600 S162-118 (50 ksi)	8.271	3687	3066	2345	1851	1498	1237	1038	883	760	656	539	448	376	319	272	234	202	176	154	135	119	106	94	84	75			
1600 S200-068*	4.991	682	584	511	453	407	370	339	312	283	246	216	190	169	151	136	123	112	102	93	82	72	64	57	51	45			
1600 S200-068* (50ksi)	4.991	682	584	511	453	407	370	339	312	290	270	253	238	221	187	160	137	119	103	90	79	70	62	55	49	44			
1600 S200-097	7.118	2007	1719	1422	1122	907	749	628	534	459	399	350	309	275	246	221	200	182	161	141	124	109	97	86	77	69			
1600 S200-097 (50 ksi)	7.118	2007	1719	1503	1336	1201	1061	890	757	652	567	477	397	333	282	241	207	179	156	136	120	106	94	83	74	66			
1600 S200-118	8.689	3296	2419	1850	1460	1181	974	817	695	598	520	456	403	358	321	289	261	229	199	175	153	135	120	107	95	85			
1600 S200-118 (50 ksi)	8.689	3687	3159	2632	2078	1682	1388	1165	991	854	727	598	497	417	354	302	260	225	196	171	150	133	118	104	93	83			

For S1: 1 foot=305mm, 1 lb/ft=14.6 N/m.

Notes:

1. Allowable Uniform Loads are determined by solving the bending, deflection and shear equations for the least value.
2. Dead weight of the member has been included in determining the Allowable Uniform Loads.
3. Allowable Uniform Loads are based on the compression flange continuous braced by sheathing.
4. End reactions must not exceed, without web stiffeners, the values shown in the Allowable Web Crippling Tables.
5. Members marked with \* require web stiffeners; the (h/t) web height to thickness ratios exceed 200 and are less than 260. See Web Stiffener Details.
6. Values are based on members with standard punchouts. If punchouts occur at reactions or concentrated loads web stiffeners are required.
7. Minimum Allowable Uniform Loads are limited to 20 plf.

Table 9E--Allowable Uniform Loads on S-Member Joists: Deflection of L/600 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/ 600																													
		Joist Span, ft																													
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30					
250 S162-033	0.721	27																													
250 S162-043	0.983	36	22																												
250 S162-054	1.218	44	27																												
250 S162-054 (50 ksi)	1.218	44	27																												
250 S162-068	1.513	53	33	22																											
250 S162-068 (50 ksi)	1.513	53	33	22																											
250 S162-097	2.128	54	44	29	20																										
250 S162-097 (50 ksi)	2.128	71	44	29	20																										
250 S200-033	0.877	33	20																												
250 S200-043	1.136	42	26																												
250 S200-054	1.410	52	32	21																											
250 S200-054 (50 ksi)	1.410	52	32	21																											
250 S200-068	1.750	64	39	26																											
250 S200-068 (50 ksi)	1.750	64	39	26																											
250 S200-097	2.418	83	53	34	23																										
250 S200-097 (50 ksi)	2.418	54	46	34	23																										
250 S200-118	2.883	42	36	31	27																										
250 S200-118 (50 ksi)	2.883	65	56	40	27																										
250 S250-043	1.289	50	31	21																											
250 S250-054	1.603	62	38	25																											
250 S250-054 (50 ksi)	1.603	62	38	25																											
250 S250-068	1.993	71	47	31	21																										
250 S250-068 (50 ksi)	1.993	76	47	31	21																										
250 S250-097	2.764	54	46	39	28	20																									
250 S250-097 (50 ksi)	2.764	83	63	42	28	20																									
250 S250-118	3.305	42	36	30	27	23																									
250 S250-118 (50 ksi)	3.305	65	55	48	33	23																									
250 S300-054	1.843	73	45	30	20																										
250 S300-054 (50 ksi)	1.843	71	44	29	20																										
250 S300-068	2.296	71	55	36	25																										
250 S300-068 (50 ksi)	2.296	89	55	36	25																										
250 S300-097	3.196	53	45	39	34	24																									
250 S300-097 (50 ksi)	3.196	82	70	49	34	24																									
250 S300-118	3.833	41	35	30	26	23	20																								
250 S300-118 (50 ksi)	3.833	65	55	47	39	28	20																								
250 S350-054	2.055	80	51	34	23																										
250 S350-054 (50 ksi)	2.055	79	49	32	22																										
250 S350-068	2.562	70	60	42	28	20																									
250 S350-068 (50 ksi)	2.562	100	62	41	28	20																									
250 S350-097	3.577	53	45	39	34	27																									
250 S350-097 (50 ksi)	3.577	82	70	56	38	27																									
250 S350-118	4.297	41	34	29	26	23	20																								
250 S350-118 (50 ksi)	4.297	64	54	47	41	32	23																								
350 S162-033	0.839	56	36	24																											
350 S162-043	1.136	76	49	32	22																										

Table 9E--Allowable Uniform Loads on S-Member Joists: Deflection of L/600 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/ 600																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
350 S162-054	1.410	96	60	40	28	20																							
350 S162-054 (50 ksi)	1.410	96	60	40	28	20																							
350 S162-068	1.755	118	74	49	34	24																							
350 S162-068 (50 ksi)	1.755	118	74	49	34	24																							
350 S162-097	2.474	161	100	66	46	33	24																						
350 S162-097 (50 ksi)	2.474	161	100	66	46	33	24																						
350 S200-033	0.932	67	42	28																									
350 S200-043	1.251	90	57	37	26																								
350 S200-054	1.555	111	70	46	32	23																							
350 S200-054 (50 ksi)	1.555	111	70	46	32	23																							
350 S200-068	1.961	138	86	57	40	28	21																						
350 S200-068 (50 ksi)	1.961	138	86	57	40	28	21																						
350 S200-097	2.795	168	119	79	54	39	29	21																					
350 S200-097 (50 ksi)	2.795	168	119	79	54	39	29	21																					
350 S200-118	3.305	148	127	91	63	45	33	25																					
350 S200-118 (50 ksi)	3.305	221	138	91	63	45	33	25																					
350 S250-043	1.443	109	68	45	31	22																							
350 S250-054	1.795	134	84	55	38	28	20																						
350 S250-054 (50 ksi)	1.795	133	83	55	38	27	20																						
350 S250-068	2.235	165	103	68	47	34	25																						
350 S250-068 (50 ksi)	2.235	165	103	68	47	34	25																						
350 S250-097	3.110	167	140	93	64	46	34	25																					
350 S250-097 (50 ksi)	3.110	224	140	93	64	46	34	25																					
350 S250-118	3.727	148	126	109	76	54	40	30	23																				
350 S250-118 (50 ksi)	3.727	226	165	109	76	54	40	30	23																				
350 S300-054	2.036	156	98	65	45	32	24																						
350 S300-054 (50 ksi)	2.036	152	95	63	44	31	23																						
350 S300-068	2.538	193	120	80	55	40	29	22																					
350 S300-068 (50 ksi)	2.538	192	120	80	55	39	29	22																					
350 S300-097	3.542	167	142	109	75	54	40	30	23																				
350 S300-097 (50 ksi)	3.542	167	142	109	75	54	40	30	23																				
350 S300-118	4.255	147	126	109	89	64	47	35	27	21	16																		
350 S300-118 (50 ksi)	4.255	225	193	129	89	64	47	35	27	21	16																		
350 S350-054	2.248	176	110	73	51	36	27	20																					
350 S350-054 (50 ksi)	2.248	168	105	70	48	34	25																						
350 S350-068	2.805	195	137	91	63	45	33	25																					
350 S350-068 (50 ksi)	2.805	213	133	88	61	44	32	24																					
350 S350-097	3.923	166	142	124	86	62	45	34	26	20																			
350 S350-097 (50 ksi)	3.923	254	186	124	86	61	45	34	26	20																			
350 S350-118	4.720	147	125	109	96	73	54	40	31	24																			
350 S350-118 (50 ksi)	4.720	225	192	147	102	73	54	40	31	24																			
362 S162-033	0.854	63	40	26																									
362 S162-043	1.155	85	53	35	24																								
362 S162-054	1.435	105	65	43	30	21																							
362 S162-054 (50 ksi)	1.435	105	65	43	30	21																							

Table 9E--Allowable Uniform Loads on S-Member Joists: Deflection of L/600 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/ 600																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
362 S162-068	1.785	128	80	53	37	26																							
362 S162-068 (50 ksi)	1.785	128	80	53	37	26																							
362 S162-097	2.517	175	109	72	50	36	26	20																					
362 S162-097 (50 ksi)	2.517	175	109	72	50	36	26	20																					
362 S200-033	0.947	72	45	30	21																								
362 S200-043	1.270	98	61	41	28	20																							
362 S200-054	1.579	121	75	50	35	25																							
362 S200-054 (50 ksi)	1.579	121	75	50	35	25																							
362 S200-068	1.992	150	94	62	43	31	23																						
362 S200-068 (50 ksi)	1.992	150	94	62	43	31	23																						
362 S200-097	2.839	189	129	86	59	42	31	23																					
362 S200-097 (50 ksi)	2.839	189	129	86	59	42	31	23																					
362 S200-118	3.368	207	129	86	59	42	31	23																					
362 S200-118 (50 ksi)	3.368	169	145	100	69	49	36	27	21																				
362 S200-118 (50 ksi)	3.368	241	150	100	69	49	36	27	21																				
362 S250-043	1.462	118	73	49	34	24																							
362 S250-054	1.819	145	91	60	42	30	22																						
362 S250-054 (50 ksi)	1.819	144	90	60	42	30	22																						
362 S250-068	2.265	179	112	74	51	37	27	20																					
362 S250-068 (50 ksi)	2.265	179	112	74	51	37	27	20																					
362 S250-097	3.153	189	152	101	70	50	37	28	21																				
362 S250-097 (50 ksi)	3.153	243	152	101	70	50	37	28	21																				
362 S250-118	3.780	169	144	119	82	59	43	33	25																				
362 S250-118 (50 ksi)	3.780	258	179	119	82	59	43	33	25																				
362 S300-054	2.060	169	106	70	49	35	26																						
362 S300-054 (50 ksi)	2.060	165	103	68	47	34	25																						
362 S300-068	2.569	209	130	86	60	43	32	24																					
362 S300-068 (50 ksi)	2.569	208	130	86	60	43	32	24																					
362 S300-097	3.585	189	161	118	82	59	43	32	25																				
362 S300-097 (50 ksi)	3.585	285	178	118	82	59	43	32	25																				
362 S300-118	4.308	168	144	125	97	69	51	38	29	23																			
362 S300-118 (50 ksi)	4.308	257	211	140	97	69	51	38	29	23																			
362 S350-054	2.272	190	119	79	55	39	29	22																					
362 S350-054 (50 ksi)	2.272	182	114	75	52	37	28	21																					
362 S350-068	2.835	218	148	98	68	49	36	27	21																				
362 S350-068 (50 ksi)	2.835	230	144	95	66	47	35	26	20																				
362 S350-097	3.966	188	161	134	93	67	49	37	28	22																			
362 S350-097 (50 ksi)	3.966	288	202	134	93	67	49	37	28	22																			
362 S350-118	4.773	168	143	125	110	79	58	44	33	26	20																		
362 S350-118 (50 ksi)	4.773	257	219	159	111	79	58	44	33	26	20																		
400 S162-033	0.898	80	50	33	23																								
400 S162-043	1.213	107	67	44	31	22																							
400 S162-054	1.507	132	82	55	38	27	20																						
400 S162-054 (50 ksi)	1.507	132	82	55	38	27	20																						
400 S162-068	1.876	162	101	67	47	34	25																						
400 S162-068 (50 ksi)	1.876	162	101	67	47	34	25																						

Table 9E--Allowable Uniform Loads on S-Member Joists: Deflection of L/600 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/ 600																											
		Joist Span, ft																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
400 S162-097	2.647	222	139	92	64	46	34	25																					
400 S162-097 (50 ksi)	2.647	222	139	92	64	46	34	25																					
400 S200-033	0.991	91	57	38	26																								
400 S200-043	1.328	123	77	51	36	26																							
400 S200-054	1.651	152	95	63	44	31	23																						
400 S200-054 (50 ksi)	1.651	152	95	63	44	31	23																						
400 S200-068	2.082	189	118	78	54	39	29	22																					
400 S200-068 (50 ksi)	2.082	189	118	78	54	39	29	22																					
400 S200-097	2.968	261	163	108	75	54	40	30	23																				
400 S200-097 (50 ksi)	2.968	261	163	108	75	54	40	30	23																				
400 S200-118	3.516	239	190	126	88	63	46	35	27	21																			
400 S200-118 (50 ksi)	3.516	239	190	126	88	63	46	35	27	21																			
400 S250-043	1.481	143	89	59	41	30	22																						
400 S250-054	1.855	179	112	74	52	37	28	21																					
400 S250-054 (50 ksi)	1.855	176	110	73	51	36	27	20																					
400 S250-068	2.349	224	140	93	65	46	34	26	20																				
400 S250-068 (50 ksi)	2.349	224	140	93	65	46	34	26	20																				
400 S250-097	3.369	262	194	129	90	64	48	36	28	21																			
400 S250-097 (50 ksi)	3.369	311	194	129	90	64	48	36	28	21																			
400 S250-118	3.939	239	204	150	104	75	55	42	32	25																			
400 S250-118 (50 ksi)	3.939	361	226	150	104	75	55	42	32	25																			
400 S300-054	2.132	211	132	88	61	44	32	25																					
400 S300-054 (50 ksi)	2.132	206	129	86	60	43	32	24																					
400 S300-068	2.659	261	163	109	75	54	40	30	23																				
400 S300-068 (50 ksi)	2.659	260	163	108	75	54	40	30	23																				
400 S300-097	3.715	262	224	149	103	74	55	41	32	25																			
400 S300-097 (50 ksi)	3.715	357	224	149	103	74	55	41	32	25																			
400 S300-118	4.466	238	204	176	122	88	65	49	38	29	23																		
400 S300-118 (50 ksi)	4.466	363	265	176	122	88	65	49	38	29	23																		
400 S350-054	2.344	237	149	99	69	49	37	28	21																				
400 S350-054 (50 ksi)	2.344	227	142	94	66	47	35	26	20																				
400 S350-068	2.926	295	185	123	85	61	45	34	26	21																			
400 S350-068 (50 ksi)	2.926	286	179	119	83	60	44	33	26	20																			
400 S350-097	4.095	262	224	169	117	84	62	47	36	28	22																		
400 S350-097 (50 ksi)	4.095	398	253	168	117	84	62	47	36	28	22																		
400 S350-118	4.931	238	203	177	139	100	74	56	43	33	26	21																	
400 S350-118 (50 ksi)	4.931	362	301	200	139	100	74	56	43	33	26	21																	
550 S162-033	1.074	161	105	70	49	35	26	20																					
550 S162-043	1.443	227	143	95	66	48	36	27	21																				
550 S162-054	1.795	280	176	117	82	59	44	33	26	20																			
550 S162-054 (50 ksi)	1.795	280	176	117	82	59	44	33	26	20																			
550 S162-068	2.240	346	217	145	101	73	54	41	32	25	20																		
550 S162-068 (50 ksi)	2.240	346	217	145	101	73	54	41	32	25	20																		
550 S162-097	3.165	479	300	200	140	101	75	57	44	35	28	22																	
550 S162-097 (50 ksi)	3.165	479	300	200	140	101	75	57	44	35	28	22																	

Table 9E--Allowable Uniform Loads on S-Member Joists: Deflection of L/600 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/600																											
		Joist Span, ft																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
550 S162-118	3.837	570	358	238	166	120	89	68	53	41	33	26	21																
550 S162-118 (50 ksi)	3.837	570	358	238	166	120	89	68	53	41	33	26	21																
550 S200-033	1.167	164	116	78	54	39	29	22																					
550 S200-043	1.568	255	162	108	75	54	41	31	24																				
550 S200-054	1.940	318	200	133	93	67	50	38	30	23																			
550 S200-054 (50 ksi)	1.940	318	200	133	93	67	50	38	30	23																			
550 S200-068	2.446	398	250	166	116	84	63	48	37	29	23																		
550 S200-068 (50 ksi)	2.446	398	250	166	116	84	63	48	37	29	23																		
550 S200-097	3.487	556	349	232	162	117	87	66	51	41	32	26	21																
550 S200-097 (50 ksi)	3.487	556	349	232	162	117	87	66	51	41	32	26	21																
550 S200-118	4.255	625	418	279	195	141	105	80	62	49	39	31	25	21															
550 S200-118 (50 ksi)	4.255	625	418	279	195	141	105	80	62	49	39	31	25	21															
550 S250-043	1.711	266	184	123	86	62	46	35	27	22																			
550 S250-054	2.144	353	233	155	108	79	58	45	35	27	22																		
550 S250-054 (50 ksi)	2.144	353	233	155	108	79	58	45	35	27	22																		
550 S250-068	2.713	466	292	195	136	98	73	56	43	34	27	22																	
550 S250-068 (50 ksi)	2.713	466	292	195	136	98	73	56	43	34	27	22																	
550 S250-097	3.888	654	410	273	191	138	103	78	61	48	38	31	25	20															
550 S250-097 (50 ksi)	3.888	654	410	273	191	138	103	78	61	48	38	31	25	20															
550 S250-118	4.678	825	487	324	227	164	122	93	72	57	45	36	30	24	20														
550 S250-118 (50 ksi)	4.678	825	487	324	227	164	122	93	72	57	45	36	30	24	20														
550 S300-054	2.352	374	262	175	122	88	66	50	39	31	25	20																	
550 S300-054 (50 ksi)	2.352	374	262	175	122	88	66	50	39	31	25	20																	
550 S300-068	2.979	518	334	223	156	113	84	64	50	39	31	25	21																
550 S300-068 (50 ksi)	2.979	518	334	223	156	113	84	64	50	39	31	25	21																
550 S300-097	4.234	661	466	311	217	157	117	89	69	55	44	35	29	23															
550 S300-097 (50 ksi)	4.234	661	466	311	217	157	117	89	69	55	44	35	29	23															
550 S300-118	5.100	825	535	370	258	187	139	106	82	65	52	42	34	28	23														
550 S300-118 (50 ksi)	5.100	825	535	370	258	187	139	106	82	65	52	42	34	28	23														
550 S350-054	2.632	446	304	203	142	103	76	58	45	36	29	23																	
550 S350-054 (50 ksi)	2.632	446	304	203	142	103	76	58	45	36	29	23																	
550 S350-068	3.290	571	381	254	177	128	96	73	57	45	36	29	24																
550 S350-068 (50 ksi)	3.290	571	381	254	177	128	96	73	57	45	36	29	24																
550 S350-097	4.614	661	526	351	245	177	132	101	78	62	49	40	32	27	22														
550 S350-097 (50 ksi)	4.614	661	526	351	245	177	132	101	78	62	49	40	32	27	22														
550 S350-118	5.564	825	624	534	418	292	211	157	120	93	73	59	47	39	32	26	22												
550 S350-118 (50 ksi)	5.564	825	624	534	418	292	211	157	120	93	73	59	47	39	32	26	22												
600 S162-033	1.133	175	128	86	60	44	33	25																					
600 S162-043	1.519	280	176	117	82	59	44	34	26	21																			
600 S162-054	1.892	345	217	145	101	73	54	42	32	25	20																		
600 S162-054 (50 ksi)	1.892	345	217	145	101	73	54	42	32	25	20																		
600 S162-068	2.361	427	268	179	125	90	67	51	40	31	25	20																	
600 S162-068 (50 ksi)	2.361	427	268	179	125	90	67	51	40	31	25	20																	
600 S162-097	3.338	591	371	248	173	125	93	71	55	43	35	28	23																
600 S162-097 (50 ksi)	3.338	591	371	248	173	125	93	71	55	43	35	28	23																













Table 9F--Allowable Uniform Loads on S-Member Joists: Deflection of L/720 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/720																										
		Joist Span, ft																										
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
250 S162-033	0.721	22																										
250 S162-043	0.983	30																										
250 S162-054	1.218	36	22																									
250 S162-054 (50 ksi)	1.218	36	22																									
250 S162-068	1.513	44	27																									
250 S162-068 (50 ksi)	1.513	44	27																									
250 S162-097	2.128	54	36	24																								
250 S162-097 (50 ksi)	2.128	59	36	24																								
250 S200-033	0.877	27																										
250 S200-043	1.136	35	22																									
250 S200-054	1.410	43	27																									
250 S200-054 (50 ksi)	1.410	43	27																									
250 S200-068	1.750	53	33	21																								
250 S200-068 (50 ksi)	1.750	53	33	21																								
250 S200-097	2.418	54	43	28																								
250 S200-097 (50 ksi)	2.418	54	43	28																								
250 S200-118	2.883	70	43	28																								
250 S200-118 (50 ksi)	2.883	70	43	28																								
250 S250-043	1.289	42	26																									
250 S250-054	1.603	51	32	21																								
250 S250-054 (50 ksi)	1.603	51	32	21																								
250 S250-068	1.993	63	39	25																								
250 S250-068 (50 ksi)	1.993	63	39	25																								
250 S250-097	2.764	54	46	34	23																							
250 S250-097 (50 ksi)	2.764	83	52	34	23																							
250 S250-118	3.305	42	36	30	27																							
250 S250-118 (50 ksi)	3.305	65	55	40	27																							
250 S300-054	1.843	60	37	24																								
250 S300-054 (50 ksi)	1.843	59	36	24																								
250 S300-068	2.296	71	46	30	20																							
250 S300-068 (50 ksi)	2.296	74	46	30	20																							
250 S300-097	3.196	53	45	39	27																							
250 S300-097 (50 ksi)	3.196	82	62	40	27																							
250 S300-118	3.833	41	35	30	26	22																						
250 S300-118 (50 ksi)	3.833	65	55	47	32	22																						
250 S350-054	2.055	68	42	28																								
250 S350-054 (50 ksi)	2.055	65	40	26																								
250 S350-068	2.562	70	52	34	23																							
250 S350-068 (50 ksi)	2.562	83	51	34	23																							
250 S350-097	3.577	53	45	39	31	22																						
250 S350-097 (50 ksi)	3.577	82	70	46	31	22																						
250 S350-118	4.297	41	34	29	26	23																						
250 S350-118 (50 ksi)	4.297	64	54	47	37	26																						
350 S162-033	0.839	48	30	20																								
350 S162-043	1.136	65	41	27																								

Table 9F--Allowable Uniform Loads on S-Member Joists: Deflection of L/720 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/ 720																											
		Joist Span, ft																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
350 S162-054	1.410	80	50	33	23																								
350 S162-054 (50 ksi)	1.410	80	50	33	23																								
350 S162-068	1.755	98	61	40	28	20																							
350 S162-068 (50 ksi)	1.755	98	61	40	28	20																							
350 S162-097	2.474	134	83	55	38	27	20																						
350 S162-097 (50 ksi)	2.474	134	83	55	38	27	20																						
350 S200-033	0.932	55	34	23																									
350 S200-043	1.251	75	47	31	21																								
350 S200-054	1.555	93	58	38	26																								
350 S200-054 (50 ksi)	1.555	93	58	38	26																								
350 S200-068	1.961	115	72	47	33	23																							
350 S200-068 (50 ksi)	1.961	115	72	47	33	23																							
350 S200-097	2.795	158	98	65	45	32	23																						
350 S200-097 (50 ksi)	2.795	158	98	65	45	32	23																						
350 S200-118	3.305	148	115	76	52	37	27	20																					
350 S200-118 (50 ksi)	3.305	148	115	76	52	37	27	20																					
350 S250-043	1.443	90	56	37	26																								
350 S250-054	1.795	111	69	46	32	23																							
350 S250-054 (50 ksi)	1.795	111	69	46	32	23																							
350 S250-068	2.235	137	85	57	39	28	20																						
350 S250-068 (50 ksi)	2.235	137	85	57	39	28	20																						
350 S250-097	3.110	167	116	77	53	38	28	21																					
350 S250-097 (50 ksi)	3.110	167	116	77	53	38	28	21																					
350 S250-118	3.727	148	126	90	62	44	32	24																					
350 S250-118 (50 ksi)	3.727	148	126	90	62	44	32	24																					
350 S300-054	2.036	130	81	54	37	26																							
350 S300-054 (50 ksi)	2.036	126	79	52	36	26																							
350 S300-068	2.538	160	100	66	46	33	24																						
350 S300-068 (50 ksi)	2.538	160	100	66	46	33	24																						
350 S300-097	3.542	167	136	90	62	44	32	24																					
350 S300-097 (50 ksi)	3.542	167	136	90	62	44	32	24																					
350 S300-118	4.255	147	126	106	73	52	38	29	22																				
350 S300-118 (50 ksi)	4.255	147	126	106	73	52	38	29	22																				
350 S350-054	2.248	146	91	60	42	30	22																						
350 S350-054 (50 ksi)	2.248	139	87	58	40	28	21																						
350 S350-068	2.805	182	113	75	52	37	27	20																					
350 S350-068 (50 ksi)	2.805	177	110	73	50	36	26	20																					
350 S350-097	3.923	166	142	103	71	51	37	28	21																				
350 S350-097 (50 ksi)	3.923	166	142	103	71	51	37	28	21																				
350 S350-118	4.720	147	125	109	84	60	44	33	25																				
350 S350-118 (50 ksi)	4.720	147	125	109	84	60	44	33	25																				
362 S162-033	0.854	53	33	22																									
362 S162-043	1.155	71	44	29	20																								
362 S162-054	1.435	87	54	36	25																								
362 S162-054 (50 ksi)	1.435	87	54	36	25																								

Table 9F--Allowable Uniform Loads on S-Member Joists: Deflection of L/720 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/720																											
		Joist Span, ft																											
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
362 S162-068	1.785	107	66	44	30	22																							
362 S162-068 (50 ksi)	1.785	107	66	44	30	22																							
362 S162-097	2.517	145	91	60	41	29	22																						
362 S162-097 (50 ksi)	2.517	145	91	60	41	29	22																						
362 S200-033	0.947	60	37	25																									
362 S200-043	1.270	82	51	34	23																								
362 S200-054	1.579	100	63	41	29	20																							
362 S200-054 (50 ksi)	1.579	100	63	41	29	20																							
362 S200-068	1.992	125	78	51	36	25																							
362 S200-068 (50 ksi)	1.992	125	78	51	36	25																							
362 S200-097	2.839	172	107	71	49	35	25																						
362 S200-097 (50 ksi)	2.839	172	107	71	49	35	25																						
362 S200-118	3.368	169	125	82	57	41	30	22																					
362 S200-118 (50 ksi)	3.368	200	125	82	57	41	30	22																					
362 S250-043	1.462	98	61	40	28	20																							
362 S250-054	1.819	121	75	50	34	25																							
362 S250-054 (50 ksi)	1.819	120	75	50	34	25																							
362 S250-068	2.265	149	93	61	42	30	22																						
362 S250-068 (50 ksi)	2.265	149	93	61	42	30	22																						
362 S250-097	3.153	189	126	83	58	41	30	23																					
362 S250-097 (50 ksi)	3.153	202	126	83	58	41	30	23																					
362 S250-118	3.780	169	144	98	68	48	35	26	20																				
362 S250-118 (50 ksi)	3.780	238	149	98	68	48	35	26	20																				
362 S300-054	2.060	140	88	58	40	29	21																						
362 S300-054 (50 ksi)	2.060	137	85	57	39	28	20																						
362 S300-068	2.569	173	108	72	50	35	26																						
362 S300-068 (50 ksi)	2.569	173	108	71	49	35	26																						
362 S300-097	3.585	189	148	98	68	48	35	26	20																				
362 S300-097 (50 ksi)	3.585	237	148	98	68	48	35	26	20																				
362 S300-118	4.308	168	144	116	80	57	42	31	24																				
362 S300-118 (50 ksi)	4.308	257	175	116	80	57	42	31	24																				
362 S350-054	2.272	158	99	65	45	32	24																						
362 S350-054 (50 ksi)	2.272	151	94	62	43	31	23																						
362 S350-068	2.835	197	123	81	56	40	30	22																					
362 S350-068 (50 ksi)	2.835	191	119	79	55	39	29	21																					
362 S350-097	3.966	188	161	111	77	55	40	30	23																				
362 S350-097 (50 ksi)	3.966	268	168	111	77	55	40	30	23																				
362 S350-118	4.773	168	143	125	91	65	48	36	27	21																			
362 S350-118 (50 ksi)	4.773	257	199	132	91	65	48	36	27	21																			
400 S162-033	0.898	66	41	27																									
400 S162-043	1.213	89	56	37	26																								
400 S162-054	1.507	110	68	45	31	22																							
400 S162-054 (50 ksi)	1.507	110	68	45	31	22																							
400 S162-068	1.876	135	84	56	39	28	20																						
400 S162-068 (50 ksi)	1.876	135	84	56	39	28	20																						



Table 9F--Allowable Uniform Loads on S-Member Joists: Deflection of L/720 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = $L/720$																										
		Joist Span, ft																										
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
400 S162-097	2.647	184	115	76	53	38	28	21																				
400 S162-097 (50 ksi)	2.647	184	115	76	53	38	28	21																				
400 S200-033	0.991	75	47	31	22																							
400 S200-043	1.328	102	64	42	29	21																						
400 S200-054	1.651	126	79	52	36	26																						
400 S200-054 (50 ksi)	1.651	126	79	52	36	26																						
400 S200-068	2.082	157	98	65	45	32	24																					
400 S200-068 (50 ksi)	2.082	157	98	65	45	32	24																					
400 S200-097	2.968	217	136	90	62	45	33	25																				
400 S200-097 (50 ksi)	2.968	217	136	90	62	45	33	25																				
400 S200-118	3.516	239	158	105	72	52	38	29	22	17																		
400 S200-118 (50 ksi)	3.516	239	158	105	72	52	38	29	22	17																		
400 S250-043	1.481	119	74	49	34	24																						
400 S250-054	1.855	149	93	62	43	31	23																					
400 S250-054 (50 ksi)	1.855	146	91	60	42	30	22																					
400 S250-068	2.349	186	116	77	53	38	28	21																				
400 S250-068 (50 ksi)	2.349	186	116	77	53	38	28	21																				
400 S250-097	3.369	258	161	107	74	53	39	29	22																			
400 S250-097 (50 ksi)	3.369	258	161	107	74	53	39	29	22																			
400 S250-118	3.939	239	187	124	86	62	45	34	26	20																		
400 S250-118 (50 ksi)	3.939	300	187	124	86	62	45	34	26	20																		
400 S300-054	2.132	176	110	73	51	36	27	20																				
400 S300-054 (50 ksi)	2.132	171	107	71	49	35	26	20																				
400 S300-068	2.659	217	136	90	62	45	33	25																				
400 S300-068 (50 ksi)	2.659	216	135	90	62	45	33	25																				
400 S300-097	3.715	262	186	123	85	61	45	34	26	20																		
400 S300-097 (50 ksi)	3.715	297	186	123	85	61	45	34	26	20																		
400 S300-118	4.466	238	204	146	101	73	53	40	31	24																		
400 S300-118 (50 ksi)	4.466	352	220	146	101	73	53	40	31	24																		
400 S350-054	2.344	197	123	82	57	41	30	23																				
400 S350-054 (50 ksi)	2.344	189	118	78	54	39	29	22																				
400 S350-068	2.926	246	154	102	71	51	37	28	22																			
400 S350-068 (50 ksi)	2.926	238	149	99	69	49	36	27	21																			
400 S350-097	4.095	262	211	140	97	70	51	39	29	23																		
400 S350-097 (50 ksi)	4.095	336	210	139	97	69	51	38	29	23																		
400 S350-118	4.931	238	203	166	115	83	61	46	35	27	21																	
400 S350-118 (50 ksi)	4.931	362	250	166	115	83	61	46	35	27	21																	
550 S162-033	1.074	139	87	58	40	29	22																					
550 S162-043	1.443	189	119	79	55	40	29	22																				
550 S162-054	1.795	233	146	97	68	49	36	28	21																			
550 S162-054 (50 ksi)	1.795	233	146	97	68	49	36	28	21																			
550 S162-068	2.240	288	181	120	84	60	45	34	26	21																		
550 S162-068 (50 ksi)	2.240	288	181	120	84	60	45	34	26	21																		
550 S162-097	3.165	398	250	166	116	84	62	47	36	28	23																	
550 S162-097 (50 ksi)	3.165	398	250	166	116	84	62	47	36	28	23																	

**Table 9F--Allowable Uniform Loads on S-Member Joists: Deflection of L/720 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>**

		Deflection Limit = L / 720																												
		Joist Span, ft																												
Member Identification	Wt. lbs/ft	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
550 S162-118	3.837	475	298	198	138	100	74	56	43	34	27	21																		
550 S162-118 (50 ksi)	3.837	475	298	198	138	100	74	56	43	34	27	21																		
550 S200-033	1.167	154	97	64	45	32	24																							
550 S200-043	1.568	214	134	90	62	45	33	25	20																					
550 S200-054	1.940	265	166	111	77	56	41	31	24																					
550 S200-054 (50 ksi)	1.940	265	166	111	77	56	41	31	24																					
550 S200-068	2.446	331	208	138	96	70	52	39	30	24																				
550 S200-068 (50 ksi)	2.446	331	208	138	96	70	52	39	30	24																				
550 S200-097	3.487	463	290	193	135	97	72	55	42	33	26	21																		
550 S200-097 (50 ksi)	3.487	463	290	193	135	97	72	55	42	33	26	21																		
550 S200-118	4.255	555	348	232	161	117	87	66	51	40	32	25	20																	
550 S200-118 (50 ksi)	4.255	555	348	232	161	117	87	66	51	40	32	25	20																	
550 S250-043	1.711	244	153	102	71	51	38	29	22																					
550 S250-054	2.144	309	194	129	90	65	48	37	28	22																				
550 S250-054 (50 ksi)	2.144	309	194	129	90	65	48	37	28	22																				
550 S250-068	2.713	387	243	162	113	82	61	46	36	28	22																			
550 S250-068 (50 ksi)	2.713	387	243	162	113	82	61	46	36	28	22																			
550 S250-097	3.888	544	341	227	158	114	85	65	50	39	31	25	20																	
550 S250-097 (50 ksi)	3.888	544	341	227	158	114	85	65	50	39	31	25	20																	
550 S250-118	4.678	625	405	270	188	136	101	77	59	47	37	30	24																	
550 S250-118 (50 ksi)	4.678	625	405	270	188	136	101	77	59	47	37	30	24																	
550 S300-054	2.352	347	218	145	101	73	54	41	32	25	20																			
550 S300-054 (50 ksi)	2.352	347	218	145	101	73	54	41	32	25	20																			
550 S300-068	2.979	444	278	185	129	93	69	53	41	32	26	21																		
550 S300-068 (50 ksi)	2.979	444	278	185	129	93	69	53	41	32	26	21																		
550 S300-097	4.234	619	388	259	180	130	97	74	57	45	36	29	23																	
550 S300-097 (50 ksi)	4.234	619	388	259	180	130	97	74	57	45	36	29	23																	
550 S300-118	5.100	625	462	308	214	155	115	88	68	53	42	34	27	22																
550 S300-118 (50 ksi)	5.100	625	462	308	214	155	115	88	68	53	42	34	27	22																
550 S350-054	2.632	403	253	169	118	85	63	48	37	29	23																			
550 S350-054 (50 ksi)	2.632	403	253	169	118	85	63	48	37	29	23																			
550 S350-068	3.290	505	317	211	147	106	79	60	47	37	29	23																		
550 S350-068 (50 ksi)	3.290	505	317	211	147	106	79	60	47	37	29	23																		
550 S350-097	4.614	661	437	291	203	147	109	83	64	51	40	32	26	21																
550 S350-097 (50 ksi)	4.614	661	437	291	203	147	109	83	64	51	40	32	26	21																
550 S350-118	5.564	624	521	347	242	175	130	99	77	60	48	39	31	25	21															
550 S350-118 (50 ksi)	5.564	624	521	347	242	175	130	99	77	60	48	39	31	25	21															
600 S162-033	1.133	172	108	72	50	36	27	20																						
600 S162-043	1.519	233	146	97	68	49	37	28	22																					
600 S162-054	1.892	288	180	120	84	61	45	34	27	21																				
600 S162-054 (50 ksi)	1.892	288	180	120	84	61	45	34	27	21																				
600 S162-068	2.361	355	223	148	104	75	56	42	33	26	21																			
600 S162-068 (50 ksi)	2.361	355	223	148	104	75	56	42	33	26	21																			
600 S162-097	3.338	492	309	206	143	104	77	59	45	36	28	23																		
600 S162-097 (50 ksi)	3.338	492	309	206	143	104	77	59	45	36	28	23																		

**Table 9F--Allowable Uniform Loads on S-Member Joists: Deflection of L/720 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>**

Member Identification		Wt. lbs/ft	Deflection Limit = L/ 720																											
			6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
600 S162-118		4.048	588	369	246	171	124	92	70	54	43	34	27	22																
600 S162-118	(50 ksi)	4.048	588	369	246	171	124	92	70	54	43	34	27	22																
600 S200-033		1.226	177	120	80	56	40	30	23																					
600 S200-043		1.634	263	165	110	77	56	41	31	24																				
600 S200-054		2.036	325	204	136	95	69	51	39	30	24																			
600 S200-054	(50 ksi)	2.036	325	204	136	95	69	51	39	30	24																			
600 S200-068		2.567	407	255	170	119	86	64	49	38	30	24																		
600 S200-068	(50 ksi)	2.567	407	255	170	119	86	64	49	38	30	24																		
600 S200-097		3.660	569	357	238	166	120	89	68	53	41	33	27	22																
600 S200-097	(50 ksi)	3.660	569	357	238	166	120	89	68	53	41	33	27	22																
600 S200-118		4.466	685	430	286	200	144	107	82	63	50	40	32	26	21															
600 S200-118	(50 ksi)	4.466	685	430	286	200	144	107	82	63	50	40	32	26	21															
600 S250-043		1.788	298	187	125	87	63	47	36	28	22																			
600 S250-054		2.240	378	237	158	110	80	59	45	35	28	22																		
600 S250-054	(50 ksi)	2.240	366	230	153	107	77	58	44	34	27	21																		
600 S250-068		2.834	474	298	198	139	100	75	57	44	35	28	22																	
600 S250-068	(50 ksi)	2.834	474	297	198	138	100	74	57	44	35	28	22																	
600 S250-097		4.061	667	419	279	195	141	105	80	62	49	39	31	25	21															
600 S250-097	(50 ksi)	4.061	667	419	279	195	141	105	80	62	49	39	31	25	21															
600 S250-118		4.889	792	497	332	231	167	125	95	74	58	46	37	30	25	20														
600 S250-118	(50 ksi)	4.889	793	497	332	231	167	125	95	74	58	46	37	30	25	20														
600 S300-054		2.448	421	266	177	124	90	67	51	39	31	25	20																	
600 S300-054	(50 ksi)	2.448	396	249	166	116	84	62	47	37	29	23																		
600 S300-068		3.101	541	340	227	158	115	85	65	50	40	32	26	21																
600 S300-068	(50 ksi)	3.101	530	333	222	155	112	83	64	49	39	31	25	20																
600 S300-097		4.407	756	475	317	221	160	119	91	70	55	44	36	29	24	20														
600 S300-097	(50 ksi)	4.407	756	475	317	221	160	119	91	70	55	44	36	29	24	20														
600 S300-118		5.311	921	565	377	263	190	142	108	84	66	53	42	35	28	23														
600 S300-118	(50 ksi)	5.311	901	565	377	263	190	142	108	84	66	53	42	35	28	23														
600 S350-054		2.729	491	308	205	144	104	77	59	46	36	29	23																	
600 S350-054	(50 ksi)	2.729	467	293	196	137	99	74	56	43	34	27	22																	
600 S350-068		3.411	615	386	257	180	130	97	74	57	45	36	29	24																
600 S350-068	(50 ksi)	3.411	588	369	246	172	124	93	70	55	43	34	28	23																
600 S350-097		4.787	833	534	356	249	180	134	102	79	63	50	40	33	27	22														
600 S350-097	(50 ksi)	4.787	843	529	353	246	178	133	101	79	62	49	40	32	27	22														
600 S350-118		5.775	791	637	425	297	215	160	122	95	75	60	48	39	32	26	22													
600 S350-118	(50 ksi)	5.775	1015	637	425	297	215	160	122	95	75	60	48	39	32	26	22													
800 S162-043		1.826	349	267	190	133	97	72	55	43	34	27	22																	
800 S162-054		2.276	481	352	241	169	122	91	70	54	43	35	28	23																
800 S162-054	(50 ksi)	2.276	565	355	241	166	120	90	69	52	42	34	28	23																
800 S162-068		2.846	631	450	301	210	152	114	87	68	54	43	35	29	24	20														
800 S162-068	(50 ksi)	2.846	715	449	300	210	152	114	87	68	54	43	35	29	24	20														
800 S162-097		4.030	999	627	419	293	213	159	121	95	75	60	49	40	33	28	23													
800 S162-097	(50 ksi)	4.030	999	627	419	293	213	159	121	95	75	60	49	40	33	28	23													







Table 9F--Allowable Uniform Loads on S-Member Joists: Deflection of L/720 (lbs/ft)<sup>1,2,3,4,5,6,7</sup>

Member Identification	Wt. lbs/ft	Deflection Limit = L/ 720																								
		Joist Span, ft																								
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1400 S250-068 (50 ksi)	4.773	783	671	586	521	468	425	389	329	282	212	174	144	121	102	87	74	64	55	48	42	37	32	29	25	22
1400 S250-097	6.827	2306	1801	1377	1087	879	725	608	497	396	321	263	218	183	154	131	113	97	84	73	64	56	49	44	39	34
1400 S250-097 (50 ksi)	6.827	2306	1975	1728	1480	1077	807	620	486	388	314	258	214	179	151	129	110	95	82	72	63	55	48	43	38	33
1400 S250-118	8.267	3100	2275	1740	1373	1111	916	762	598	477	386	317	263	220	186	158	135	117	101	88	77	67	59	52	46	41
1400 S250-118 (50 ksi)	8.267	3753	3216	2511	1813	1319	989	760	596	475	385	316	262	219	185	158	135	116	101	88	77	67	59	52	46	41
1400 S300-054*	3.987	388	332	290	257	231	210	192	177	164	153	143	126	105	89	76	65	56	48	42	37	32	28	25	22	20
1400 S300-054* (50ksi)	3.987	388	332	290	257	231	210	192	177	164	153	143	134	115	96	81	69	59	51	44	38	33	29	26	23	20
1400 S300-068	5.040	783	670	586	520	468	425	383	325	280	242	198	165	138	116	99	85	73	63	55	48	42	37	33	29	26
1400 S300-068 (50 ksi)	5.040	783	670	586	520	468	425	389	359	288	233	191	159	133	112	96	82	71	61	53	46	41	36	32	28	25
1400 S300-097	7.173	2305	1960	1499	1183	957	790	662	545	435	352	289	240	201	170	145	124	107	93	81	71	62	54	48	43	38
1400 S300-097 (50 ksi)	7.173	2305	1975	1727	1535	1187	890	684	537	428	347	284	236	198	167	142	122	105	91	79	69	61	54	47	42	37
1400 S300-118	8.689	3411	2503	1915	1511	1222	1009	837	657	524	424	348	289	242	204	174	149	129	111	97	85	74	66	58	51	45
1400 S300-118 (50 ksi)	8.689	3753	3216	2664	1994	1452	1088	836	656	523	424	348	289	242	204	174	149	129	111	97	85	74	66	58	51	45
1400 S350-054*	4.268	388	332	290	257	231	210	192	177	164	153	143	134	126	107	91	78	68	59	51	45	39	35	31	27	24
1400 S350-054* (50ksi)	4.268	388	332	290	257	231	210	192	177	164	153	143	134	123	104	89	76	65	57	49	43	38	33	30	26	23
1400 S350-068	5.350	783	670	586	520	467	424	389	358	332	277	228	189	158	134	114	98	84	73	64	56	49	43	38	34	30
1400 S350-068 (50 ksi)	5.350	783	670	586	520	467	424	389	358	332	274	225	187	157	132	113	97	83	72	63	55	48	43	38	33	30
1400 S350-097	7.563	2305	1975	1727	1488	1204	994	764	599	478	387	318	264	221	187	159	136	118	102	89	78	68	60	53	47	42
1400 S350-097 (50 ksi)	7.563	2305	1975	1727	1534	1310	982	755	592	473	383	314	261	218	185	157	135	116	101	88	77	67	59	52	46	41
1400 S350-118	9.154	3753	3059	2340	1847	1494	1195	919	721	575	466	382	317	266	225	191	164	141	123	107	93	82	72	64	57	50
1400 S350-118 (50 ksi)	9.154	3753	3215	2812	2190	1594	1195	919	721	575	466	382	317	266	225	191	164	141	123	107	93	82	72	64	57	50
1600 S162-097	6.796	2007	1666	1274	1005	813	671	563	478	412	358	295	245	205	173	148	127	109	95	83	72	63	56	49	44	39
1600 S162-097 (50 ksi)	6.796	2007	1719	1504	1336	1142	892	685	538	429	348	285	237	198	168	143	122	106	92	80	70	61	54	48	42	38
1600 S162-118	8.271	2957	2171	1660	1310	1059	874	733	623	536	444	364	302	253	214	182	156	135	117	102	89	79	69	61	54	48
1600 S162-118 (50 ksi)	8.271	3687	3066	2345	1851	1486	1114	856	672	536	434	357	296	248	210	179	153	132	115	100	87	77	68	60	53	47
1600 S200-068*	4.991	682	584	511	453	407	370	339	312	283	246	216	180	150	127	108	93	80	70	61	53	47	41	36	32	29
1600 S200-068* (50ksi)	4.991	682	584	511	453	407	370	339	312	290	255	209	174	146	123	105	90	78	67	59	51	45	40	35	31	28
1600 S200-097	7.118	2007	1719	1422	1122	907	749	628	534	459	396	325	270	226	191	163	140	121	105	91	80	70	62	55	49	43
1600 S200-097 (50 ksi)	7.118	2007	1719	1503	1336	1201	986	758	595	475	385	316	262	220	186	158	136	117	102	89	78	68	60	53	47	42
1600 S200-118	8.689	3296	2419	1850	1460	1181	974	817	695	598	492	404	335	281	237	202	174	150	130	113	99	87	77	68	61	54
1600 S200-118 (50 ksi)	8.689	3687	3159	2632	2078	1648	1236	950	745	595	482	396	328	275	233	198	170	147	127	111	97	86	75	67	59	53

For St: 1 foot=305mm, 1 lb/ft=14.6 N/m.

Notes:

- Allowable Uniform Loads are determined by solving the bending, deflection and shear equations for the least value.
- Dead weight of the member has been included in determining the Allowable Uniform Loads.
- Allowable Uniform Loads are based on the compression flange continuous braced by sheathing.
- End reactions must not exceed, without web stiffeners, the values shown in the Allowable Web Crippling Tables.
- Members marked with \* require web stiffeners; the (h/t) web height to thickness ratios exceed 200 and are less than 260. See Web Stiffener Details.
- Values are based on members with standard punchouts. If punchouts occur at reactions or concentrated loads web stiffeners are required.
- Minimum Allowable Uniform Loads are limited to 20 plf.

## Design Example 1:

Customer wants to know how far he can span using a 800S200-54 (50ksi) as a roof purlin.

### Information required Roof Design Loads:

Deflection Criteria:	L/180	This deflection is adequate for a metal building roof purlin.
Roof Live Load/Snow Load =	25 psf	
Roof Dead Load =	5 psf	
Total Dead + Live/Snow Load =	<u>30 psf (lbs/ft<sup>2</sup>)</u>	
Purlin Spacing =	2 ft on center	
Total Uniform Load = (30 lbs/ft <sup>2</sup> )*2ft=	60 lbs/ft	

From Table 9A L/180: 800S200-054 (50ksi) @ 20 feet--Allowable Uniform Load = 66 lbs/ft > 60 lbs/ft

Answer: Maximum span for a 800S200-054 (50ksi) roof purlin is 20 ft  
Deflection L/180:  $L=20$  ft, Center span deflection =  $(20 \text{ ft} \times 12 \text{ in/ft})/180 = 1.33$  inches

### Additional design considerations:

Roof purlins require bridging to support the bottom flange for wind uplift loading conditions. Bridging is full depth blocking and the maximum spacing is 8 feet. For the 20 foot span purlin this would require two rows of bridging spaced at 6'-8".

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## Design Example 2:

Customer want a floor joist member to span 18 feet

### Information required Floor Design Loads:

Deflection Criteria:	Total Load =	L/360
Floor Live Load =	40 psf	
Floor Dead Load =	15 psf	
Total Dead + Live Load =	<u>55 psf (lbs/ft<sup>2</sup>)</u>	
Joist Spacing =	16 in O.C.	

From Table 9C L/360: 1000S200-054 (50ksi) @ 18 feet--Allowable Uniform Load = 76 lbs/ft > 73 lbs/ft

Answer: 1000S200-054 (50ksi) Floor Joist will span 18 ft with total load deflection of L/360  
Deflection L/360:  $L=18$  ft, Center span deflection =  $(18 \text{ ft} \times 12 \text{ in/ft})/360 = 0.60$  inches

### Additional design considerations:

Web crippling need to be checked. This involves some hand calculation and knowing the bearing width of the supports. Assume the floor joists are supported by a 3.625" stud load-bearing wall.

Calculations: Reaction  $R=w \times L/2$  where  $w=73$  lbs/ft and  $L=18$  feet.  
 $R=(0.073 \text{ k/ft} \times 18 \text{ ft})/2 = 0.657$  kips < 0.851 kips OK

From Web Crippling Table the Allowable Web Crippling Load is 0.851 kips > 0.657 kips therefore Web Stiffeners are not required.



## Verification Calculations for Table 9A

**Member:** **1000 S162-68 (50 ksi)**

Maxo = **63.698** k-in  
 Ieff = **12.0220** in<sup>4</sup>  
 Vay = **3.345** kips  
 Wt = **3.331** lbs/ft (plf)  
 Deflection=  $\Delta=L/$  **180**  
 E=  $29.5 \times 10^6$  psi

**Member:** **Span = 6 ft**

Solve for Uniform Load w, plf (pounds per linear foot)

Bending:  $\text{Maxo}=w*L^2/8 \gg$   $w = \text{Maxo}*8/L^2 - Wt =$  **w= 1176 plf**  
 Deflection:  $\Delta=L/180=5*w*L^4/(384*E*I_{xe}) \gg$   $w = (384*E*I_{xe})/(5*L^3*180) - Wt =$  **w= 4862 plf**  
 Shear:  $V_{ay}=w*L/2 \gg$   $w=2*V_{ay}/L - Wt=$  **w= 1112 plf Controls**

**Member:** **Span = 14 ft**

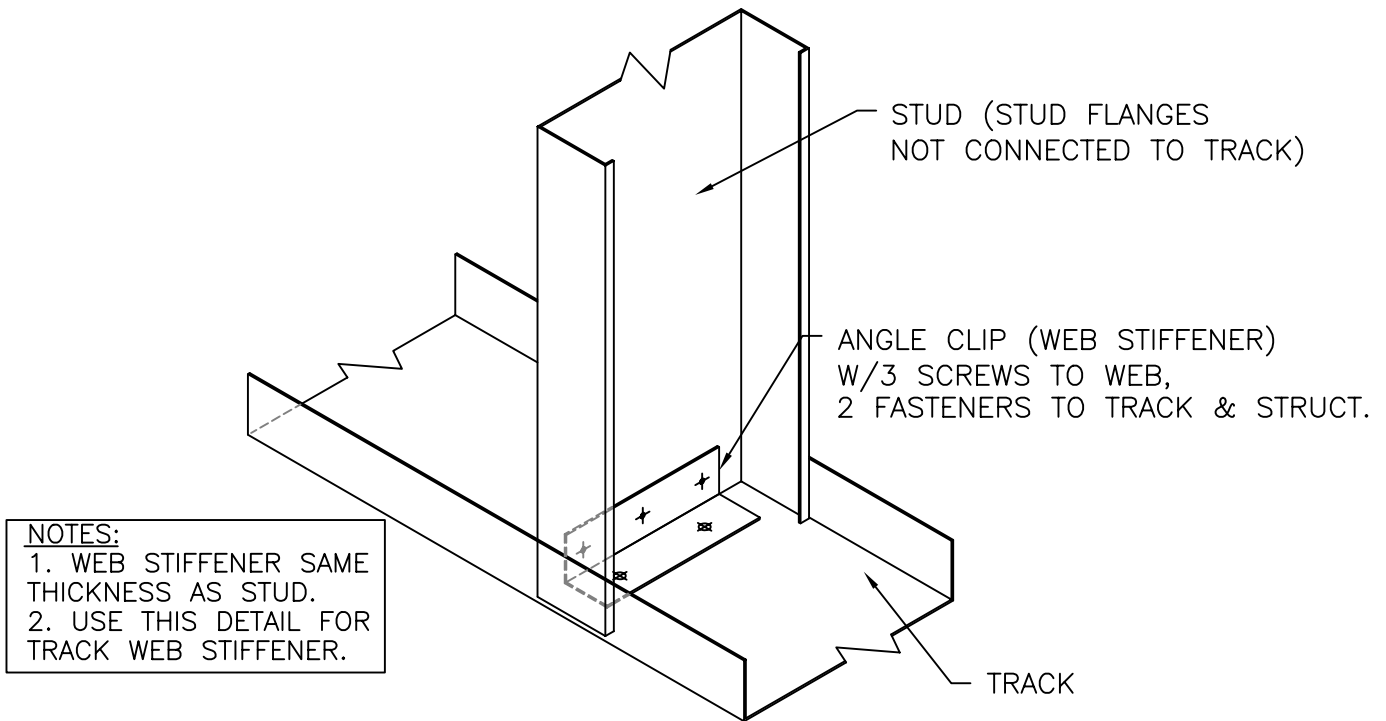
Solve for Uniform Load w, plf (pounds per linear foot)

Bending:  $\text{Maxo}=w*L^2/8 \gg$   $w = \text{Maxo}*8/L^2 - Wt =$  **w= 213 plf Controls**  
 Deflection:  $\Delta=L/180=5*w*L^4/(384*E*I_{xe}) \gg$   $w = (384*E*I_{xe})/(5*L^3*180) - Wt =$  **w= 380 plf**  
 Shear:  $V_{ay}=w*L/2 \gg$   $w=2*V_{ay}/L - Wt=$  **w= 475 plf**

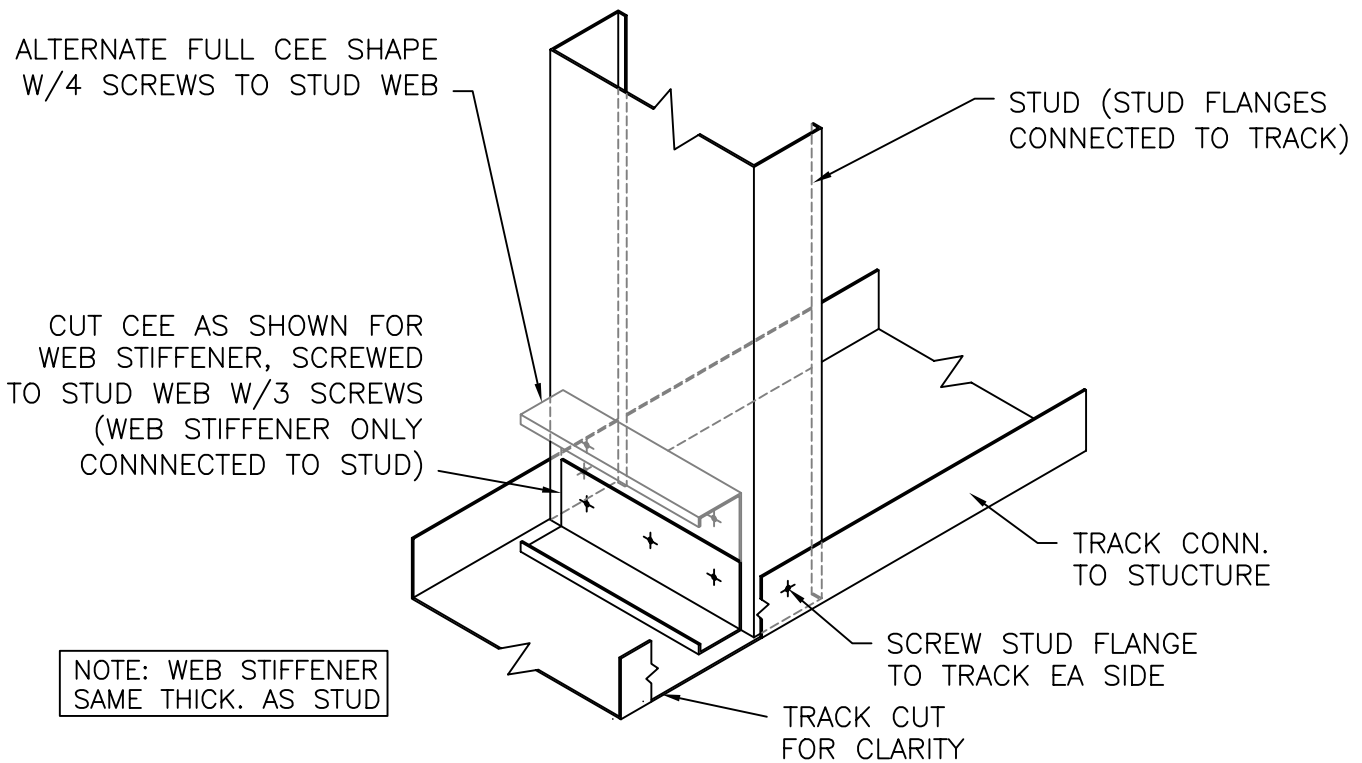
**Member:** **Span = 26 ft**

Solve for Uniform Load w, plf (pounds per linear foot)

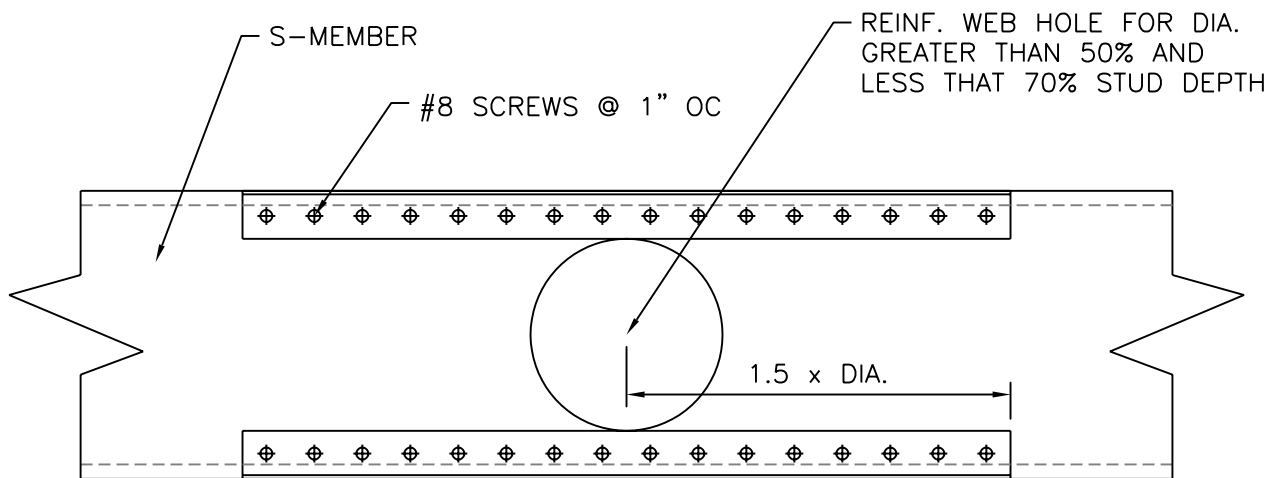
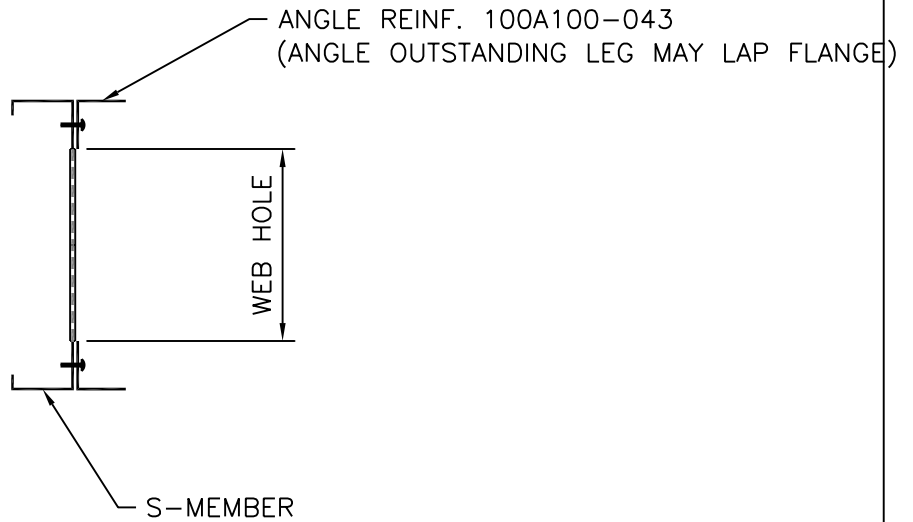
Bending:  $\text{Maxo}=w*L^2/8 \gg$   $w = \text{Maxo}*8/L^2 - Wt =$  **w= 59 plf**  
 Deflection:  $\Delta=L/180=5*w*L^4/(384*E*I_{xe}) \gg$   $w = (384*E*I_{xe})/(5*L^3*180) - Wt =$  **w= 56 plf Controls**  
 Shear:  $V_{ay}=w*L/2 \gg$   $w=2*V_{ay}/L - Wt=$  **w= 254 plf**



DETAIL A (Angle Clip Web Stiffener)



DETAIL A (Cee or Cut Cee Web Stiffener)



RECOMMENDED WEB HOLE REINFORCING DETAIL

NOTES

1. WEB REINFORCING IS NOT REQUIRED FOR WEB HOLES UP TO 50% OF THE MEMBER DEPTH.
2. WEB HOLES SHALL NOT BE LOCATED WITHIN 10 INCHES OF STANDARD HOLE PUNCHOUTS. PUNCHOUTS SHALL BE REINFORCED WITH A PLATE IF THIS OCCURS.
3. WEB HOLES SHOULD BE LOCATED AT CENTER OF WEB AND THE EDGE OF THE HOLE NO CLOSER THAT 12 INCHES FROM ENDS.
4. WEB HOLES SPACING MINIMUM OF 3 TIMES DIAMETER CL TO CL.

WEB HOLE REINFORCING DETAIL

DATE: 1-13-2011

SHEET: SK-1

TABLE 10--Limiting Spans for Single Span Joists (ft)

Member Identification	Member Weight Wt/sf	Spc oc in	Design Loads, PSF (Pound per Square Foot), Total Load Deflection Limits =L/ 360																													
			DL 10	LL 30	TL 40	DL 15	LL 40	TL 55	DL 15	LL 50	TL 65	DL 15	LL 70	TL 85	DL 15	LL 100	TL 115	DL 15	LL 125	TL 140	DL 45	LL 100	TL 145	DL 45	LL 125	TL 170						
600 S162-043	1.519	12	13.46	12.14	11.50	10.54	9.54	8.84	8.69	8.03																						
	1.140	16	12.27	11.06	10.47	9.59	8.46	7.67	7.54	6.97																						
	0.760	24	10.75	9.68	9.16	8.03	6.92	6.27	6.16	5.69																						
600 S162-054 (50ksi)	1.892	12	14.40	13.00	12.32	11.29	10.23	9.59	9.48	8.99																						
	1.419	16	13.13	11.85	11.22	10.28	9.30	8.72	8.62	8.18																						
	0.946	24	11.51	10.38	9.82	8.99	8.14	7.63	7.54	7.15																						
600 S162-068 (50ksi)	2.361	12	15.39	13.91	13.19	12.09	10.96	10.28	10.16	9.64																						
	1.771	16	14.05	12.68	12.02	11.01	9.97	9.35	9.24	8.77																						
	1.181	24	12.33	11.12	10.53	9.64	8.73	8.18	8.08	7.67																						
600 S162-097 (50ksi)	3.338	12	17.03	15.42	14.63	13.43	12.18	11.43	11.30	10.73																						
	2.504	16	15.57	14.08	13.35	12.24	11.10	10.41	10.29	9.76																						
	1.669	24	13.70	12.36	11.71	10.73	9.72	9.11	9.00	8.54																						
600 S162-118 (50ksi)	4.048	12	17.97	16.30	15.47	14.21	12.90	12.11	11.97	11.37																						
	3.036	16	16.45	14.89	14.12	12.96	11.75	11.03	10.90	10.35																						
	2.024	24	14.49	13.09	12.40	11.37	10.30	9.65	9.54	9.06																						
600 S200-043	1.634	12	14.00	12.64	11.97	10.96	9.44	8.57	8.42	7.79																						
	1.226	16	12.76	11.51	10.85	9.51	8.19	7.43	7.30	6.75																						
	0.817	24	11.19	9.65	8.89	7.79	6.70	6.08	5.97	5.52																						
600 S200-054 (50ksi)	2.036	12	14.98	13.53	12.83	11.76	10.65	9.99	9.87	9.37																						
	1.527	16	13.67	12.33	11.68	10.70	9.69	9.08	8.98	8.52																						
	1.018	24	11.99	10.81	10.23	9.37	8.48	7.85	7.74	7.42																						
600 S200-068 (50ksi)	2.567	12	16.08	14.54	13.78	12.64	11.46	10.62	10.52	10.08																						
	1.925	16	14.68	13.26	12.56	11.51	10.43	9.78	9.67	9.17																						
	1.284	24	12.89	11.63	11.01	10.08	9.13	8.55	8.46	8.02																						
600 S200-097 (50ksi)	3.660	12	17.83	16.16	15.33	14.08	12.78	11.99	11.85	11.26																						
	2.745	16	16.32	14.76	14.00	12.84	11.64	10.92	10.79	10.24																						
	1.830	24	14.36	12.96	12.28	11.26	10.20	9.56	9.45	8.96																						
600 S200-118 (50ksi)	4.466	12	18.85	17.11	16.24	14.93	13.56	12.73	12.58	11.95																						
	3.350	16	17.27	15.64	14.84	13.62	12.36	11.59	11.46	10.88																						
	2.233	24	15.22	13.75	13.03	11.95	10.83	10.15	10.04	9.53																						

**TABLE 10--Limiting Spans for Single Span Joists (ft)**

Member Identification	Member Weight Wt/sf	Spc oc in	Design Loads, PSF (Pound per Square Foot), Total Load Deflection Limits =L/ 360																									
			DL		LL		TL		DL		LL		TL		DL		LL		TL		DL		LL		TL			
			10	30	40	15	40	55	15	15	50	65	85	15	15	85	15	100	115	125	140	45	100	145	45	125	170	
600 S250-043	1.788	12	14.58	13.16	12.47	11.20	9.65	8.76	8.61	7.96	7.60	7.47	6.90	13.29	11.99	11.09	9.72	8.38	7.60	7.47	6.90	11.53	9.87	9.09	7.96	6.85	6.11	5.64
	2.240	12	15.56	14.06	13.32	12.22	11.07	10.38	10.26	9.74	9.44	9.33	8.86	14.20	12.82	12.14	11.12	10.07	9.44	9.33	8.86	12.46	11.23	10.64	9.74	8.82	8.17	7.64
	2.834	12	16.87	15.26	14.47	13.28	12.04	11.29	10.60	10.16	9.64	15.41	13.93	13.20	12.10	10.96	10.28	10.16	9.64	13.54	12.22	11.57	10.60	9.60	8.89	8.43		
600 S250-054 (50ksi)	4.061	12	18.74	17.00	16.13	14.82	13.45	12.63	12.48	11.85	17.16	15.53	14.73	13.52	12.26	11.50	11.37	10.79	15.11	13.65	12.93	11.85	10.74	10.07	9.95	9.45		
	4.889	12	19.73	17.92	17.02	15.65	14.22	13.35	13.20	12.54	18.09	16.39	15.55	14.28	12.96	12.16	12.02	11.42	15.95	14.42	13.67	12.54	11.36	10.65	10.53	10.00		
	2.444	24	15.95	14.42	13.67	12.53	11.36	10.65	10.53	10.00	15.95	14.42	13.67	12.53	11.36	10.65	10.53	10.00	14.56	13.15	12.46	11.42	10.34	9.69	9.58	9.09		
600 S300-054 (50ksi)	1.836	16	14.56	13.15	12.46	11.42	10.34	9.69	9.58	9.09	12.78	11.53	10.91	10.00	9.05	8.48	8.38	7.83	17.48	15.83	15.01	13.78	12.50	11.72	11.59	11.00		
	2.325	16	15.98	14.45	13.69	12.55	11.38	10.67	10.55	10.01	14.05	12.68	12.01	11.00	9.96	9.34	9.23	8.76	17.48	15.83	15.01	13.78	12.50	11.72	11.59	11.00		
	1.550	24	14.05	12.68	12.01	11.00	9.96	9.34	9.23	8.76	14.05	12.68	12.01	11.00	9.96	9.34	9.23	8.76	19.49	17.69	16.79	15.43	14.01	13.15	13.01	12.35		
600 S300-068 (50ksi)	4.407	12	19.49	17.69	16.79	15.43	14.01	13.15	13.01	12.35	17.85	16.17	15.34	14.08	12.77	11.98	11.85	11.25	15.73	14.22	13.47	12.35	11.19	10.49	10.37	9.85		
	2.203	24	15.73	14.22	13.47	12.35	11.19	10.49	10.37	9.85	20.52	18.65	17.72	16.30	14.82	13.91	13.76	13.07	18.83	17.07	16.21	14.89	13.51	12.68	12.54	11.91		
	2.655	24	16.62	15.03	14.25	13.07	11.85	11.11	10.98	10.43	16.62	15.03	14.25	13.07	11.85	11.11	10.98	10.43	16.81	15.21	14.42	13.23	11.99	11.25	11.12	10.55		
600 S300-097 (50ksi)	2.729	12	16.81	15.21	14.42	13.23	11.99	11.25	11.12	10.55	2.047	16	15.36	13.87	13.15	12.05	10.92	10.12	9.60	15.36	13.87	13.15	12.05	10.92	10.24	10.12	9.60	
	2.047	16	15.36	13.87	13.15	12.05	10.92	10.12	9.60	1.364	24	13.49	12.17	11.52	10.55	9.56	8.85	8.40	13.49	12.17	11.52	10.55	9.56	8.96	8.85	8.40		
	1.364	24	13.49	12.17	11.52	10.55	9.56	8.85	8.40																			

**TABLE 10--Limiting Spans for Single Span Joists (ft)**

Member Identification	Member Weight		Spc oc in	Design Loads, PSF (Pound per Square Foot), Total Load Deflection Limits =L/ 360																							
	Wt/sf	Wt/lf		DL		TL		DL		TL		DL		TL		DL		TL		DL		TL		DL		TL	
				10	30	40	15	40	55	15	50	65	15	70	85	15	100	115	15	125	140	15	145	15	160	175	15
600 S350-068 (50ksi)	3.411	18.05	12	16.35	15.51	14.24	12.92	11.98	11.38																		
	2.558	16.51	16	14.93	14.15	12.98	11.77	10.91	10.35																		
	1.705	14.52	24	13.11	12.42	11.38	10.30	9.55	9.06																		
600 S350-097 (50ksi)	4.787	20.15	12	18.30	17.38	15.98	14.52	13.47	12.80																		
	3.590	18.47	16	16.74	15.88	14.58	13.23	12.27	11.65																		
	2.394	16.29	24	14.72	13.96	12.80	11.60	10.75	10.20																		
600 S350-118 (50ksi)	5.775	21.28	12	19.36	18.40	16.94	15.40	14.30	13.59																		
	4.332	19.54	16	17.73	16.83	15.47	14.05	13.03	12.38																		
	2.888	17.26	24	15.62	14.81	13.59	12.32	11.42	10.84																		
800 S162-043	1.826	16.76	12	15.13	14.05	12.32	10.62	9.64	8.76																		
	1.370	15.28	16	13.25	12.21	10.70	9.22	8.36	7.60																		
	0.913	12.69	24	10.86	10.00	8.76	7.54	6.72	6.15																		
800 S162-054 (50ksi)	2.276	17.96	12	16.23	15.39	14.11	12.78	11.85	11.25																		
	1.707	16.39	16	14.80	14.02	12.85	11.63	10.78	10.23																		
	1.138	14.39	24	12.97	12.28	11.25	10.18	9.23	8.38																		
800 S162-068 (50ksi)	2.846	19.34	12	17.50	16.59	15.22	13.80	12.80	12.15																		
	2.135	17.67	16	15.96	15.13	13.87	12.57	11.65	11.05																		
	1.423	15.52	24	14.00	13.26	12.15	11.00	10.31	9.67																		
800 S162-097 (50ksi)	4.030	21.43	12	19.43	18.44	16.95	15.38	14.43	13.55																		
	3.022	19.62	16	17.76	16.84	15.45	14.01	13.15	12.34																		
	2.015	17.27	24	15.60	14.78	13.55	12.28	11.51	10.80																		
800 S162-118 (50ksi)	4.893	22.62	12	20.55	19.52	17.95	16.31	15.31	14.38																		
	3.670	20.74	16	18.80	17.84	16.38	14.86	13.95	13.09																		
	2.446	18.29	24	16.54	15.68	14.38	13.03	12.22	11.46																		
800 S200-043	1.941	17.53	12	15.83	14.98	13.14	11.33	10.29	9.35																		
	1.456	15.99	16	14.12	13.02	11.41	9.83	8.92	8.11																		
	0.971	13.54	24	11.58	10.67	9.35	8.05	7.30	6.15																		
800 S200-054 (50ksi)	2.421	18.76	12	16.96	16.07	14.74	13.36	12.53	11.75																		
	1.816	17.12	16	15.46	14.65	13.42	12.16	11.40	10.69																		
	1.210	15.03	24	13.55	12.83	11.75	10.64	9.84	8.94																		

TABLE 10--Limiting Spans for Single Span Joists (ft)

Member Identification	Member Weight Wt/sf	Spc oc in	Design Loads, PSF (Pound per Square Foot), Total Load Deflection Limits =L/ 360																							
			DL		LL		TL		DL		LL		TL		DL		LL		TL		DL		LL		TL	
			10	30	40	15	40	55	15	40	55	15	40	55	15	40	55	15	40	55	15	40	55	15	40	55
800 S200-068 (50ksi)	3.052 2.289 1.526	12 16 24	20.13 18.40 16.17	18.22 16.63 14.59	17.28 15.76 13.82	15.86 14.45 12.66	15 70	85	15	100	115	13.49	13.34	15	125	140	15	140	145	45	125	170	12.66	11.52	10.08	
800 S200-097 (50ksi)	4.351 3.263 2.176	12 16 24	22.34 20.46 18.03	20.27 18.53 16.29	19.24 17.58 15.44	17.69 16.13 14.15	15	100	115	13.49	13.34	15	125	140	15	140	145	45	125	170	12.66	11.52	10.08	14.15		
800 S200-118 (50ksi)	5.311 3.983 2.655	12 16 24	23.62 21.67 19.13	21.47 19.65 17.30	20.40 18.65 16.40	18.77 17.14 15.05	15	100	115	13.49	13.34	15	125	140	15	140	145	45	125	170	12.66	11.52	10.08	15.05		
800 S250-043	2.094 1.571 1.047	12 16 24	18.20 16.50 13.56	16.26 14.15 11.60	15.00 13.04 10.69	13.16 11.44 9.37	15	100	115	13.49	13.34	15	125	140	15	140	145	45	125	170	12.66	11.52	10.08	9.37		
800 S250-054 (50ksi)	2.625 1.969 1.312	12 16 24	19.45 17.76 15.60	17.59 16.04 14.07	16.68 15.20 13.32	15.30 13.93 12.20	15	100	115	13.49	13.34	15	125	140	15	140	145	45	125	170	12.66	11.52	10.08	12.20		
800 S250-068 (50ksi)	3.319 2.489 1.659	12 16 24	21.01 19.22 16.90	19.03 17.37 15.25	18.05 16.47 14.45	16.57 15.10 13.24	15	100	115	13.49	13.34	15	125	140	15	140	145	45	125	170	12.66	11.52	10.08	13.24		
800 S250-097 (50ksi)	4.752 3.564 2.376	12 16 24	23.37 21.43 18.89	21.22 19.41 17.08	20.16 18.42 16.18	18.53 16.91 14.84	15	100	115	13.49	13.34	15	125	140	15	140	145	45	125	170	12.66	11.52	10.08	14.84		
800 S250-118 (50ksi)	5.733 4.300 2.867	12 16 24	24.61 22.59 19.96	22.39 20.50 18.06	21.28 19.46 17.12	19.58 17.89 15.71	15	100	115	13.49	13.34	15	125	140	15	140	145	45	125	170	12.66	11.52	10.08	15.71		
800 S300-054 (50ksi)	2.833 2.124 1.416	12 16 24	19.92 18.20 15.99	18.02 16.44 14.42	17.09 15.58 13.66	15.68 14.28 12.51	15	100	115	13.49	13.34	15	125	140	15	140	145	45	125	170	12.66	11.52	10.08	13.66		
800 S300-068 (50ksi)	3.585 2.689 1.793	12 16 24	21.71 19.86 17.48	19.67 17.97 15.78	18.67 17.03 14.95	17.14 15.63 13.70	15	100	115	13.49	13.34	15	125	140	15	140	145	45	125	170	12.66	11.52	10.08	14.95		

**TABLE 10--Limiting Spans for Single Span Joists (ft)**

Member Identification	Member Weight Wt/sf	Member Spc oc in	Design Loads, PSF (Pound per Square Foot), Total Load Deflection Limits =L/ 360																																																																																																																																																																																																																																																																																																					
			DL		LL		TL		DL		LL		TL		DL		LL		TL																																																																																																																																																																																																																																																																																					
			10	30	40	15	40	55	15	15	50	65	85	15	15	100	115	15	125	140	45	100	145	45	125	170																																																																																																																																																																																																																																																																														
800 S300-097 (50ksi)	5.098	12	24.22	22.01	20.91	19.23	17.47	16.41	16.22	15.41	15	70	85	15	100	115	15	125	140	45	100	145	45	125	170																																																																																																																																																																																																																																																																															
	3.824	16	22.22	20.14	19.11	17.55	15.93	14.78	14.03	2.549	24	19.60	17.72	16.80	15.41	13.97	13.10	12.95	12.29	800 S300-118 (50ksi)	6.156	12	25.50	23.22	22.08	20.33	18.49	17.37	17.17	16.32	4.617	16	23.43	21.28	20.20	18.57	16.87	15.83	15.66	14.87	3.078	24	20.71	18.75	17.78	16.32	14.80	13.88	13.72	13.03	800 S350-054 (50ksi)	3.114	12	20.94	18.96	17.98	16.50	14.96	14.04	13.88	13.17	2.335	16	19.14	17.30	16.40	15.04	13.63	12.63	11.99	11.99	1.557	24	16.82	15.18	14.38	13.17	11.93	10.89	10.71	9.90	800 S350-068 (50ksi)	3.896	12	22.36	20.27	19.24	17.67	16.04	14.88	14.13	2.922	16	20.46	18.52	17.56	16.11	14.61	13.55	12.86	12.86	1.948	24	18.01	16.27	15.42	14.13	12.80	12.00	11.86	11.26	800 S350-097 (50ksi)	5.479	12	24.96	22.69	21.57	19.84	18.04	16.94	16.75	15.91	4.109	16	22.91	20.78	19.72	18.12	16.45	15.44	15.26	14.49	2.739	24	20.22	18.29	17.34	15.91	14.43	13.53	13.37	12.70	800 S350-118 (50ksi)	6.620	12	26.37	24.03	22.86	21.06	19.16	18.00	16.92	16.92	4.965	16	24.25	22.03	20.93	19.25	17.49	16.42	16.23	15.42	3.310	24	21.45	19.43	18.43	16.92	15.35	14.40	14.23	13.51	1000 S162-054 (50ksi)	2.661	12	21.28	19.25	18.25	16.74	15.18	14.23	14.07	13.30	1.996	16	19.44	17.56	16.64	15.25	13.82	12.70	12.49	11.54	1.331	24	17.07	15.40	14.58	13.30	11.46	10.40	10.22	9.44	1000 S162-068 (50ksi)	3.331	12	22.97	20.81	19.74	18.12	16.44	15.42	15.24	14.47	2.498	16	21.01	18.99	18.01	16.51	14.97	14.04	13.88	13.17	1.665	24	18.47	16.67	15.80	14.47	13.11	12.24	12.03	11.12	1000 S162-097 (50ksi)	4.721	12	25.66	23.30	22.13	20.35	18.48	17.35	16.29	16.29	3.541	16	23.53	21.31	20.22	18.57	16.85	15.81	15.63	14.84	2.361	24	20.74	18.75	17.77	16.29	14.77	13.85	13.69	12.99	1000 S162-118 (50ksi)	5.737	12	27.09	24.65	23.43	21.56	19.60	18.41	18.21	17.30	4.303	16	24.88	22.57	21.43	19.69	17.88	16.78	16.59	15.76	2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54
800 S300-118 (50ksi)	6.156	12	25.50	23.22	22.08	20.33	18.49	17.37	17.17	16.32	4.617	16	23.43	21.28	20.20	18.57	16.87	15.83	15.66		14.87	3.078	24	20.71	18.75	17.78	16.32	14.80	13.88	13.72	13.03	800 S350-054 (50ksi)	3.114	12	20.94	18.96	17.98	16.50	14.96	14.04	13.88	13.17	2.335	16	19.14	17.30	16.40	15.04	13.63	12.63		11.99	11.99	1.557	24	16.82	15.18	14.38	13.17	11.93	10.89	10.71	9.90	800 S350-068 (50ksi)	3.896	12	22.36	20.27	19.24	17.67	16.04	14.88	14.13	2.922	16	20.46	18.52	17.56	16.11	14.61	13.55		12.86	12.86	1.948	24	18.01	16.27	15.42	14.13	12.80	12.00	11.86	11.26	800 S350-097 (50ksi)	5.479	12	24.96	22.69	21.57	19.84	18.04	16.94	16.75	15.91	4.109	16	22.91	20.78	19.72	18.12		16.45	15.44	15.26	14.49	2.739	24	20.22	18.29	17.34	15.91	14.43	13.53	13.37	12.70	800 S350-118 (50ksi)	6.620	12	26.37	24.03	22.86	21.06	19.16	18.00	16.92	16.92	4.965	16	24.25	22.03	20.93		19.25	17.49	16.42	16.23	15.42	3.310	24	21.45	19.43	18.43	16.92	15.35	14.40	14.23	13.51	1000 S162-054 (50ksi)	2.661	12	21.28	19.25	18.25	16.74	15.18	14.23	14.07	13.30	1.996	16	19.44	17.56		16.64	15.25	13.82	12.70	12.49	11.54	1.331	24	17.07	15.40	14.58	13.30	11.46	10.40	10.22	9.44	1000 S162-068 (50ksi)	3.331	12	22.97	20.81	19.74	18.12	16.44	15.42	15.24	14.47	2.498	16	21.01		18.99	18.01	16.51	14.97	14.04	13.88	13.17	1.665	24	18.47	16.67	15.80	14.47	13.11	12.24	12.03	11.12	1000 S162-097 (50ksi)	4.721	12	25.66	23.30	22.13	20.35	18.48	17.35	16.29	16.29	3.541	16		23.53	21.31	20.22	18.57	16.85	15.81	15.63	14.84	2.361	24	20.74	18.75	17.77	16.29	14.77	13.85	13.69	12.99	1000 S162-118 (50ksi)	5.737	12	27.09	24.65	23.43	21.56	19.60	18.41	18.21	17.30	4.303		16	24.88	22.57	21.43	19.69	17.88	16.78	16.59	15.76	2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54	13.80										
	3.078	24	20.71	18.75	17.78	16.32	14.80	13.88	13.72	13.03	800 S350-054 (50ksi)	3.114	12	20.94	18.96	17.98	16.50	14.96	14.04	13.88	13.17	2.335	16	19.14	17.30	16.40	15.04	13.63	12.63	11.99	11.99		1.557	24	16.82	15.18	14.38	13.17	11.93	10.89	10.71	9.90	800 S350-068 (50ksi)	3.896	12	22.36	20.27	19.24	17.67	16.04	14.88	14.13	2.922	16	20.46	18.52	17.56	16.11	14.61	13.55	12.86	12.86	1.948		24	18.01	16.27	15.42	14.13	12.80	12.00	11.86	11.26	800 S350-097 (50ksi)	5.479	12	24.96	22.69	21.57	19.84	18.04	16.94	16.75	15.91	4.109	16	22.91	20.78	19.72	18.12	16.45	15.44	15.26	14.49		2.739	24	20.22	18.29	17.34	15.91	14.43	13.53	13.37	12.70	800 S350-118 (50ksi)	6.620	12	26.37	24.03	22.86	21.06	19.16	18.00	16.92	16.92	4.965	16	24.25	22.03	20.93	19.25	17.49	16.42	16.23	15.42		3.310	24	21.45	19.43	18.43	16.92	15.35	14.40	14.23	13.51	1000 S162-054 (50ksi)	2.661	12	21.28	19.25	18.25	16.74	15.18	14.23	14.07	13.30	1.996	16	19.44	17.56	16.64	15.25	13.82	12.70	12.49	11.54		1.331	24	17.07	15.40	14.58	13.30	11.46	10.40	10.22	9.44	1000 S162-068 (50ksi)	3.331	12	22.97	20.81	19.74	18.12	16.44	15.42	15.24	14.47	2.498	16	21.01	18.99	18.01	16.51	14.97	14.04	13.88	13.17		1.665	24	18.47	16.67	15.80	14.47	13.11	12.24	12.03	11.12	1000 S162-097 (50ksi)	4.721	12	25.66	23.30	22.13	20.35	18.48	17.35	16.29	16.29	3.541	16	23.53	21.31	20.22	18.57	16.85	15.81	15.63	14.84		2.361	24	20.74	18.75	17.77	16.29	14.77	13.85	13.69	12.99	1000 S162-118 (50ksi)	5.737	12	27.09	24.65	23.43	21.56	19.60	18.41	18.21	17.30	4.303	16	24.88	22.57	21.43	19.69	17.88	16.78	16.59	15.76		2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54	13.80																															
800 S350-054 (50ksi)	3.114	12	20.94	18.96	17.98	16.50	14.96	14.04	13.88	13.17		2.335	16	19.14	17.30	16.40	15.04	13.63	12.63	11.99	11.99	1.557	24	16.82	15.18	14.38	13.17	11.93	10.89	10.71	9.90	800 S350-068 (50ksi)	3.896	12	22.36	20.27	19.24	17.67	16.04	14.88	14.13	2.922		16	20.46	18.52	17.56	16.11	14.61	13.55	12.86	12.86	1.948	24	18.01	16.27	15.42	14.13	12.80	12.00	11.86	11.26	800 S350-097 (50ksi)	5.479	12	24.96	22.69	21.57	19.84	18.04	16.94	16.75	15.91		4.109	16	22.91	20.78	19.72	18.12	16.45	15.44	15.26	14.49	2.739	24	20.22	18.29	17.34	15.91	14.43	13.53	13.37	12.70	800 S350-118 (50ksi)	6.620	12	26.37	24.03	22.86	21.06	19.16	18.00	16.92	16.92		4.965	16	24.25	22.03	20.93	19.25	17.49	16.42	16.23	15.42	3.310	24	21.45	19.43	18.43	16.92	15.35	14.40	14.23	13.51	1000 S162-054 (50ksi)	2.661	12	21.28	19.25	18.25	16.74	15.18	14.23	14.07	13.30		1.996	16	19.44	17.56	16.64	15.25	13.82	12.70	12.49	11.54	1.331	24	17.07	15.40	14.58	13.30	11.46	10.40	10.22	9.44	1000 S162-068 (50ksi)	3.331	12	22.97	20.81	19.74	18.12	16.44	15.42	15.24	14.47		2.498	16	21.01	18.99	18.01	16.51	14.97	14.04	13.88	13.17	1.665	24	18.47	16.67	15.80	14.47	13.11	12.24	12.03	11.12	1000 S162-097 (50ksi)	4.721	12	25.66	23.30	22.13	20.35	18.48	17.35	16.29	16.29		3.541	16	23.53	21.31	20.22	18.57	16.85	15.81	15.63	14.84	2.361	24	20.74	18.75	17.77	16.29	14.77	13.85	13.69	12.99	1000 S162-118 (50ksi)	5.737	12	27.09	24.65	23.43	21.56	19.60	18.41	18.21	17.30		4.303	16	24.88	22.57	21.43	19.69	17.88	16.78	16.59	15.76	2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54	13.80																																										
	1.557	24	16.82	15.18	14.38	13.17	11.93	10.89	10.71	9.90	800 S350-068 (50ksi)	3.896	12	22.36	20.27	19.24	17.67	16.04	14.88	14.13	2.922	16	20.46	18.52	17.56	16.11	14.61	13.55	12.86	12.86	1.948		24	18.01	16.27	15.42	14.13	12.80	12.00	11.86	11.26	800 S350-097 (50ksi)	5.479	12	24.96	22.69	21.57	19.84	18.04	16.94	16.75	15.91	4.109	16	22.91	20.78	19.72	18.12	16.45	15.44	15.26	14.49		2.739	24	20.22	18.29	17.34	15.91	14.43	13.53	13.37	12.70	800 S350-118 (50ksi)	6.620	12	26.37	24.03	22.86	21.06	19.16	18.00	16.92	16.92	4.965	16	24.25	22.03	20.93	19.25	17.49	16.42	16.23	15.42		3.310	24	21.45	19.43	18.43	16.92	15.35	14.40	14.23	13.51	1000 S162-054 (50ksi)	2.661	12	21.28	19.25	18.25	16.74	15.18	14.23	14.07	13.30	1.996	16	19.44	17.56	16.64	15.25	13.82	12.70	12.49	11.54		1.331	24	17.07	15.40	14.58	13.30	11.46	10.40	10.22	9.44	1000 S162-068 (50ksi)	3.331	12	22.97	20.81	19.74	18.12	16.44	15.42	15.24	14.47	2.498	16	21.01	18.99	18.01	16.51	14.97	14.04	13.88	13.17		1.665	24	18.47	16.67	15.80	14.47	13.11	12.24	12.03	11.12	1000 S162-097 (50ksi)	4.721	12	25.66	23.30	22.13	20.35	18.48	17.35	16.29	16.29	3.541	16	23.53	21.31	20.22	18.57	16.85	15.81	15.63	14.84		2.361	24	20.74	18.75	17.77	16.29	14.77	13.85	13.69	12.99	1000 S162-118 (50ksi)	5.737	12	27.09	24.65	23.43	21.56	19.60	18.41	18.21	17.30	4.303	16	24.88	22.57	21.43	19.69	17.88	16.78	16.59	15.76		2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54	13.80																																																															
800 S350-068 (50ksi)	3.896	12	22.36	20.27	19.24	17.67	16.04	14.88	14.13	2.922		16	20.46	18.52	17.56	16.11	14.61	13.55	12.86	12.86	1.948	24	18.01	16.27	15.42	14.13	12.80	12.00	11.86	11.26	800 S350-097 (50ksi)	5.479	12	24.96	22.69	21.57	19.84	18.04	16.94	16.75	15.91		4.109	16	22.91	20.78	19.72	18.12	16.45	15.44	15.26	14.49	2.739	24	20.22	18.29	17.34	15.91	14.43	13.53	13.37	12.70	800 S350-118 (50ksi)	6.620	12	26.37	24.03	22.86	21.06	19.16	18.00	16.92	16.92		4.965	16	24.25	22.03	20.93	19.25	17.49	16.42	16.23	15.42	3.310	24	21.45	19.43	18.43	16.92	15.35	14.40	14.23	13.51	1000 S162-054 (50ksi)	2.661	12	21.28	19.25	18.25	16.74	15.18	14.23	14.07	13.30		1.996	16	19.44	17.56	16.64	15.25	13.82	12.70	12.49	11.54	1.331	24	17.07	15.40	14.58	13.30	11.46	10.40	10.22	9.44	1000 S162-068 (50ksi)	3.331	12	22.97	20.81	19.74	18.12	16.44	15.42	15.24	14.47		2.498	16	21.01	18.99	18.01	16.51	14.97	14.04	13.88	13.17	1.665	24	18.47	16.67	15.80	14.47	13.11	12.24	12.03	11.12	1000 S162-097 (50ksi)	4.721	12	25.66	23.30	22.13	20.35	18.48	17.35	16.29	16.29		3.541	16	23.53	21.31	20.22	18.57	16.85	15.81	15.63	14.84	2.361	24	20.74	18.75	17.77	16.29	14.77	13.85	13.69	12.99	1000 S162-118 (50ksi)	5.737	12	27.09	24.65	23.43	21.56	19.60	18.41	18.21	17.30		4.303	16	24.88	22.57	21.43	19.69	17.88	16.78	16.59	15.76	2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54	13.80																																																																										
	1.948	24	18.01	16.27	15.42	14.13	12.80	12.00	11.86	11.26	800 S350-097 (50ksi)	5.479	12	24.96	22.69	21.57	19.84	18.04	16.94	16.75	15.91	4.109	16	22.91	20.78	19.72	18.12	16.45	15.44	15.26		14.49	2.739	24	20.22	18.29	17.34	15.91	14.43	13.53	13.37	12.70	800 S350-118 (50ksi)	6.620	12	26.37	24.03	22.86	21.06	19.16	18.00	16.92	16.92	4.965	16	24.25	22.03	20.93	19.25	17.49	16.42	16.23		15.42	3.310	24	21.45	19.43	18.43	16.92	15.35	14.40	14.23	13.51	1000 S162-054 (50ksi)	2.661	12	21.28	19.25	18.25	16.74	15.18	14.23	14.07	13.30	1.996	16	19.44	17.56	16.64	15.25	13.82	12.70	12.49		11.54	1.331	24	17.07	15.40	14.58	13.30	11.46	10.40	10.22	9.44	1000 S162-068 (50ksi)	3.331	12	22.97	20.81	19.74	18.12	16.44	15.42	15.24	14.47	2.498	16	21.01	18.99	18.01	16.51	14.97	14.04	13.88		13.17	1.665	24	18.47	16.67	15.80	14.47	13.11	12.24	12.03	11.12	1000 S162-097 (50ksi)	4.721	12	25.66	23.30	22.13	20.35	18.48	17.35	16.29	16.29	3.541	16	23.53	21.31	20.22	18.57	16.85	15.81	15.63		14.84	2.361	24	20.74	18.75	17.77	16.29	14.77	13.85	13.69	12.99	1000 S162-118 (50ksi)	5.737	12	27.09	24.65	23.43	21.56	19.60	18.41	18.21	17.30	4.303	16	24.88	22.57	21.43	19.69	17.88	16.78	16.59		15.76	2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54	13.80																																																																																														
800 S350-097 (50ksi)	5.479	12	24.96	22.69	21.57	19.84	18.04	16.94	16.75	15.91		4.109	16	22.91	20.78	19.72	18.12	16.45	15.44	15.26	14.49	2.739	24	20.22	18.29	17.34	15.91	14.43	13.53	13.37	12.70	800 S350-118 (50ksi)	6.620	12	26.37	24.03	22.86	21.06	19.16	18.00	16.92	16.92		4.965	16	24.25	22.03	20.93	19.25	17.49	16.42	16.23	15.42	3.310	24	21.45	19.43	18.43	16.92	15.35	14.40	14.23	13.51	1000 S162-054 (50ksi)	2.661	12	21.28	19.25	18.25	16.74	15.18	14.23	14.07	13.30		1.996	16	19.44	17.56	16.64	15.25	13.82	12.70	12.49	11.54	1.331	24	17.07	15.40	14.58	13.30	11.46	10.40	10.22	9.44	1000 S162-068 (50ksi)	3.331	12	22.97	20.81	19.74	18.12	16.44	15.42	15.24	14.47		2.498	16	21.01	18.99	18.01	16.51	14.97	14.04	13.88	13.17	1.665	24	18.47	16.67	15.80	14.47	13.11	12.24	12.03	11.12	1000 S162-097 (50ksi)	4.721	12	25.66	23.30	22.13	20.35	18.48	17.35	16.29	16.29		3.541	16	23.53	21.31	20.22	18.57	16.85	15.81	15.63	14.84	2.361	24	20.74	18.75	17.77	16.29	14.77	13.85	13.69	12.99	1000 S162-118 (50ksi)	5.737	12	27.09	24.65	23.43	21.56	19.60	18.41	18.21	17.30		4.303	16	24.88	22.57	21.43	19.69	17.88	16.78	16.59	15.76	2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54	13.80																																																																																																									
	2.739	24	20.22	18.29	17.34	15.91	14.43	13.53	13.37	12.70	800 S350-118 (50ksi)	6.620	12	26.37	24.03	22.86	21.06	19.16	18.00	16.92	16.92	4.965	16	24.25	22.03	20.93	19.25	17.49	16.42	16.23	15.42		3.310	24	21.45	19.43	18.43	16.92	15.35	14.40	14.23	13.51	1000 S162-054 (50ksi)	2.661	12	21.28	19.25	18.25	16.74	15.18	14.23	14.07	13.30	1.996	16	19.44	17.56	16.64	15.25	13.82	12.70	12.49	11.54		1.331	24	17.07	15.40	14.58	13.30	11.46	10.40	10.22	9.44	1000 S162-068 (50ksi)	3.331	12	22.97	20.81	19.74	18.12	16.44	15.42	15.24	14.47	2.498	16	21.01	18.99	18.01	16.51	14.97	14.04	13.88	13.17		1.665	24	18.47	16.67	15.80	14.47	13.11	12.24	12.03	11.12	1000 S162-097 (50ksi)	4.721	12	25.66	23.30	22.13	20.35	18.48	17.35	16.29	16.29	3.541	16	23.53	21.31	20.22	18.57	16.85	15.81	15.63	14.84		2.361	24	20.74	18.75	17.77	16.29	14.77	13.85	13.69	12.99	1000 S162-118 (50ksi)	5.737	12	27.09	24.65	23.43	21.56	19.60	18.41	18.21	17.30	4.303	16	24.88	22.57	21.43	19.69	17.88	16.78	16.59	15.76		2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54	13.80																																																																																																																														
800 S350-118 (50ksi)	6.620	12	26.37	24.03	22.86	21.06	19.16	18.00	16.92	16.92		4.965	16	24.25	22.03	20.93	19.25	17.49	16.42	16.23	15.42	3.310	24	21.45	19.43	18.43	16.92	15.35	14.40	14.23	13.51	1000 S162-054 (50ksi)	2.661	12	21.28	19.25	18.25	16.74	15.18	14.23	14.07	13.30		1.996	16	19.44	17.56	16.64	15.25	13.82	12.70	12.49	11.54	1.331	24	17.07	15.40	14.58	13.30	11.46	10.40	10.22	9.44	1000 S162-068 (50ksi)	3.331	12	22.97	20.81	19.74	18.12	16.44	15.42	15.24	14.47		2.498	16	21.01	18.99	18.01	16.51	14.97	14.04	13.88	13.17	1.665	24	18.47	16.67	15.80	14.47	13.11	12.24	12.03	11.12	1000 S162-097 (50ksi)	4.721	12	25.66	23.30	22.13	20.35	18.48	17.35	16.29	16.29		3.541	16	23.53	21.31	20.22	18.57	16.85	15.81	15.63	14.84	2.361	24	20.74	18.75	17.77	16.29	14.77	13.85	13.69	12.99	1000 S162-118 (50ksi)	5.737	12	27.09	24.65	23.43	21.56	19.60	18.41	18.21	17.30		4.303	16	24.88	22.57	21.43	19.69	17.88	16.78	16.59	15.76	2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54	13.80																																																																																																																																									
	3.310	24	21.45	19.43	18.43	16.92	15.35	14.40	14.23	13.51	1000 S162-054 (50ksi)	2.661	12	21.28	19.25	18.25	16.74	15.18	14.23	14.07	13.30	1.996	16	19.44	17.56	16.64	15.25	13.82	12.70	12.49	11.54		1.331	24	17.07	15.40	14.58	13.30	11.46	10.40	10.22	9.44	1000 S162-068 (50ksi)	3.331	12	22.97	20.81	19.74	18.12	16.44	15.42	15.24	14.47	2.498	16	21.01	18.99	18.01	16.51	14.97	14.04	13.88	13.17		1.665	24	18.47	16.67	15.80	14.47	13.11	12.24	12.03	11.12	1000 S162-097 (50ksi)	4.721	12	25.66	23.30	22.13	20.35	18.48	17.35	16.29	16.29	3.541	16	23.53	21.31	20.22	18.57	16.85	15.81	15.63	14.84		2.361	24	20.74	18.75	17.77	16.29	14.77	13.85	13.69	12.99	1000 S162-118 (50ksi)	5.737	12	27.09	24.65	23.43	21.56	19.60	18.41	18.21	17.30	4.303	16	24.88	22.57	21.43	19.69	17.88	16.78	16.59	15.76		2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54	13.80																																																																																																																																																														
1000 S162-054 (50ksi)	2.661	12	21.28	19.25	18.25	16.74	15.18	14.23	14.07	13.30		1.996	16	19.44	17.56	16.64	15.25	13.82	12.70	12.49	11.54	1.331	24	17.07	15.40	14.58	13.30	11.46	10.40	10.22	9.44	1000 S162-068 (50ksi)	3.331	12	22.97	20.81	19.74	18.12	16.44	15.42	15.24	14.47		2.498	16	21.01	18.99	18.01	16.51	14.97	14.04	13.88	13.17	1.665	24	18.47	16.67	15.80	14.47	13.11	12.24	12.03	11.12	1000 S162-097 (50ksi)	4.721	12	25.66	23.30	22.13	20.35	18.48	17.35	16.29	16.29		3.541	16	23.53	21.31	20.22	18.57	16.85	15.81	15.63	14.84	2.361	24	20.74	18.75	17.77	16.29	14.77	13.85	13.69	12.99	1000 S162-118 (50ksi)	5.737	12	27.09	24.65	23.43	21.56	19.60	18.41	18.21	17.30		4.303	16	24.88	22.57	21.43	19.69	17.88	16.78	16.59	15.76	2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54	13.80																																																																																																																																																																									
	1.331	24	17.07	15.40	14.58	13.30	11.46	10.40	10.22	9.44	1000 S162-068 (50ksi)	3.331	12	22.97	20.81	19.74	18.12	16.44	15.42	15.24	14.47	2.498	16	21.01	18.99	18.01	16.51	14.97	14.04	13.88	13.17		1.665	24	18.47	16.67	15.80	14.47	13.11	12.24	12.03	11.12	1000 S162-097 (50ksi)	4.721	12	25.66	23.30	22.13	20.35	18.48	17.35	16.29	16.29	3.541	16	23.53	21.31	20.22	18.57	16.85	15.81	15.63	14.84		2.361	24	20.74	18.75	17.77	16.29	14.77	13.85	13.69	12.99	1000 S162-118 (50ksi)	5.737	12	27.09	24.65	23.43	21.56	19.60	18.41	18.21	17.30	4.303	16	24.88	22.57	21.43	19.69	17.88	16.78	16.59	15.76		2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54	13.80																																																																																																																																																																																														
1000 S162-068 (50ksi)	3.331	12	22.97	20.81	19.74	18.12	16.44	15.42	15.24	14.47		2.498	16	21.01	18.99	18.01	16.51	14.97	14.04	13.88	13.17	1.665	24	18.47	16.67	15.80	14.47	13.11	12.24	12.03	11.12	1000 S162-097 (50ksi)	4.721	12	25.66	23.30	22.13	20.35	18.48	17.35	16.29	16.29		3.541	16	23.53	21.31	20.22	18.57	16.85	15.81	15.63	14.84	2.361	24	20.74	18.75	17.77	16.29	14.77	13.85	13.69	12.99	1000 S162-118 (50ksi)	5.737	12	27.09	24.65	23.43	21.56	19.60	18.41	18.21	17.30		4.303	16	24.88	22.57	21.43	19.69	17.88	16.78	16.59	15.76	2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54	13.80																																																																																																																																																																																																									
	1.665	24	18.47	16.67	15.80	14.47	13.11	12.24	12.03	11.12	1000 S162-097 (50ksi)	4.721	12	25.66	23.30	22.13	20.35	18.48	17.35	16.29	16.29	3.541	16	23.53	21.31	20.22	18.57	16.85	15.81	15.63	14.84		2.361	24	20.74	18.75	17.77	16.29	14.77	13.85	13.69	12.99	1000 S162-118 (50ksi)	5.737	12	27.09	24.65	23.43	21.56	19.60	18.41	18.21	17.30	4.303	16	24.88	22.57	21.43	19.69	17.88	16.78	16.59	15.76		2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54	13.80																																																																																																																																																																																																																														
1000 S162-097 (50ksi)	4.721	12	25.66	23.30	22.13	20.35	18.48	17.35	16.29	16.29		3.541	16	23.53	21.31	20.22	18.57	16.85	15.81	15.63	14.84	2.361	24	20.74	18.75	17.77	16.29	14.77	13.85	13.69	12.99	1000 S162-118 (50ksi)	5.737	12	27.09	24.65	23.43	21.56	19.60	18.41	18.21	17.30		4.303	16	24.88	22.57	21.43	19.69	17.88	16.78	16.59	15.76	2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54	13.80																																																																																																																																																																																																																																									
	2.361	24	20.74	18.75	17.77	16.29	14.77	13.85	13.69	12.99	1000 S162-118 (50ksi)	5.737	12	27.09	24.65	23.43	21.56	19.60	18.41	18.21	17.30	4.303	16	24.88	22.57	21.43	19.69	17.88	16.78	16.59	15.76		2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54	13.80																																																																																																																																																																																																																																																														
1000 S162-118 (50ksi)	5.737	12	27.09	24.65	23.43	21.56	19.60	18.41	18.21	17.30		4.303	16	24.88	22.57	21.43	19.69	17.88	16.78	16.59	15.76	2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54	13.80																																																																																																																																																																																																																																																																									
	2.869	24	21.97	19.88	18.85	17.30	15.68	14.71	14.54	13.80																																																																																																																																																																																																																																																																																														





**TABLE 10--Limiting Spans for Single Span Joists (ft)**

Member Identification	Member Weight Wt/sf	Spc oc in	Design Loads, PSF (Pound per Square Foot), Total Load Deflection Limits =L/ 360																		
			DL		LL		TL		DL		LL		TL								
			10	30	40	15	40	55	15	15	15	70	85	15	15	115	140	145	45	125	170
1000 S300-097 (50ksi)	5.790	12	28.71	26.12	24.83	22.85	20.78	19.52	18.34	17.19	16.04	14.89	13.74	12.59	11.44	10.29	9.14	8.00	6.85	5.70	4.55
	4.342	16	26.37	23.93	22.72	20.88	18.95	17.79	16.63	15.47	14.31	13.15	12.00	10.84	9.68	8.52	7.37	6.21	5.06	3.90	2.75
	2.895	24	23.29	21.07	19.98	18.34	16.63	15.59	14.43	13.27	12.11	10.95	9.79	8.63	7.47	6.31	5.15	4.00	2.84	1.68	0.53
1000 S300-118 (50ksi)	7.000	12	30.22	27.56	26.22	24.16	21.99	20.67	19.35	18.03	16.71	15.39	14.07	12.75	11.43	10.11	8.79	7.47	6.15	4.83	3.51
	5.250	16	27.81	25.28	24.02	22.09	20.08	18.85	17.62	16.39	15.16	13.93	12.70	11.47	10.24	9.01	7.78	6.55	5.32	4.09	2.86
	3.500	24	24.62	22.30	21.16	19.43	17.63	16.54	15.38	14.22	13.06	11.90	10.74	9.58	8.42	7.26	6.10	4.94	3.78	2.62	1.46
1000 S350-054 (50ksi)	3.498	12	24.91	22.57	21.41	19.66	17.84	16.73	15.57	14.41	13.25	12.09	10.93	9.77	8.61	7.45	6.29	5.13	3.97	2.81	1.65
	2.624	16	22.79	20.61	19.54	17.92	16.24	14.79	13.35	11.91	10.47	9.03	7.59	6.15	4.71	3.27	1.83	0.39	-0.05	-0.49	-0.93
	1.749	24	20.04	18.09	17.14	15.49	13.35	11.71	10.07	8.43	6.79	5.15	3.51	1.87	0.23	-0.41	-0.93	-1.45	-1.97	-2.50	-3.02
1000 S350-068 (50ksi)	4.381	12	26.55	24.10	22.88	21.03	19.09	17.92	16.76	15.60	14.44	13.28	12.12	10.96	9.80	8.64	7.48	6.32	5.16	4.00	2.84
	3.285	16	24.33	22.03	20.90	19.18	17.40	16.32	15.16	14.00	12.84	11.68	10.52	9.36	8.20	7.04	5.88	4.72	3.56	2.40	1.24
	2.190	24	21.43	19.37	18.35	16.83	15.25	14.30	13.14	11.98	10.82	9.66	8.50	7.34	6.18	5.02	3.86	2.70	1.54	0.38	-0.78
1000 S350-097 (50ksi)	6.170	12	29.51	26.87	25.54	23.52	21.39	20.10	18.87	17.64	16.41	15.18	13.95	12.72	11.49	10.26	9.03	7.80	6.57	5.34	4.11
	4.628	16	27.11	24.62	23.38	21.49	19.52	18.32	17.13	15.93	14.73	13.53	12.33	11.13	9.93	8.73	7.53	6.33	5.13	3.93	2.73
	3.085	24	23.97	21.69	20.58	18.88	17.13	16.06	14.89	13.72	12.55	11.38	10.21	9.04	7.87	6.70	5.53	4.36	3.19	2.02	0.85
1000 S350-118 (50ksi)	7.465	12	31.19	28.46	27.08	24.97	22.74	21.37	20.14	18.91	17.68	16.45	15.22	13.99	12.76	11.53	10.30	9.07	7.84	6.61	5.38
	5.598	16	28.72	26.12	24.82	22.84	20.77	19.50	18.28	17.11	15.93	14.75	13.57	12.39	11.21	10.03	8.85	7.67	6.49	5.31	4.13
	3.732	24	25.44	23.06	21.88	20.09	18.23	17.11	15.99	14.87	13.75	12.63	11.51	10.39	9.27	8.15	7.03	5.91	4.79	3.67	2.55
1200 S162-068 (50ksi)	3.816	12	26.41	23.94	22.72	20.87	18.94	17.77	16.60	15.43	14.26	13.09	11.92	10.75	9.58	8.41	7.24	6.07	4.90	3.73	2.56
	2.862	16	24.17	21.87	20.74	19.03	17.25	16.18	15.01	13.84	12.67	11.50	10.33	9.16	7.99	6.82	5.65	4.48	3.31	2.14	0.97
	1.908	24	21.28	19.21	18.20	16.68	14.89	13.52	12.35	11.18	10.01	8.84	7.67	6.50	5.33	4.16	2.99	1.82	0.65	-0.52	-1.69
1200 S162-097 (50ksi)	5.413	12	29.71	27.01	25.67	23.61	21.46	20.16	18.93	17.70	16.47	15.24	14.01	12.78	11.55	10.32	9.09	7.86	6.63	5.40	4.17
	4.060	16	27.26	24.73	23.47	21.56	19.57	18.37	17.16	15.95	14.74	13.53	12.32	11.11	9.90	8.69	7.48	6.27	5.06	3.85	2.64
	2.706	24	24.07	21.77	20.64	18.93	17.16	16.10	14.99	13.88	12.77	11.66	10.55	9.44	8.33	7.22	6.11	5.00	3.89	2.78	1.67
1200 S162-118 (50ksi)	6.582	12	31.43	28.64	27.24	25.09	22.83	21.45	20.16	18.91	17.66	16.41	15.16	13.91	12.66	11.41	10.16	8.91	7.66	6.41	5.16
	4.937	16	28.90	26.26	24.94	22.94	20.84	19.56	18.37	17.18	16.00	14.81	13.62	12.43	11.24	10.05	8.86	7.67	6.48	5.29	4.10
	3.291	24	25.57	23.15	21.96	20.16	18.29	17.16	16.03	14.90	13.77	12.64	11.51	10.38	9.25	8.12	6.99	5.86	4.73	3.60	2.47
1200 S200-068 (50ksi)	4.022	12	27.37	24.83	23.56	21.65	19.65	18.44	17.23	16.02	14.81	13.60	12.39	11.18	9.97	8.76	7.55	6.34	5.13	3.92	2.71
	3.016	16	25.06	22.69	21.51	19.74	17.90	16.79	15.68	14.57	13.46	12.35	11.24	10.13	9.02	7.91	6.80	5.69	4.58	3.47	2.36
	2.011	24	22.07	19.93	18.89	17.31	15.45	14.02	12.88	11.74	10.60	9.46	8.32	7.18	6.04	4.90	3.76	2.62	1.48	0.34	-0.80

**TABLE 10--Limiting Spans for Single Span Joists (ft)**

Member Identification	Member Weight Wt/sf	Spc oc in	Design Loads, PSF (Pound per Square Foot), Total Load Deflection Limits =L/ 360																											
			DL		LL		TL		DL		LL		TL		DL		LL		TL		DL		LL		TL					
			10	30	40	15	40	55	15	50	65	15	70	85	15	100	115	15	125	140	45	100	145	45	125	170				
1200 S200-097 (50ksi)	5.734	12	30.76	27.98	26.60	24.48	22.26	20.90	19.64	28.54	25.90	24.58	22.59	20.51	19.25	18.08	26.14	23.67	22.45	20.61	18.69	17.17	15.88	23.03	20.81	19.72	18.08	15.77	14.32	13.01
1200 S200-118 (50ksi)	4.301	16	28.25	25.63	24.33	22.36	20.30	19.05	17.89	29.99	27.26	25.90	23.82	21.65	20.33	19.10	29.99	27.26	25.90	23.82	21.65	20.33	19.10	26.54	24.05	22.82	20.95	19.01	17.63	16.74
1200 S250-068 (50ksi)	2.867	24	24.95	22.57	21.40	19.64	17.81	16.70	15.67	31.98	29.11	27.68	25.48	23.18	21.77	20.46	31.98	29.11	27.68	25.48	23.18	21.77	20.46	29.38	26.67	25.33	23.29	21.15	19.63	18.64
1200 S250-097 (50ksi)	3.068	24	25.97	23.51	22.29	20.46	18.55	17.40	16.33	33.72	30.77	29.28	27.00	24.58	23.11	21.72	33.72	30.77	29.28	27.00	24.58	23.11	21.72	31.05	28.24	26.84	24.70	22.45	20.85	19.81
1200 S300-068 (50ksi)	2.278	24	24.02	21.70	20.57	18.86	16.74	15.20	13.81	27.50	24.93	23.65	21.72	19.71	18.50	17.36	27.50	24.93	23.65	21.72	19.71	18.50	17.36	29.73	26.99	25.63	23.56	21.40	20.09	18.86
1200 S300-097 (50ksi)	3.241	24	26.86	24.32	23.07	21.17	19.21	18.02	16.91	33.03	30.09	28.62	26.36	23.98	22.53	21.17	33.03	30.09	28.62	26.36	23.98	22.53	21.17	30.37	27.59	26.20	24.09	21.89	20.32	19.30
1200 S300-118 (50ksi)	3.922	24	28.39	25.74	24.43	22.44	20.37	19.11	17.94	34.76	31.74	30.22	27.87	25.39	23.87	22.44	34.76	31.74	30.22	27.87	25.39	23.87	22.44	32.03	29.15	27.71	25.50	23.19	21.54	20.46
1200 S350-068 (50ksi)	2.433	24	24.84	22.46	21.29	19.52	17.39	15.52	14.35	30.73	27.91	26.51	24.38	22.14	20.79	19.52	30.73	27.91	26.51	24.38	22.14	20.79	19.52	28.17	25.53	24.23	22.25	20.19	18.73	17.52
1200 S350-097 (50ksi)	3.431	24	27.58	24.98	23.70	21.76	19.74	18.52	17.38	33.88	30.88	29.38	27.07	24.63	23.15	21.76	33.88	30.88	29.38	27.07	24.63	23.15	21.76	31.16	28.32	26.91	24.75	22.49	20.88	19.83



**TABLE 10--Limiting Spans for Single Span Joists (ft)**

Member Identification	Member Weight Wt/sf	Spc oc in	Design Loads, PSF (Pound per Square Foot), Total Load Deflection Limits =L/ 360																																																																																																																																																																																																																																													
			DL	LL	TL	DL	LL	TL	DL	LL	TL	DL	LL	TL	DL	LL	TL	DL	LL	TL	DL	LL	TL	DL	LL	TL																																																																																																																																																																																																																						
			10	30	40	15	40	55	15	50	65	15	70	85	15	100	115	15	125	140	45	100	145	45	125	170																																																																																																																																																																																																																						
1400 S300-068 (50ksi)	5.040	12	32.93	29.92	28.43	26.14	23.75	22.30	21.99	20.36	30.21	27.38	25.98	23.86	21.40	19.45	17.69	26.65	24.09	22.84	20.36	17.57	15.68	13.70	37.00	33.75	32.11	29.60	26.94	25.32	25.04	23.80	34.05	30.96	29.42	27.07	24.60	23.10	22.84	21.70	30.15	27.32	25.92	23.80	21.60	20.26	20.03	19.02	39.15	35.79	34.10	31.47	28.69	26.98	26.69	25.38	36.11	32.90	31.29	28.82	26.22	24.63	24.36	23.15	32.05	29.09	27.61	25.38	23.04	21.63	21.38	20.31	34.66	31.51	29.94	27.55	25.04	23.51	23.25	21.64	31.81	28.85	27.38	25.15	22.75	20.68	20.33	18.82	28.08	25.39	24.08	21.64	18.68	16.57	16.01	13.69	38.12	34.79	33.12	30.53	27.81	26.14	25.85	24.57	35.11	31.94	30.35	27.93	25.40	23.85	23.58	22.41	31.11	28.20	26.76	24.57	22.30	20.93	20.69	19.64	40.25	36.83	35.10	32.41	29.56	27.80	27.50	26.16	37.16	33.87	32.22	29.69	27.02	25.39	25.11	23.87	33.01	29.97	28.46	26.16	23.76	22.30	22.05	20.94	37.11	33.83	32.18	29.65	26.98	25.35	25.07	23.83	34.14	31.02	29.47	27.10	24.63	23.12	22.86	21.72	30.21	27.36	25.96	23.83	21.62	20.01	19.67	18.20	39.56	36.15	34.42	31.76	28.94	27.21	26.92	25.59	36.47	33.21	31.58	29.07	26.44	24.84	24.57	23.34	4.136	3.35	29.34	27.86	25.59	23.23	21.81	20.47	7.118	38.29	34.92	33.22	27.87	26.20	25.91	24.62	5.338	35.24	32.03	30.44	25.45	23.90	23.63	22.45	3.559	31.20	28.27	26.82	22.34	20.96	20.72	19.29	8.689	40.82	37.33	35.56	29.92	28.14	27.83	26.47	6.517	37.66	34.31	32.63	27.34	25.69	25.41	24.14	4.345	33.43	30.33	28.80	24.03	22.56	22.30	21.18

Notes:

1. Joist Spans Length are based on member being fully braced
2. Selfweight of joist has been added to the Design Loads.
3. Web crippling has not been checked (See Table for Allowable Web Crippling Load).

## Table 10 Design Example:

Joist Span = 20 ft  
Joist spacing = 16 in OC  
Deflection limits = L/ 360       $\Delta = (20\text{ft} \cdot 12\text{"/ft}) / 360 = 0.67\text{ ''}$   
Deflection at mid-span

Design Loads for office:

Live =	50 psf
Partition =	20 psf
Total Live Load =	<u>70 psf</u>
Dead =	15 psf
Total Dead + Live =	<u>85.0 psf</u>

Choices:	Wt per sf	
1000S200-118 (50ksi)	6.156	20.5
1000S250-097 (50ksi)	5.444	20.2
1000S300-097 (50ksi)	5.790	20.9
1200S162-097 (50ksi)	5.413	21.6
<b><u>1200S250-068 (50ksi)</u></b>	<b><u>4.288</u></b>	<b><u>20.6 Best choice</u></b>

Check Web Crippling:

Calculate Reaction from Joists  
 $w = (85\text{ lb/sf}) \cdot (16\text{"/}12\text{"/ft}) / 1000 = 0.113\text{ kips/ft}$   
Reaction =  $w \cdot L / 2 = 1.133\text{ kips}$

Information needed: Width of the support bearing, assume supported by 3.625" bearing wall

From Table 11 Allowable Web Crippling Loads = 1.253 kips > 1.133 kips  
Therefore Bearing Stiffeners are not required

N Bearing Length =	3.625 in
Member Depth =	12 inches
Member Thickness =	68 mils
Steel Strength $F_y$ =	50 ksi

## Verification Calculations for Table 10

Given: **1400 S162-097 (50ksi)**

Maxo = **148.17** k-in  
 leff = **39.63** in<sup>4</sup>  
 Vay = **6.938** k-in  
 Wt. = **6.104** plf

**Bending Equation =**  $L=(8*Maxo/w)^{0.5}$

**35.26 ft**

Maxo= 148.17 k-in  
 LL = **40** psf  
 DL = **15** psf  
 TL = 55 psf  
 Spc= **16** in  
 Wt. = 6.1 plf  
 w= 79.4 plf

Moment= 148.17 checks

**Deflection Equation =**  $L=[384*E*Ixe/(DC*5*w)]^{1/3}$

**27.94 ft**

E = **29500** ksi  
 leff = 39.627 in<sup>4</sup>  
 DC= TL/360> **360**

L/ 360 0.93 in

Delta= 0.93 checks

**Deflection Equation =**  $L=2*Vay/w$

**174.68 ft**

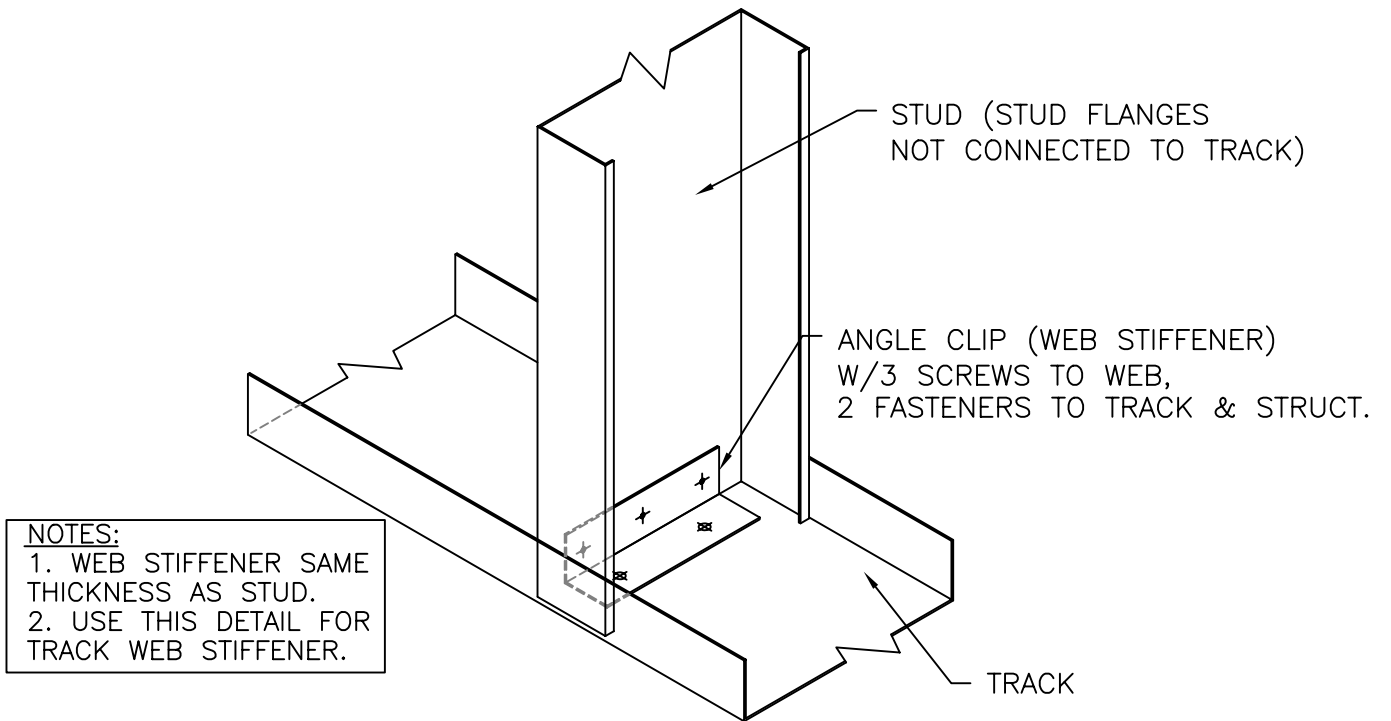
Shear Equation =

Vay= 6.938 kips

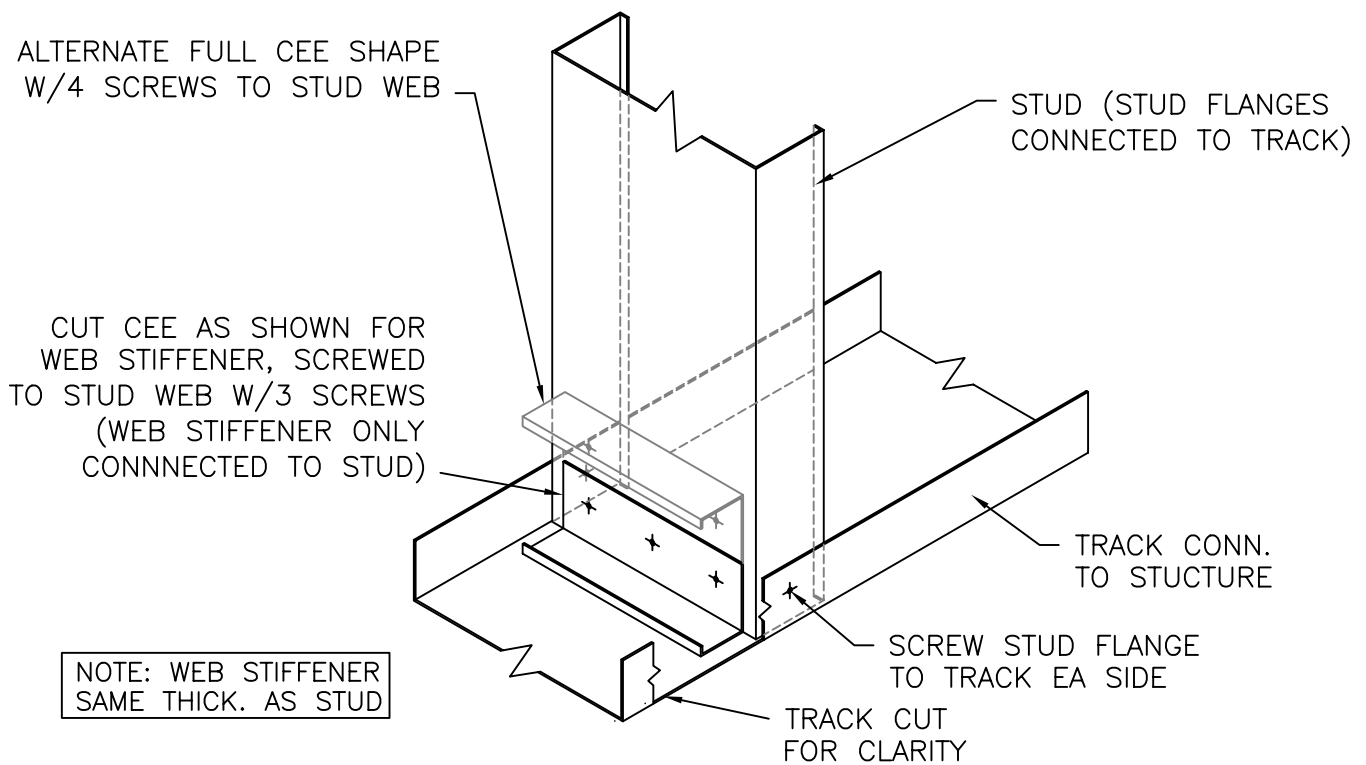
Reaction= 6.938 checks

**Minimum Length = 27.94 ft (Deflection Controls)**

**Checks with Table 10**



DETAIL A (Angle Clip Web Stiffener)



DETAIL A (Cee or Cut Cee Web Stiffener)



TABLE 11--Allowable Web Crippling Loads for (Studs) S-Members and (Tracks) T-Members, kips																					
Member Depth-Thickness		EOF, End One Flange				IOF, Interior One Flange				ETF, End Two Flanges				ITF, Interior Two Flanges							
		ΩW = 1.75		Φ= 90		ΩW = 1.65		Φ= 90		ΩW = 1.75		Φ= 90		ΩW = 1.75		Φ= 90					
		C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	
		4	0.14	0.35	0.02	13	0.23	0.14	0.01	7.5	0.08	0.12	0.048	20	0.1	0.08	0.031	N Bearing Length, in.			
Depth		T, in.	mils	Fy	Radius	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00
1.625	0.0188	18	33	0.0843		0.055	0.091	0.095	0.112	0.087	0.127	0.131	0.151	0.045	0.065	0.067	0.076	0.122	0.162	0.166	0.186
1.625	0.0247	24	33	0.0814		0.094	0.153	0.159	0.189	0.162	0.231	0.238	0.273	0.083	0.116	0.119	0.135	0.218	0.285	0.292	0.325
1.625	0.0247	24	50	0.0814		0.143	0.232	0.241	0.286	0.246	0.350	0.361	0.413	0.126	0.175	0.180	0.205	0.331	0.432	0.442	0.492
1.625	0.0283	27	33	0.0796		0.122	0.197	0.205	0.242	0.218	0.307	0.317	0.361	0.111	0.153	0.157	0.178	0.290	0.374	0.383	0.425
1.625	0.0312	30	33	0.0782		0.148	0.236	0.246	0.290	0.269	0.377	0.388	0.442	0.137	0.187	0.192	0.217	0.356	0.456	0.466	0.516
1.625	0.0346	33	33	0.0764		0.180	0.286	0.297	0.350	0.336	0.467	0.481	0.546	0.170	0.231	0.237	0.267	0.441	0.561	0.574	0.634
1.625	0.0451	43	33	0.0712		0.298	0.465	0.483	0.566	0.589	0.801	0.823	0.929	0.297	0.394	0.404	0.452	0.764	0.953	0.973	1.067
1.625	0.0566	54	33	0.0849		0.447	0.687	0.712	0.832	0.904	1.207	1.239	1.390	0.471	0.614	0.629	0.700	1.203	1.477	1.506	1.642
1.625	0.0566	54	50	0.0849		0.677	1.041	1.079	1.260	1.370	1.829	1.877	2.105	0.714	0.930	0.953	1.061	1.823	2.237	2.281	2.487
2.500	0.0188	18	33	0.0843		0.052	0.086	0.089	0.106	0.085	0.123	0.128	0.147	0.037	0.052	0.054	0.061	0.109	0.146	0.150	0.168
2.500	0.0247	24	33	0.0814		0.090	0.146	0.152	0.179	0.158	0.226	0.233	0.267	0.070	0.098	0.101	0.114	0.200	0.261	0.268	0.298
2.500	0.0247	24	50	0.0814		0.136	0.221	0.230	0.272	0.240	0.342	0.353	0.404	0.106	0.148	0.152	0.173	0.303	0.396	0.405	0.451
2.500	0.0283	27	33	0.0796		0.117	0.188	0.196	0.231	0.213	0.301	0.310	0.354	0.096	0.132	0.135	0.153	0.268	0.346	0.354	0.393
2.500	0.0312	30	33	0.0782		0.141	0.226	0.235	0.277	0.264	0.369	0.380	0.433	0.119	0.163	0.167	0.189	0.330	0.423	0.433	0.479
2.500	0.0346	33	33	0.0764		0.173	0.275	0.285	0.336	0.330	0.458	0.472	0.535	0.150	0.203	0.209	0.235	0.411	0.523	0.535	0.591
2.500	0.0451	43	33	0.0712		0.287	0.449	0.466	0.547	0.580	0.788	0.810	0.913	0.267	0.354	0.364	0.407	0.720	0.899	0.918	1.006
2.500	0.0566	54	33	0.0849		0.433	0.666	0.690	0.806	0.891	1.189	1.221	1.369	0.430	0.560	0.574	0.639	1.142	1.402	1.429	1.558
2.500	0.0566	54	50	0.0849		0.656	1.009	1.046	1.222	1.350	1.802	1.850	2.075	0.652	0.849	0.870	0.968	1.730	2.124	2.165	2.361
2.500	0.0713	68	33	0.1069		0.654	0.989	1.024	1.191	1.368	1.793	1.839	2.050	0.693	0.887	0.907	1.004	1.815	2.193	2.233	2.421
2.500	0.0713	68	50	0.1069		0.990	1.498	1.552	1.805	2.073	2.717	2.786	3.106	1.049	1.344	1.375	1.521	2.750	3.323	3.384	3.669
2.500	0.1017	97	33	0.1525		1.236	1.820	1.882	2.173	2.657	3.389	3.467	3.832	1.430	1.784	1.821	1.997	3.694	4.364	4.435	4.768
2.500	0.1017	97	50	0.1525		1.872	2.758	2.852	3.293	4.025	5.136	5.254	5.806	2.167	2.703	2.760	3.026	5.598	6.612	6.720	7.225
2.500	0.1242	118	33	0.1863		1.772	2.570	2.655	3.052	3.869	4.863	4.969	5.463	2.145	2.638	2.690	2.935	5.509	6.430	6.528	6.986
2.500	0.1242	118	50	0.1863		2.685	3.894	4.023	4.624	5.862	7.368	7.528	8.277	3.251	3.997	4.076	4.448	8.347	9.742	9.891	10.585
3.500	0.0188	18	33	0.0843		0.049	0.081	0.084	0.100	0.083	0.120	0.124	0.143	0.028	0.040	0.042	0.048	0.098	0.131	0.134	0.151
3.500	0.0247	24	50	0.0814		0.130	0.210	0.219	0.259	0.235	0.335	0.346	0.395	0.088	0.123	0.126	0.144	0.278	0.362	0.371	0.413
3.500	0.0283	27	33	0.0796		0.112	0.180	0.187	0.221	0.209	0.295	0.304	0.347	0.081	0.112	0.115	0.130	0.247	0.319	0.327	0.362
3.500	0.0312	30	33	0.0782		0.135	0.217	0.225	0.266	0.259	0.362	0.373	0.425	0.103	0.140	0.144	0.163	0.306	0.393	0.402	0.445

TABLE 11--Allowable Web Crippling Loads for Studs and Tracks.xls

TABLE 11--Allowable Web Crippling Loads for (Studs) S-Members and (Tracks) T-Members, kips

Member Depth-Thickness		EOF, End One Flange												IOF, Interior One Flange						ETF, End Two Flanges						ITF, Interior Two Flanges					
		ΩW = 1.75			Φ= 90			ΩW = 1.65			Φ= 90			ΩW = 1.75			Φ= 90			ΩW = 1.75			Φ= 90								
		C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch						
		4	0.14	0.35	0.02	13	0.23	0.14	0.01	7.5	0.08	0.12	0.048	20	0.1	0.08	0.031	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.						
Depth	T, in.	mils	Fy	Radius	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00							
3.500	0.0346	33	33	0.0764	0.166	0.264	0.274	0.323	0.324	0.450	0.463	0.526	0.131	0.177	0.182	0.205	0.384	0.488	0.499	0.551											
3.500	0.0451	43	33	0.0712	0.278	0.434	0.451	0.528	0.571	0.776	0.798	0.900	0.240	0.318	0.326	0.365	0.680	0.848	0.866	0.949											
3.500	0.0566	54	33	0.0849	0.420	0.646	0.670	0.783	0.879	1.173	1.204	1.351	0.392	0.511	0.524	0.583	1.086	1.333	1.359	1.482											
3.500	0.0566	54	50	0.0849	0.637	0.979	1.016	1.186	1.331	1.777	1.825	2.046	0.594	0.775	0.794	0.883	1.645	2.019	2.059	2.245											
3.500	0.0713	68	33	0.1069	0.637	0.963	0.998	1.160	1.351	1.771	1.816	2.025	0.640	0.820	0.839	0.928	1.737	2.098	2.137	2.317											
3.500	0.0713	68	50	0.1069	0.965	1.459	1.512	1.758	2.047	2.684	2.752	3.068	0.970	1.242	1.271	1.406	2.631	3.179	3.238	3.510											
3.500	0.1017	97	33	0.1525	1.209	1.780	1.841	2.126	2.629	3.354	3.431	3.792	1.343	1.675	1.710	1.876	3.562	4.208	4.276	4.597											
3.500	0.1017	97	50	0.1525	1.831	2.698	2.790	3.221	3.983	5.082	5.199	5.745	2.035	2.538	2.592	2.842	5.397	6.375	6.479	6.966											
3.500	0.1242	118	33	0.1863	1.736	2.519	2.602	2.991	3.832	4.816	4.921	5.411	2.028	2.494	2.544	2.775	5.329	6.220	6.315	6.758											
3.500	0.1242	118	50	0.1863	2.631	3.816	3.942	4.531	5.805	7.297	7.456	8.198	3.073	3.779	3.854	4.205	8.074	9.425	9.568	10.240											
3.625	0.0188	18	33	0.0843	0.049	0.080	0.084	0.099	0.082	0.120	0.124	0.143	0.027	0.039	0.040	0.046	0.097	0.129	0.133	0.149											
3.625	0.0247	24	33	0.0814	0.085	0.138	0.144	0.170	0.155	0.221	0.228	0.260	0.057	0.079	0.082	0.093	0.181	0.237	0.242	0.270											
3.625	0.0247	24	50	0.0814	0.129	0.209	0.218	0.258	0.234	0.334	0.345	0.394	0.086	0.120	0.124	0.140	0.275	0.358	0.367	0.409											
3.625	0.0283	27	33	0.0796	0.111	0.179	0.186	0.220	0.209	0.294	0.303	0.346	0.080	0.109	0.113	0.127	0.245	0.316	0.324	0.359											
3.625	0.0312	30	33	0.0782	0.135	0.216	0.224	0.265	0.258	0.362	0.373	0.424	0.101	0.137	0.141	0.160	0.304	0.389	0.398	0.441											
3.625	0.0346	33	33	0.0764	0.165	0.263	0.273	0.322	0.323	0.449	0.462	0.525	0.129	0.174	0.179	0.202	0.381	0.484	0.495	0.547											
3.625	0.0451	43	33	0.0712	0.277	0.432	0.449	0.526	0.570	0.774	0.796	0.898	0.236	0.314	0.322	0.360	0.675	0.842	0.860	0.943											
3.625	0.0566	54	33	0.0849	0.419	0.644	0.668	0.780	0.877	1.171	1.202	1.348	0.388	0.506	0.518	0.577	1.079	1.325	1.351	1.473											
3.625	0.0566	54	50	0.0849	0.634	0.976	1.012	1.182	1.329	1.774	1.822	2.043	0.588	0.766	0.785	0.874	1.635	2.007	2.047	2.232											
3.625	0.0713	68	33	0.1069	0.635	0.960	0.995	1.157	1.349	1.769	1.813	2.022	0.635	0.812	0.831	0.920	1.728	2.088	2.126	2.305											
3.625	0.0713	68	50	0.1069	0.962	1.455	1.507	1.753	2.044	2.680	2.748	3.064	0.961	1.231	1.259	1.393	2.618	3.163	3.221	3.492											
3.625	0.1017	97	33	0.1525	1.206	1.776	1.837	2.120	2.626	3.350	3.427	3.787	1.333	1.663	1.698	1.862	3.547	4.190	4.258	4.578											
3.625	0.1017	97	50	0.1525	1.827	2.691	2.783	3.212	3.979	5.076	5.192	5.738	2.020	2.520	2.573	2.821	5.374	6.349	6.452	6.936											
3.625	0.1242	118	33	0.1863	1.732	2.513	2.596	2.984	3.827	4.811	4.916	5.405	2.015	2.478	2.527	2.757	5.309	6.197	6.291	6.733											
3.625	0.1242	118	50	0.1863	2.625	3.807	3.933	4.521	5.799	7.289	7.448	8.189	3.053	3.754	3.829	4.178	8.044	9.389	9.532	10.201											
4.000	0.0247	24	33	0.0814	0.084	0.136	0.141	0.167	0.154	0.219	0.226	0.258	0.053	0.074	0.076	0.086	0.176	0.229	0.235	0.262											
4.000	0.0247	24	50	0.0814	0.127	0.206	0.214	0.253	0.233	0.332	0.342	0.392	0.080	0.112	0.115	0.131	0.266	0.347	0.356	0.396											
4.000	0.0283	27	33	0.0796	0.109	0.176	0.183	0.217	0.207	0.292	0.301	0.344	0.075	0.103	0.106	0.120	0.238	0.307	0.315	0.349											

TABLE 11--Allowable Web Crippling Loads for (Studs) S-Members and (Tracks) T-Members, kips

Member Depth-Thickness		EOF, End One Flange												IOF, Interior One Flange						ETF, End Two Flanges						ITF, Interior Two Flanges					
		ΩW = 1.75			Φ = 90			ΩW = 1.65			Φ = 90			ΩW = 1.75			Φ = 90			ΩW = 1.75			Φ = 90								
		C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch						
		4	0.14	0.35	0.02	13	0.23	0.14	0.01	7.5	0.08	0.12	0.048	20	0.1	0.08	0.031	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.										
Depth	T, in.	mils	Fy	Radius	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00							
4.000	0.0312	30	33	0.0782	0.133	0.213	0.221	0.261	0.257	0.359	0.370	0.421	0.095	0.130	0.134	0.151	0.296	0.379	0.388	0.429											
4.000	0.0346	33	33	0.0764	0.163	0.259	0.269	0.317	0.322	0.446	0.460	0.522	0.122	0.166	0.170	0.192	0.372	0.473	0.483	0.534											
4.000	0.0451	43	33	0.0712	0.274	0.428	0.444	0.520	0.567	0.770	0.792	0.893	0.227	0.301	0.309	0.346	0.662	0.825	0.843	0.924											
4.000	0.0566	54	33	0.0849	0.415	0.638	0.661	0.772	0.873	1.166	1.197	1.342	0.376	0.490	0.502	0.558	1.061	1.302	1.328	1.448											
4.000	0.0566	54	50	0.0849	0.628	0.966	1.002	1.170	1.323	1.766	1.813	2.034	0.569	0.742	0.760	0.846	1.607	1.973	2.012	2.194											
4.000	0.0713	68	33	0.1069	0.629	0.952	0.986	1.147	1.344	1.762	1.806	2.014	0.617	0.791	0.809	0.895	1.702	2.057	2.094	2.271											
4.000	0.0713	68	50	0.1069	0.953	1.442	1.494	1.737	2.036	2.669	2.737	3.051	0.936	1.198	1.226	1.356	2.579	3.116	3.173	3.441											
4.000	0.1017	97	33	0.1525	1.197	1.763	1.823	2.105	2.617	3.339	3.415	3.774	1.305	1.628	1.662	1.823	3.504	4.139	4.207	4.523											
4.000	0.1017	97	50	0.1525	1.814	2.671	2.762	3.189	3.965	5.058	5.175	5.718	1.978	2.466	2.518	2.761	5.309	6.272	6.374	6.853											
4.000	0.1242	118	33	0.1863	1.721	2.496	2.579	2.964	3.815	4.796	4.900	5.388	1.977	2.432	2.480	2.706	5.251	6.129	6.223	6.659											
4.000	0.1242	118	50	0.1863	2.608	3.782	3.907	4.491	5.781	7.267	7.424	8.163	2.996	3.684	3.757	4.099	7.956	9.287	9.428	10.090											
5.500	0.0283	27	33	0.0796	0.103	0.167	0.173	0.205	0.202	0.285	0.294	0.336	0.058	0.080	0.082	0.093	0.214	0.276	0.283	0.314											
5.500	0.0312	30	33	0.0782	0.126	0.202	0.210	0.247	0.251	0.351	0.362	0.412	0.076	0.104	0.106	0.120	0.268	0.343	0.351	0.389											
5.500	0.0346	33	33	0.0764	0.155	0.247	0.256	0.302	0.315	0.437	0.450	0.511	0.100	0.135	0.139	0.157	0.339	0.431	0.441	0.487											
5.500	0.0451	43	33	0.0712	0.262	0.410	0.426	0.499	0.556	0.756	0.778	0.877	0.195	0.258	0.265	0.297	0.614	0.766	0.782	0.858											
5.500	0.0566	54	33	0.0849	0.400	0.615	0.638	0.745	0.859	1.147	1.177	1.320	0.331	0.432	0.443	0.493	0.995	1.221	1.246	1.358											
5.500	0.0566	54	50	0.0849	0.606	0.932	0.966	1.128	1.302	1.738	1.784	2.001	0.502	0.654	0.671	0.746	1.508	1.851	1.887	2.058											
5.500	0.0713	68	33	0.1069	0.609	0.922	0.955	1.111	1.324	1.736	1.780	1.985	0.557	0.713	0.729	0.807	1.611	1.947	1.982	2.149											
5.500	0.0713	68	50	0.1069	0.923	1.397	1.447	1.683	2.007	2.631	2.697	3.007	0.844	1.080	1.105	1.223	2.441	2.949	3.003	3.256											
5.500	0.1017	97	33	0.1525	1.166	1.717	1.776	2.050	2.585	3.298	3.374	3.728	1.205	1.503	1.535	1.683	3.352	3.960	4.024	4.326											
5.500	0.1017	97	50	0.1525	1.766	2.602	2.691	3.106	3.917	4.997	5.112	5.649	1.826	2.278	2.326	2.550	5.079	5.999	6.097	6.555											
5.500	0.1242	118	33	0.1863	1.681	2.438	2.518	2.894	3.773	4.743	4.846	5.328	1.844	2.268	2.313	2.523	5.047	5.891	5.981	6.400											
5.500	0.1242	118	50	0.1863	2.546	3.693	3.815	4.385	5.717	7.186	7.342	8.073	2.794	3.436	3.504	3.823	7.647	8.926	9.062	9.698											
6.000	0.0312	30	33	0.0782	0.124	0.199	0.206	0.243	0.249	0.349	0.359	0.409	0.070	0.096	0.098	0.111	0.260	0.333	0.340	0.377											
6.000	0.0346	33	33	0.0764	0.153	0.243	0.253	0.297	0.313	0.434	0.447	0.507	0.093	0.126	0.130	0.146	0.330	0.419	0.429	0.473											
6.000	0.0451	43	33	0.0712	0.259	0.405	0.420	0.493	0.553	0.752	0.773	0.872	0.185	0.246	0.252	0.282	0.600	0.748	0.764	0.838											
6.000	0.0566	54	33	0.0849	0.395	0.608	0.631	0.736	0.855	1.141	1.172	1.314	0.318	0.415	0.425	0.473	0.975	1.197	1.221	1.331											
6.000	0.0566	54	50	0.0849	0.599	0.921	0.956	1.116	1.295	1.729	1.775	1.991	0.482	0.628	0.644	0.716	1.478	1.814	1.850	2.017											

TABLE 11--Allowable Web Crippling Loads for (Studs) S-Members and (Tracks) T-Members, kips

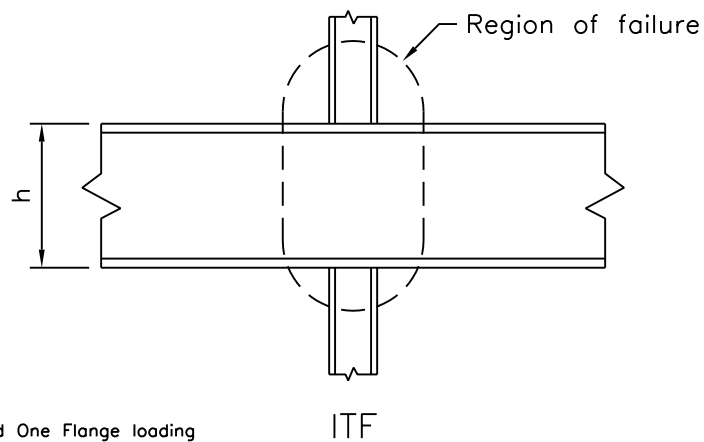
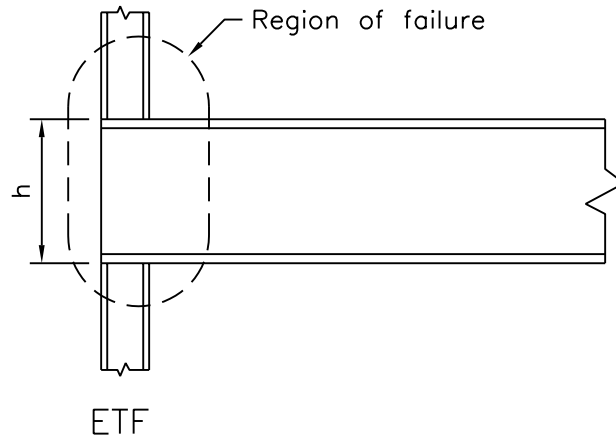
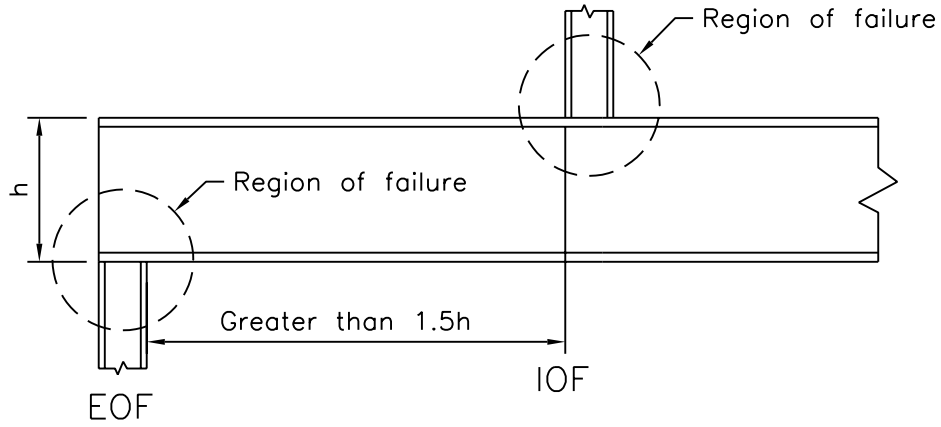
Member Depth-Thickness		EOF, End One Flange												IOF, Interior One Flange						ETF, End Two Flanges						ITF, Interior Two Flanges					
		ΩW = 1.75			Φ= 90			ΩW = 1.65			Φ= 90			ΩW = 1.75			Φ= 90			ΩW = 1.75			Φ= 90			ΩW = 1.75			Φ= 90		
		C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch		
		4	0.14	0.35	0.02	13	0.23	0.14	0.01	7.5	0.08	0.12	0.048	20	0.1	0.08	0.031	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.		
		Depth	T, in.	mils	Fy	Radius	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00	
6.000	0.0713	68	33	0.1069	0.604	0.913	0.946	1.100	1.319	1.729	1.772	1.976	0.539	0.690	0.706	0.781	1.584	1.914	1.949	2.113											
6.000	0.0713	68	50	0.1069	0.914	1.383	1.433	1.666	1.998	2.619	2.685	2.994	0.816	1.045	1.069	1.183	2.399	2.899	2.952	3.201											
6.000	0.1017	97	33	0.1525	1.157	1.704	1.762	2.034	2.576	3.286	3.361	3.714	1.175	1.466	1.497	1.641	3.306	3.906	3.970	4.268											
6.000	0.1017	97	50	0.1525	1.752	2.581	2.669	3.081	3.902	4.978	5.093	5.628	1.781	2.221	2.268	2.487	5.010	5.918	6.014	6.466											
6.000	0.1242	118	33	0.1863	1.669	2.420	2.500	2.874	3.760	4.727	4.830	5.310	1.805	2.219	2.263	2.469	4.986	5.820	5.909	6.323											
6.000	0.1242	118	50	0.1863	2.528	3.667	3.788	4.354	5.698	7.162	7.318	8.046	2.734	3.362	3.429	3.741	7.555	8.818	8.952	9.581											
8.000	0.0451	43	33	0.0712	0.247	0.386	0.401	0.470	0.542	0.737	0.757	0.854	0.150	0.199	0.204	0.228	0.548	0.683	0.698	0.765											
8.000	0.0566	54	33	0.0849	0.379	0.583	0.605	0.706	0.839	1.120	1.150	1.290	0.270	0.352	0.361	0.402	0.904	1.110	1.131	1.234											
8.000	0.0566	54	50	0.0849	0.575	0.884	0.917	1.070	1.272	1.698	1.743	1.955	0.409	0.534	0.547	0.608	1.370	1.681	1.714	1.869											
8.000	0.0713	68	33	0.1069	0.582	0.881	0.912	1.061	1.297	1.701	1.744	1.944	0.473	0.605	0.619	0.685	1.485	1.794	1.827	1.981											
8.000	0.0713	68	50	0.1069	0.882	1.334	1.382	1.607	1.966	2.577	2.642	2.946	0.716	0.917	0.939	1.038	2.250	2.718	2.768	3.001											
8.000	0.1017	97	33	0.1525	1.123	1.654	1.711	1.975	2.541	3.242	3.316	3.665	1.068	1.332	1.360	1.491	3.143	3.712	3.773	4.056											
8.000	0.1017	97	50	0.1525	1.702	2.507	2.592	2.992	3.850	4.912	5.025	5.553	1.618	2.018	2.060	2.259	4.761	5.625	5.716	6.146											
8.000	0.1242	118	33	0.1863	1.625	2.357	2.435	2.799	3.715	4.670	4.771	5.246	1.662	2.044	2.084	2.274	4.767	5.565	5.649	6.046											
8.000	0.1242	118	50	0.1863	2.462	3.572	3.689	4.241	5.629	7.076	7.229	7.949	2.518	3.096	3.158	3.445	7.223	8.431	8.559	9.160											
10.000	0.0566	54	33	0.0849	0.365	0.562	0.582	0.680	0.826	1.102	1.132	1.269	0.228	0.297	0.305	0.339	0.841	1.033	1.053	1.148											
10.000	0.0566	54	50	0.0849	0.553	0.851	0.882	1.031	1.251	1.670	1.715	1.923	0.346	0.450	0.462	0.514	1.275	1.565	1.595	1.740											
10.000	0.0713	68	33	0.1069	0.563	0.852	0.883	1.027	1.279	1.677	1.719	1.917	0.415	0.532	0.544	0.602	1.398	1.690	1.721	1.866											
10.000	0.0713	68	50	0.1069	0.854	1.291	1.338	1.556	1.938	2.540	2.604	2.904	0.629	0.806	0.824	0.912	2.119	2.560	2.607	2.827											
10.000	0.1017	97	33	0.1525	1.094	1.611	1.666	1.923	2.511	3.204	3.277	3.622	0.974	1.215	1.240	1.360	2.999	3.543	3.601	3.871											
10.000	0.1017	97	50	0.1525	1.657	2.441	2.525	2.914	3.805	4.854	4.966	5.488	1.476	1.840	1.879	2.060	4.545	5.369	5.456	5.866											
10.000	0.1242	118	33	0.1863	1.587	2.303	2.379	2.734	3.676	4.620	4.721	5.190	1.538	1.891	1.928	2.104	4.577	5.342	5.423	5.804											
10.000	0.1242	118	50	0.1863	2.405	3.489	3.604	4.143	5.569	7.000	7.152	7.864	2.330	2.865	2.921	3.187	6.934	8.094	8.217	8.794											
12.000	0.0713	68	33	0.1069	0.547	0.827	0.857	0.996	1.262	1.655	1.697	1.892	0.363	0.465	0.476	0.527	1.320	1.596	1.625	1.762											
12.000	0.0713	68	50	0.1069	0.828	1.253	1.298	1.509	1.913	2.507	2.571	2.866	0.551	0.705	0.721	0.798	2.001	2.417	2.462	2.669											
12.000	0.1017	97	33	0.1525	1.068	1.573	1.626	1.877	2.484	3.169	3.242	3.583	0.889	1.109	1.133	1.242	2.871	3.391	3.447	3.705											
12.000	0.1017	97	50	0.1525	1.618	2.383	2.464	2.844	3.764	4.802	4.912	5.429	1.348	1.681	1.716	1.882	4.350	5.138	5.222	5.614											
12.000	0.1242	118	33	0.1863	1.554	2.253	2.328	2.676	3.640	4.576	4.675	5.140	1.426	1.753	1.788	1.951	4.405	5.142	5.220	5.587											

**TABLE 11--Allowable Web Crippling Loads for (Studs) S-Members and (Tracks) T-Members, kips**

Member Depth-Thickness		EOF, End One Flange						IOF, Interior One Flange			ETF, End Two Flanges			ITF, Interior Two Flanges						
		$\Omega W = 1.75$		$\Phi = 90$		$\Omega W = 1.65$		$\Phi = 90$		$\Omega W = 1.75$		$\Phi = 90$		$\Omega W = 1.75$		$\Phi = 90$				
		$C_R$	$C_N$	$C_N$	Ch	$C_R$	C	$C_R$	$C_N$	Ch	C	$C_R$	$C_N$	Ch	C	$C_R$	$C_N$	Ch		
		4	0.14	0.35	0.02	13	0.23	0.14	0.01	7.5	0.08	0.12	0.048	20	0.1	0.08	0.031			
		N Bearing Length, in.						N Bearing Length, in.			N Bearing Length, in.			N Bearing Length, in.						
Depth	T, in.	mils	Fy	Radius	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00	1.00	3.63	4.00	6.00
12.000	0.1242	118	50	0.1863	2.354	3.414	3.527	4.054	5.515	6.933	7.083	7.788	2.161	2.657	2.709	2.956	6.675	7.791	7.910	8.465
14.000	0.0713	68	33	0.1069	0.531	0.803	0.832	0.968	1.247	1.635	1.676	1.869	0.316	0.404	0.414	0.458	1.249	1.509	1.537	1.666
14.000	0.0713	68	50	0.1069	0.805	1.217	1.261	1.466	1.890	2.477	2.540	2.832	0.479	0.613	0.627	0.694	1.892	2.287	2.329	2.525
14.000	0.1017	97	33	0.1525	1.044	1.537	1.590	1.835	2.460	3.138	3.210	3.547	0.812	1.013	1.034	1.134	2.753	3.252	3.305	3.553
14.000	0.1017	97	50	0.1525	1.581	2.329	2.408	2.780	3.727	4.754	4.864	5.375	1.230	1.534	1.567	1.718	4.171	4.927	5.008	5.384
14.000	0.1242	118	33	0.1863	1.523	2.208	2.281	2.622	3.608	4.535	4.633	5.094	1.324	1.628	1.660	1.811	4.249	4.959	5.035	5.388
14.000	0.1242	118	50	0.1863	2.307	3.346	3.456	3.973	5.466	6.871	7.020	7.719	2.006	2.466	2.515	2.744	6.437	7.514	7.628	8.164
16.000	0.1017	97	33	0.1525	1.021	1.504	1.555	1.796	2.437	3.109	3.180	3.514	0.740	0.923	0.943	1.033	2.644	3.123	3.174	3.412
16.000	0.1017	97	50	0.1525	1.547	2.279	2.357	2.721	3.692	4.710	4.818	5.325	1.121	1.399	1.428	1.566	4.005	4.732	4.809	5.170
16.000	0.1242	118	33	0.1863	1.494	2.167	2.238	2.573	3.577	4.497	4.595	5.052	1.229	1.511	1.541	1.681	4.103	4.789	4.862	5.204
16.000	0.1242	118	50	0.1863	2.263	3.283	3.391	3.898	5.420	6.813	6.961	7.654	1.862	2.290	2.335	2.548	6.217	7.257	7.367	7.884

**Notes:**

1. The above coefficients apply when  $h/t < 200$ ,  $N/t < 210$ ,  $N/h < 2.0$
2. Coefficient from 2001 NASPEC Table C3.4.1-2, Single Web Channel and C-Sections, Flange Fastened to Support.
3. NASPEC Eq. C3.4.1-1 used to calculate ASD values---Web Crippling Strength of Webs without Holes.
4. When a web hole is within the bearing length, a bearing stiffener shall be added.
5. When web hole is within 10" to end of member use NASPEC Section C3.4.2 for reduction factor.
6. Web Stiffeners are required when support reactions, concentrated loads, exceed the above values. (See Web Stiffener Details)



**LEGEND:**  
 EOF = End One Flange loading  
 IOF = Interior One Flange loading  
 ETF = End Two Flange loading  
 ITF = Interior Two Flange loading

## Web Crippling Conditions

Material Thickness and Radius			Member (STUDS) Web Height to Thickness Ratio = (Depth of Stud-2*(T+R))/T												
T, mils	T, in	t, in	R, in	1.625	2.50	3.50	3.625	4.00	5.50	6.00	8.00	10.00	12.00	14.00	16.00
18 mils	0.0188	0.0179	0.0844	75.5	122.0	175.2	181.8	201.8	281.6	308.2	414.6	520.9	627.3	733.7	840.1
24 mils	0.0247	0.0235	0.0814	57.1	92.5	132.9	137.9	153.1	213.7	233.9	314.8	395.6	476.5	557.3	638.1
27 mils	0.0283	0.0269	0.0796	49.8	80.7	116.0	120.5	133.7	186.7	204.4	275.1	345.7	416.4	487.1	557.7
30 mils	0.0312	0.0296	0.0782	45.1	73.1	105.2	109.2	121.2	169.3	185.3	249.4	313.5	377.6	441.7	505.8
33 mils	0.0346	0.0329	0.0765	40.5	65.8	94.7	98.3	109.2	152.5	167.0	224.8	282.6	340.4	398.2	456.0
43 mils	0.0451	0.0428	0.0712	30.9	50.3	72.4	75.2	83.5	116.8	127.9	172.2	216.6	260.9	305.3	349.6
54 mils	0.0566	0.0538	0.0849	23.7	39.2	56.8	59.0	65.7	92.2	101.0	136.3	171.7	207.0	242.3	277.7
68 mils	0.0713	0.0677	0.1070	17.8	30.1	44.1	45.8	51.1	72.1	79.2	107.2	135.3	163.3	191.4	219.4
97 mils	0.1017	0.0966	0.1526	11.0	19.6	29.4	30.6	34.3	49.1	54.0	73.7	93.3	113.0	132.7	152.3
118 mils	0.1242	0.1180	0.1863	8.1	15.1	23.2	24.2	27.2	39.3	43.3	59.4	75.5	91.6	107.7	123.8

Notes:

1. Numbers underlined the h/t is greater than 200 and less than 260, therefore studs requires web stiffeners at each end. (See Web Stiffener Details)
2. Numbers with strikethrough h/t greater than 260 and studs with these depths can not to be used.
3. T (mils), 1 mil=0.001 inch; T, (inches) = Design Thickness; t (inches) minimum delivered thickness = 95% Design Thickness.
4. Example Calculation:

Member Depth = 6.00 in.  
 Thickness T = 0.0247 in  
 Radius R = 0.0814 in  
 $h= D-2*(T+R)= 5.7877$  'h' is the flat dimension of the web  
 $h/T = 233.9$  'h/T' > greater than 200: Web Stiffeners Required

**Table 11: Verification Calculations**

**Input items shown in Blue**

End One Flange loading			
N Bearing Length, in.			
<b>1.00</b>	<b>3.625</b>	<b>4.00</b>	<b>6.00</b>
Table C3.4.1-2 Single Web channel and C-Sections			
$\Omega_w =$	<b>1.75</b>	$\Phi =$	<b>90</b>
C	$C_R$	$C_N$	Ch
<b>4</b>	<b>0.14</b>	<b>0.35</b>	<b>0.02</b>

NASPEC: Section C3.4 Web Crippling

C3.4.1 Web Crippling Strength (Resistance) of Webs without Holes

Basic Formula: Eq. C3.4.1-1

$$P_n = C \cdot t^2 \cdot F_y \cdot \sin \Phi \cdot [1 - C_R \cdot (R/t)^{0.5}] \cdot [1 + C_N \cdot (N/t)^{0.5}] \cdot [1 - C_h \cdot (h/t)^{0.5}]$$

Example: Member 6000Sxxx-54			
Depth	Thickness	F <sub>y</sub> , psi	Radius R
<b>6.00</b>	<b>0.0566</b>	<b>50000</b>	<b>0.0849</b>

R/t=	1.5000			
N=	1.00	3.63	4.00	6.00
N/t=	17.668	64.046	70.671	106.007
h=	5.717			
h/t ≤ 200	101.0			
N/t ≤ 210	17.7	64.0	70.7	106.0
N/h ≤ 2.0	0.2	0.6	0.7	1.0
P <sub>n</sub> (lbs) =	1048	1612	1672	1953
P <sub>n</sub> /Ω <sub>w</sub> (lbs) =	<b>599</b>	<b>921</b>	<b>956</b>	<b>1116</b>

Checks with Table11



**Table 11: Verification Calculations**

Interior One Flange loading			
N Bearing Length, in.			
1.00	3.63	4.00	6.00
Table C3.4.1-2 Single Web channel and C-Sections			
$\Omega_w =$	1.65	$\Phi =$	90
C	$C_R$	$C_N$	Ch
<b>13</b>	<b>0.23</b>	<b>0.14</b>	<b>0.01</b>

NASPEC: Section C3.4 Web Crippling

C3.4.1 Web Crippling Strength (Resistance) of Webs without Holes

Basic Formula: Eq. C3.4.1-1

$$P_n = C \cdot t^2 \cdot F_y \cdot \sin \Phi \cdot [1 - C_R \cdot (R/t)^{0.5}] \cdot [1 + C_N \cdot (N/t)^{0.5}] \cdot [1 - C_h \cdot (h/t)^{0.5}]$$

Example: Member 6000Sxxx-54			
Depth	Thickness	F <sub>y</sub> , psi	Radius R
6.00	0.0566	50000	0.0849

R/t=	1.5000			
N=	1.00	3.63	4.00	6.00
N/t=	17.668	64.046	70.671	106.007
h=	5.717			
h/t ≤ 200	101.0			
N/t ≤ 210	17.7	64.0	70.7	106.0
N/h ≤ 2.0	0.2	0.6	0.7	1.0
P <sub>n</sub> (lbs) =	2137	2853	2929	3285
P <sub>n</sub> /Ω <sub>w</sub> (lbs) =	<b>1295</b>	<b>1729</b>	<b>1775</b>	<b>1991</b>

**Checks with Table 11**

**Table 11: Verification Calculations**

<b>End Two Flange loading</b>			
N Bearing Length, in.			
1.00	3.63	4.00	6.00
Table C3.4.1-2 Single Web channel and C-Sections			
$\Omega_w =$	1.75	$\Phi =$	90
C	$C_R$	$C_N$	Ch
<b>7.5</b>	<b>0.08</b>	<b>0.12</b>	<b>0.048</b>

NASPEC: Section C3.4 Web Crippling

C3.4.1 Web Crippling Strength (Resistance) of Webs without Holes

Basic Formula: Eq. C3.4.1-1

$$P_n = C \cdot t^2 \cdot F_y \cdot \sin \Phi \cdot [1 - C_R \cdot (R/t)^{0.5}] \cdot [1 + C_N \cdot (N/t)^{0.5}] \cdot [1 - C_h \cdot (h/t)^{0.5}]$$

<b>Example: Member 6000Sxxx-54</b>			
Depth	Thickness	F <sub>y</sub> , psi	Radius R
6.00	0.0566	50000	0.0849

R/t=	1.5000			
N=	1.00	3.63	4.00	6.00
N/t=	17.668	64.046	70.671	106.007
h=	5.717			
h/t ≤ 200	101.0			
N/t ≤ 210	17.7	64.0	70.7	106.0
N/h ≤ 2.0	0.2	0.6	0.7	1.0
P <sub>n</sub> (lbs) =	844	1100	1127	1254
P <sub>n</sub> /Ω <sub>w</sub> (lbs) =	<b>482</b>	<b>628</b>	<b>644</b>	<b>716</b>

**Checks with Table 11**

**Table 11: Verification Calculations**

<b>Interior Two Flange loading</b>			
N Bearing Length, in.			
1.00	3.63	4.00	6.00
Table C3.4.1-2 Single Web channel and C-Sections			
$\Omega_w =$	1.75	$\Phi =$	90
C	$C_R$	$C_N$	Ch
<b>20</b>	<b>0.1</b>	<b>0.08</b>	<b>0.031</b>

NASPEC: Section C3.4 Web Crippling

C3.4.1 Web Crippling Strength (Resistance) of Webs without Holes

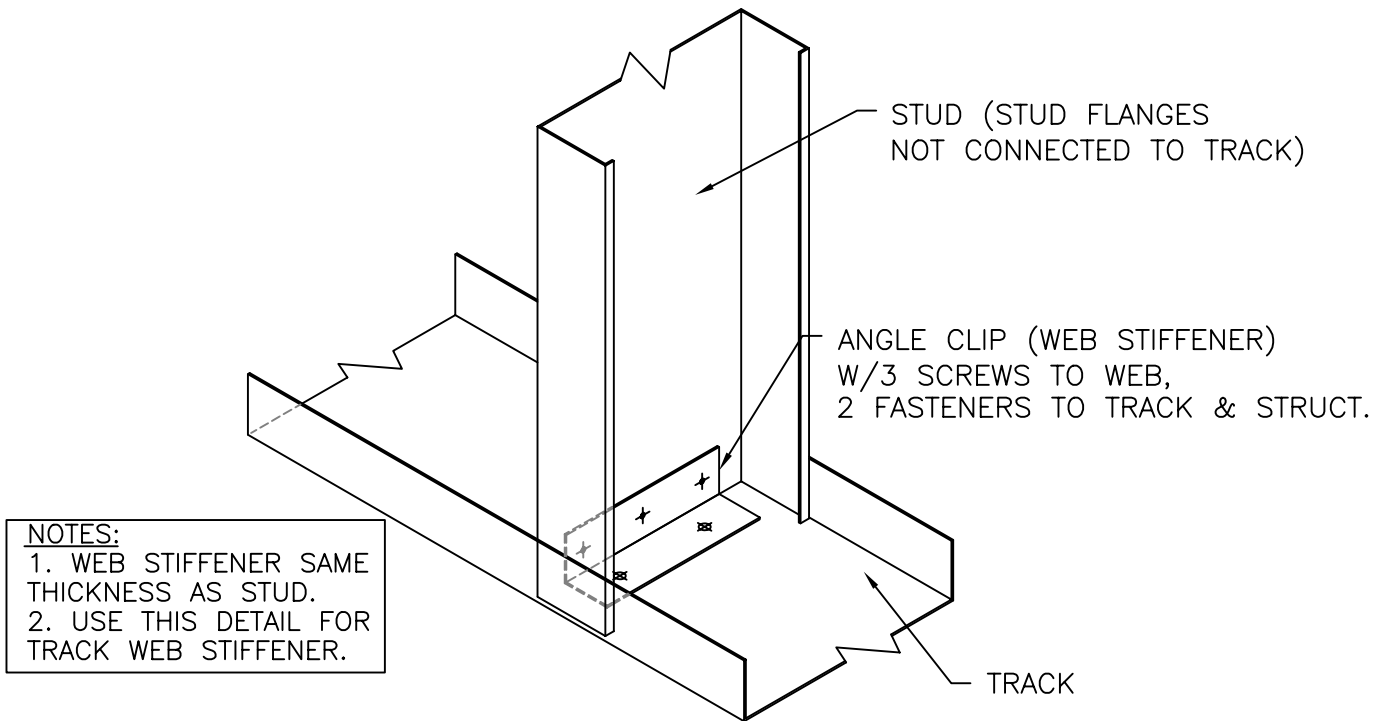
Basic Formula: Eq. C3.4.1-1

$$P_n = C \cdot t^2 \cdot F_y \cdot \sin \Phi \cdot [1 - C_R \cdot (R/t)^{0.5}] \cdot [1 + C_N \cdot (N/t)^{0.5}] \cdot [1 - C_h \cdot (h/t)^{0.5}]$$

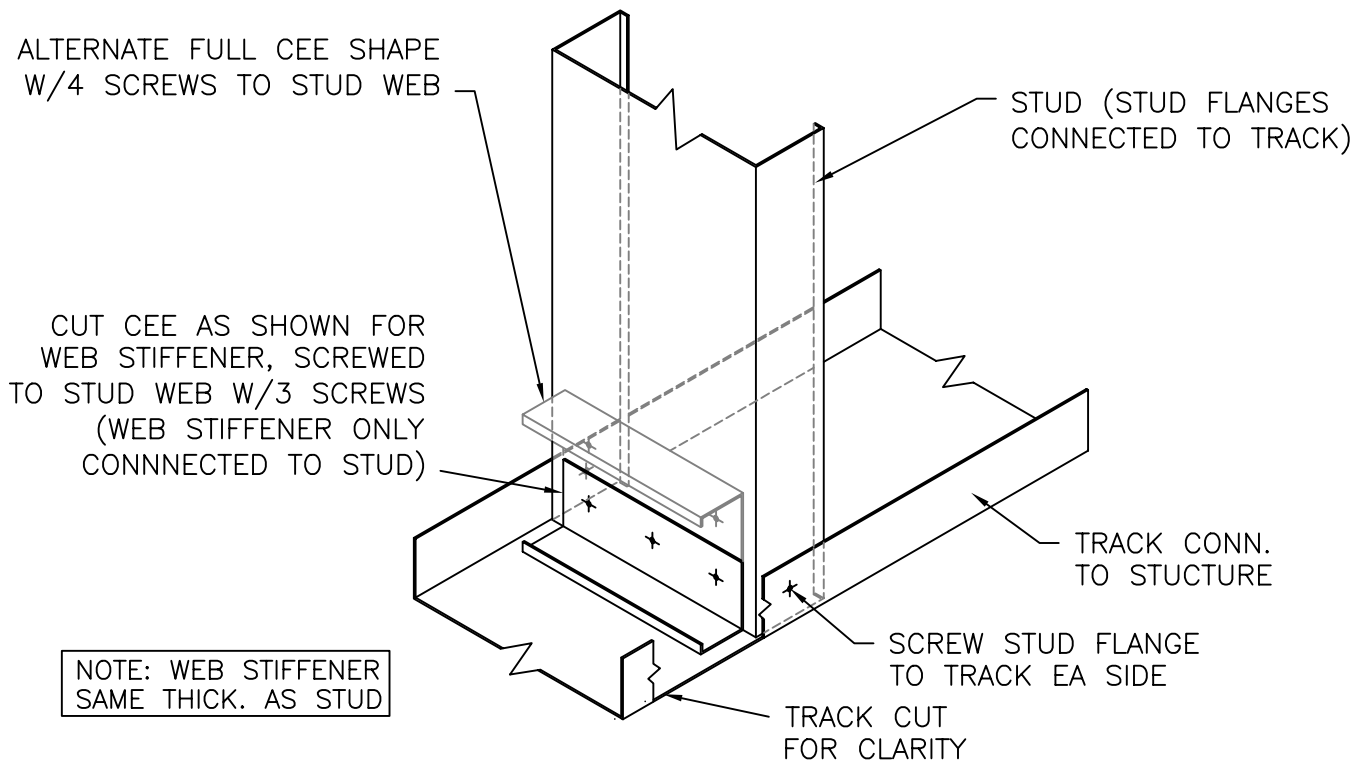
<b>Example: Member 6000Sxxx-54</b>			
Depth	Thickness	F <sub>y</sub> , psi	Radius R
6.00	0.0566	50000	0.0849

R/t=	1.5000			
N=	1.00	3.63	4.00	6.00
N/t=	17.668	64.046	70.671	106.007
h=	5.717			
h/t ≤ 200	101.0			
N/t ≤ 210	17.7	64.0	70.7	106.0
N/h ≤ 2.0	0.2	0.6	0.7	1.0
P <sub>n</sub> (lbs) =	2586	3174	3237	3529
P <sub>n</sub> /Ω <sub>w</sub> (lbs) =	<b>1478</b>	<b>1814</b>	<b>1850</b>	<b>2017</b>

**Checks with Table 11**



DETAIL A (Angle Clip Web Stiffener)



DETAIL A (Cee or Cut Cee Web Stiffener)

TABLE 12--ALLOWABLE WEB CRIPPLING LOADS FOR Z-MEMBERS (kips)

Member Depth-Thickness		EOF, End One Flange												IOF, Interior One Flange						ETF, End Two Flanges						ITF, Interior Two Flanges					
		ΩW = 1.75			Φ= 90			ΩW = 1.65			Φ= 90			ΩW = 1.75			Φ= 90			ΩW = 1.85			Φ= 90								
		C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch						
		4	0.14	0.35	0.02	13	0.23	0.14	0.01	9	0.05	0.16	0.052	24	0.07	0.07	0.052	24	0.07	0.07	0.052	24	0.07	0.07	0.052						
N Bearing Length, in.		N Bearing Length, in.		N Bearing Length, in.		N Bearing Length, in.		N Bearing Length, in.		N Bearing Length, in.		N Bearing Length, in.		N Bearing Length, in.		N Bearing Length, in.		N Bearing Length, in.		N Bearing Length, in.		N Bearing Length, in.		N Bearing Length, in.							
Depth	T, in.	mils	Fy	Radius	1.00	2.50	4.00	6.00	1.00	2.50	4.00	6.00	1.00	2.50	4.00	6.00	1.00	2.50	4.00	6.00	1.00	2.50	4.00	6.00							
1.000	0.0188	18	33	0.0843	0.058	0.082			0.089	0.115			0.077	0.101			0.144	0.172			0.137	0.163	0.183								
1.000	0.0247	24	33	0.0814	0.099	0.138			0.165	0.211			0.126	0.163	0.190		0.245	0.289	0.320		0.245	0.289	0.320								
1.000	0.0247	24	50	0.0814	0.149	0.209			0.251	0.319			0.191	0.248	0.288		0.371	0.438	0.485		0.371	0.438	0.485								
1.000	0.0283	27	33	0.0796	0.127	0.177			0.222	0.281			0.167	0.214	0.248		0.325	0.380	0.420		0.325	0.380	0.420								
1.000	0.0312	30	33	0.0782	0.153	0.213			0.274	0.344			0.203	0.259	0.300		0.398	0.464	0.512		0.398	0.464	0.512								
1.000	0.0346	33	33	0.0764	0.187	0.257			0.342	0.427			0.251	0.318	0.367		0.494	0.573	0.629		0.494	0.573	0.629								
1.000	0.0451	43	33	0.0712	0.307	0.418			0.598	0.736			0.427	0.534	0.611		0.855	0.979	1.067		0.855	0.979	1.067								
1.250	0.0188	18	33	0.0843	0.057	0.080	0.097		0.088	0.114	0.133			0.071	0.093	0.110		0.137	0.163	0.183		0.137	0.163	0.183							
1.250	0.0247	24	33	0.0814	0.097	0.135	0.163		0.164	0.209	0.241			0.126	0.163	0.190		0.245	0.289	0.320		0.245	0.289	0.320							
1.250	0.0247	24	50	0.0814	0.147	0.205	0.248		0.248	0.316	0.365			0.191	0.248	0.288		0.371	0.438	0.485		0.371	0.438	0.485							
1.250	0.0283	27	33	0.0796	0.125	0.174	0.210		0.220	0.278	0.320			0.167	0.214	0.248		0.325	0.380	0.420		0.325	0.380	0.420							
1.250	0.0312	30	33	0.0782	0.151	0.209	0.251		0.272	0.342	0.392			0.203	0.259	0.300		0.398	0.464	0.512		0.398	0.464	0.512							
1.250	0.0346	33	33	0.0764	0.184	0.253	0.304		0.340	0.424	0.485			0.251	0.318	0.367		0.494	0.573	0.629		0.494	0.573	0.629							
1.250	0.0451	43	33	0.0712	0.303	0.413	0.492		0.594	0.731	0.830			0.427	0.534	0.611		0.855	0.979	1.067		0.855	0.979	1.067							
2.000	0.0188	18	33	0.0843	0.054	0.076	0.092	0.109	0.086	0.111	0.129	0.149		0.057	0.075	0.088	0.102	0.119	0.142	0.159	0.177	0.119	0.142	0.159	0.177						
2.000	0.0247	24	33	0.0814	0.092	0.129	0.156	0.184	0.160	0.204	0.236	0.270		0.106	0.137	0.160	0.184	0.218	0.257	0.285	0.316	0.218	0.257	0.285	0.316						
2.000	0.0247	24	50	0.0814	0.140	0.196	0.236	0.279	0.243	0.310	0.357	0.409		0.161	0.208	0.242	0.279	0.331	0.390	0.432	0.478	0.331	0.390	0.432	0.478						
2.000	0.0283	27	33	0.0796	0.120	0.167	0.201	0.237	0.216	0.273	0.314	0.358		0.143	0.183	0.212	0.243	0.292	0.342	0.378	0.417	0.292	0.342	0.378	0.417						
2.000	0.0312	30	33	0.0782	0.145	0.201	0.241	0.284	0.267	0.335	0.385	0.438		0.176	0.225	0.260	0.297	0.361	0.421	0.463	0.510	0.361	0.421	0.463	0.510						
2.000	0.0346	33	33	0.0764	0.177	0.244	0.292	0.344	0.333	0.417	0.476	0.541		0.219	0.278	0.321	0.367	0.451	0.522	0.574	0.629	0.451	0.522	0.574	0.629						
2.000	0.0451	43	33	0.0712	0.293	0.399	0.475	0.557	0.585	0.720	0.817	0.922		0.383	0.478	0.547	0.621	0.792	0.906	0.988	1.076	0.792	0.906	0.988	1.076						
2.000	0.0566	54	33	0.0849	0.440	0.593	0.702	0.820	0.898	1.091	1.231	1.380		0.609	0.752	0.854	0.964	1.265	1.432	1.553	1.682	1.265	1.432	1.553	1.682						
2.000	0.0566	54	50	0.0849	0.667	0.898	1.064	1.243	1.361	1.654	1.865	2.091		0.923	1.139	1.294	1.461	1.917	2.170	2.353	2.549	1.917	2.170	2.353	2.549						
2.500	0.0188	18	33	0.0843	0.052	0.074	0.089	0.106	0.085	0.110	0.128	0.147		0.049	0.065	0.076	0.088	0.109	0.130	0.145	0.162	0.109	0.130	0.145	0.162						
2.500	0.0247	24	33	0.0814	0.090	0.126	0.152	0.179	0.158	0.202	0.233	0.267		0.095	0.123	0.143	0.165	0.203	0.240	0.266	0.294	0.203	0.240	0.266	0.294						
2.500	0.0247	24	50	0.0814	0.136	0.190	0.230	0.272	0.240	0.306	0.353	0.404		0.144	0.187	0.217	0.250	0.308	0.363	0.403	0.446	0.308	0.363	0.403	0.446						
2.500	0.0283	27	33	0.0796	0.117	0.163	0.196	0.231	0.213	0.270	0.310	0.354		0.129	0.166	0.193	0.221	0.275	0.321	0.355	0.391	0.275	0.321	0.355	0.391						
2.500	0.0312	30	33	0.0782	0.141	0.196	0.235	0.277	0.264	0.332	0.380	0.433		0.161	0.205	0.238	0.272	0.340	0.397	0.437	0.480	0.340	0.397	0.437	0.480						

TABLE 12--ALLOWABLE WEB CRIPPLING LOADS FOR Z-MEMBERS (kips)

Member Depth-Thickness		EOF, End One Flange												IOF, Interior One Flange						ETF, End Two Flanges						ITF, Interior Two Flanges					
		ΩW = 1.75			Φ= 90			ΩW = 1.65			Φ= 90			ΩW = 1.75			Φ= 90			ΩW = 1.85			Φ= 90								
		C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch						
		4	0.14	0.35	0.02	13	0.23	0.14	0.01	9	0.05	0.16	0.052	24	0.07	0.07	0.040	N Bearing Length, in.													
Depth	T, in.	mils	Fy	Radius	1.00	2.50	4.00	6.00	1.00	2.50	4.00	6.00	1.00	2.50	4.00	6.00	1.00	2.50	4.00	6.00	1.00	2.50	4.00	6.00							
2.500	0.0346	33	33	0.0764	0.173	0.238	0.285	0.336	0.330	0.412	0.472	0.535	0.202	0.257	0.296	0.338	0.427	0.495	0.544	0.596											
2.500	0.0451	43	33	0.0712	0.287	0.391	0.466	0.547	0.580	0.713	0.810	0.913	0.358	0.448	0.512	0.581	0.756	0.865	0.944	1.028											
2.500	0.0566	54	33	0.0849	0.433	0.583	0.690	0.806	0.891	1.083	1.221	1.369	0.576	0.710	0.807	0.911	1.217	1.377	1.493	1.617											
2.500	0.0566	54	50	0.0849	0.656	0.883	1.046	1.222	1.350	1.640	1.850	2.075	0.872	1.076	1.223	1.381	1.843	2.087	2.262	2.451											
3.500	0.0188	18	33	0.0843	0.049	0.069	0.084	0.100	0.083	0.107	0.124	0.143	0.036	0.048	0.056	0.065	0.092	0.110	0.123	0.136											
3.500	0.0247	24	33	0.0814	0.085	0.120	0.144	0.171	0.155	0.198	0.228	0.261	0.076	0.099	0.115	0.132	0.178	0.210	0.233	0.258											
3.500	0.0247	24	50	0.0814	0.130	0.181	0.219	0.259	0.235	0.299	0.346	0.395	0.116	0.150	0.174	0.200	0.270	0.318	0.353	0.390											
3.500	0.0283	27	33	0.0796	0.112	0.156	0.187	0.221	0.209	0.264	0.304	0.347	0.107	0.137	0.159	0.182	0.244	0.286	0.316	0.348											
3.500	0.0312	30	33	0.0782	0.135	0.188	0.225	0.266	0.259	0.325	0.373	0.425	0.135	0.173	0.200	0.229	0.305	0.355	0.392	0.431											
3.500	0.0346	33	33	0.0764	0.166	0.229	0.274	0.323	0.324	0.405	0.463	0.526	0.173	0.219	0.253	0.289	0.386	0.447	0.491	0.539											
3.500	0.0451	43	33	0.0712	0.278	0.378	0.451	0.528	0.571	0.703	0.798	0.900	0.316	0.395	0.452	0.513	0.696	0.797	0.869	0.947											
3.500	0.0566	54	33	0.0849	0.420	0.566	0.670	0.783	0.879	1.068	1.204	1.351	0.519	0.640	0.728	0.821	1.133	1.283	1.391	1.507											
3.500	0.0566	54	50	0.0849	0.637	0.857	1.016	1.186	1.331	1.618	1.825	2.046	0.786	0.970	1.103	1.245	1.717	1.944	2.108	2.283											
3.500	0.0713	68	33	0.1069	0.637	0.847	0.998	1.160	1.351	1.621	1.816	2.025	0.848	1.033	1.166	1.309	1.844	2.067	2.228	2.400											
3.500	0.0713	68	50	0.1069	0.965	1.283	1.512	1.758	2.047	2.457	2.752	3.068	1.285	1.565	1.766	1.983	2.795	3.132	3.375	3.636											
3.500	0.1017	97	33	0.1525	1.209	1.576	1.841	2.126	2.629	3.095	3.431	3.792	1.777	2.122	2.370	2.637	3.866	4.270	4.562	4.874											
3.500	0.1017	97	50	0.1525	1.831	2.388	2.790	3.221	3.983	4.690	5.199	5.745	2.692	3.215	3.591	3.996	5.857	6.470	6.912	7.386											
4.000	0.0247	24	33	0.0814	0.084	0.117	0.141	0.167	0.154	0.196	0.226	0.258	0.068	0.088	0.102	0.118	0.167	0.197	0.218	0.241											
4.000	0.0247	24	50	0.0814	0.127	0.177	0.214	0.253	0.233	0.296	0.342	0.392	0.103	0.133	0.155	0.178	0.253	0.298	0.331	0.366											
4.000	0.0283	27	33	0.0796	0.109	0.152	0.183	0.217	0.207	0.262	0.301	0.344	0.097	0.124	0.144	0.165	0.230	0.270	0.298	0.328											
4.000	0.0312	30	33	0.0782	0.133	0.184	0.221	0.261	0.257	0.323	0.370	0.421	0.124	0.158	0.183	0.209	0.290	0.337	0.372	0.409											
4.000	0.0346	33	33	0.0764	0.163	0.225	0.269	0.317	0.322	0.402	0.460	0.522	0.160	0.203	0.234	0.267	0.368	0.426	0.468	0.514											
4.000	0.0451	43	33	0.0712	0.274	0.373	0.444	0.520	0.567	0.698	0.792	0.893	0.298	0.372	0.426	0.483	0.670	0.766	0.836	0.911											
4.000	0.0566	54	33	0.0849	0.415	0.558	0.661	0.772	0.873	1.061	1.197	1.342	0.494	0.609	0.693	0.782	1.097	1.242	1.346	1.458											
4.000	0.0566	54	50	0.0849	0.628	0.845	1.002	1.170	1.323	1.608	1.813	2.034	0.748	0.923	1.049	1.185	1.662	1.881	2.040	2.209											
4.000	0.0713	68	33	0.1069	0.629	0.837	0.986	1.147	1.344	1.613	1.806	2.014	0.814	0.991	1.119	1.256	1.793	2.010	2.166	2.333											
4.000	0.0713	68	50	0.1069	0.953	1.268	1.494	1.737	2.036	2.443	2.737	3.051	1.233	1.502	1.695	1.903	2.717	3.045	3.282	3.535											

TABLE 12--ALLOWABLE WEB CRIPPLING LOADS FOR Z-MEMBERS (kips)

Member Depth-Thickness		EOF, End One Flange												IOF, Interior One Flange						ETF, End Two Flanges						ITF, Interior Two Flanges					
		ΩW = 1.75			Φ= 90			ΩW = 1.65			Φ= 90			ΩW = 1.75			Φ= 90			ΩW = 1.85			Φ= 90								
		C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch	C	C <sub>R</sub>	C <sub>N</sub>	Ch						
		4	0.14	0.35	0.02	13	0.23	0.14	0.01	9	0.05	0.16	0.052	24	0.07	0.07	0.040	N Bearing Length, in.													
Depth	T, in.	mils	Fy	Radius	1.00	2.50	4.00	6.00	1.00	2.50	4.00	6.00	1.00	2.50	4.00	6.00	1.00	2.50	4.00	6.00	1.00	2.50	4.00	6.00							
4.000	0.1017	97	33	0.1525	1.197	1.561	1.823	2.105	2.617	3.081	3.415	3.774	1.721	2.055	2.295	2.554	3.780	4.175	4.460	4.766											
4.000	0.1017	97	50	0.1525	1.814	2.365	2.762	3.189	3.965	4.668	5.175	5.718	2.607	3.113	3.478	3.870	5.727	6.326	6.758	7.221											
6.000	0.0312	30	33	0.0782	0.124	0.172	0.206	0.243	0.249	0.313	0.359	0.409	0.085	0.108	0.125	0.143	0.236	0.275	0.303	0.333											
6.000	0.0346	33	33	0.0764	0.153	0.211	0.253	0.297	0.313	0.391	0.447	0.507	0.115	0.146	0.168	0.192	0.305	0.354	0.389	0.426											
6.000	0.0451	43	33	0.0712	0.259	0.353	0.420	0.493	0.553	0.681	0.773	0.872	0.234	0.292	0.334	0.379	0.578	0.662	0.722	0.786											
6.000	0.0566	54	33	0.0849	0.395	0.532	0.631	0.736	0.855	1.039	1.172	1.314	0.408	0.503	0.571	0.645	0.970	1.099	1.191	1.290											
6.000	0.0566	54	50	0.0849	0.599	0.806	0.956	1.116	1.295	1.574	1.775	1.991	0.617	0.762	0.866	0.977	1.470	1.665	1.805	1.955											
6.000	0.0713	68	33	0.1069	0.604	0.802	0.946	1.100	1.319	1.582	1.772	1.976	0.696	0.848	0.957	1.074	1.618	1.813	1.954	2.105											
6.000	0.0713	68	50	0.1069	0.914	1.216	1.433	1.666	1.998	2.397	2.685	2.994	1.055	1.284	1.450	1.627	2.451	2.747	2.960	3.189											
6.000	0.1017	97	33	0.1525	1.157	1.508	1.762	2.034	2.576	3.032	3.361	3.714	1.529	1.826	2.040	2.270	3.486	3.850	4.113	4.395											
6.000	0.1017	97	50	0.1525	1.752	2.285	2.669	3.081	3.902	4.594	5.093	5.628	2.317	2.767	3.091	3.439	5.282	5.834	6.232	6.659											
6.000	0.1242	118	33	0.1863	1.669	2.152	2.500	2.874	3.760	4.392	4.830	5.310	2.351	2.777	3.084	3.414	5.332	5.845	6.215	6.613											
6.000	0.1242	118	50	0.1863	2.528	3.260	3.788	4.354	5.698	6.639	7.318	8.046	3.561	4.208	4.673	5.173	8.079	8.857	9.417	10.019											
8.000	0.0451	43	33	0.0712	0.247	0.336	0.401	0.470	0.542	0.667	0.757	0.854	0.180	0.225	0.258	0.292	0.502	0.574	0.626	0.682											
8.000	0.0566	54	33	0.0849	0.379	0.510	0.605	0.706	0.839	1.020	1.150	1.290	0.335	0.414	0.470	0.531	0.865	0.979	1.061	1.150											
8.000	0.0566	54	50	0.0849	0.575	0.773	0.917	1.070	1.272	1.546	1.743	1.955	0.508	0.627	0.712	0.804	1.310	1.484	1.608	1.742											
8.000	0.0713	68	33	0.1069	0.582	0.774	0.912	1.061	1.297	1.557	1.744	1.944	0.598	0.728	0.822	0.923	1.471	1.649	1.777	1.914											
8.000	0.0713	68	50	0.1069	0.882	1.173	1.382	1.607	1.966	2.359	2.642	2.946	0.906	1.103	1.245	1.398	2.229	2.498	2.692	2.900											
8.000	0.1017	97	33	0.1525	1.123	1.465	1.711	1.975	2.541	2.992	3.316	3.665	1.370	1.636	1.828	2.034	3.242	3.581	3.826	4.088											
8.000	0.1017	97	50	0.1525	1.702	2.219	2.592	2.992	3.850	4.533	5.025	5.553	2.076	2.479	2.770	3.081	4.912	5.426	5.796	6.194											
8.000	0.1242	118	33	0.1863	1.625	2.096	2.435	2.799	3.715	4.329	4.771	5.246	2.141	2.530	2.810	3.110	5.006	5.488	5.835	6.208											
8.000	0.1242	118	50	0.1863	2.462	3.176	3.689	4.241	5.629	6.559	7.229	7.949	3.244	3.833	4.257	4.712	7.584	8.315	8.841	9.406											
10.000	0.0566	54	33	0.0849	0.365	0.491	0.582	0.680	0.826	1.004	1.132	1.269	0.272	0.336	0.381	0.431	0.772	0.874	0.948	1.027											
10.000	0.0566	54	50	0.0849	0.553	0.745	0.882	1.031	1.251	1.521	1.715	1.923	0.412	0.508	0.578	0.652	1.170	1.325	1.436	1.556											
10.000	0.0713	68	33	0.1069	0.563	0.749	0.883	1.027	1.279	1.535	1.719	1.917	0.512	0.623	0.704	0.790	1.343	1.505	1.622	1.748											
10.000	0.0713	68	50	0.1069	0.854	1.135	1.338	1.556	1.938	2.325	2.604	2.904	0.776	0.945	1.066	1.197	2.035	2.281	2.458	2.648											
10.000	0.1017	97	33	0.1525	1.094	1.426	1.666	1.923	2.511	2.956	3.277	3.622	1.231	1.471	1.643	1.828	3.029	3.346	3.574	3.819											
10.000	0.1017	97	50	0.1525	1.657	2.161	2.525	2.914	3.805	4.480	4.966	5.488	1.866	2.228	2.489	2.769	4.590	5.070	5.416	5.787											

TABLE 12--ALLOWABLE WEB CRIPPLING LOADS FOR Z-MEMBERS (kips)

Member Depth-Thickness		EOF, End One Flange			IOF, Interior One Flange			ETF, End Two Flanges			ITF, Interior Two Flanges		
		$\Omega W =$	$C_R$	$\Phi =$	$\Omega W =$	$C$	$C_R$	$\Omega W =$	$C$	$C_R$	$\Omega W =$	$C$	$C_R$
		1.75	0.14	0.35	1.65	13	0.23	1.75	9	0.05	1.85	24	0.07
		$C_N$	Ch	Ch	$C_N$	Ch	Ch	$C_N$	Ch	$C_N$	Ch	$C_N$	Ch
Depth	T, in.	mils	Fy	Radius	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.	N Bearing Length, in.
10.000	0.1242	118	33	0.1863	1.00	2.50	4.00	6.00	6.00	1.00	2.50	4.00	6.00
10.000	0.1242	118	50	0.1863	1.587	2.047	2.379	2.734	2.845	1.959	2.314	2.570	2.845
12.000	0.0713	68	33	0.1069	2.405	3.102	3.604	4.143	4.311	2.968	3.506	3.894	4.311
12.000	0.0713	68	50	0.1069	0.547	0.727	0.857	0.996	0.671	0.435	0.529	0.597	0.671
12.000	0.1017	97	33	0.1525	0.828	1.101	1.298	1.509	1.016	0.658	0.802	0.905	1.016
12.000	0.1017	97	50	0.1525	1.068	1.392	1.626	1.877	1.643	1.107	1.322	1.477	1.643
12.000	0.1242	118	33	0.1863	1.618	2.109	2.464	2.844	2.489	1.677	2.002	2.237	2.489
12.000	0.1242	118	50	0.1863	1.554	2.003	2.328	2.676	2.607	1.795	2.120	2.355	2.607
14.000	0.0713	68	33	0.1069	2.354	3.036	3.527	4.054	3.950	2.719	3.213	3.569	3.950
14.000	0.0713	68	50	0.1069	0.531	0.706	0.832	0.968	0.561	0.364	0.443	0.500	0.561
14.000	0.1017	97	33	0.1525	0.805	1.070	1.261	1.466	0.850	0.551	0.671	0.757	0.850
14.000	0.1017	97	50	0.1525	1.044	1.361	1.590	1.835	1.473	0.993	1.185	1.324	1.473
14.000	0.1242	118	33	0.1863	1.581	2.062	2.408	2.780	2.232	1.504	1.796	2.006	2.232
14.000	0.1242	118	50	0.1863	1.523	1.963	2.281	2.622	2.389	1.645	1.943	2.158	2.389
16.000	0.1017	97	33	0.1525	2.307	2.975	3.456	3.973	3.620	2.492	2.944	3.270	3.620
16.000	0.1017	97	50	0.1525	1.021	1.332	1.555	1.796	1.316	0.886	1.059	1.183	1.316
16.000	0.1242	118	33	0.1863	1.547	2.018	2.357	2.721	1.994	1.343	1.604	1.792	1.994
16.000	0.1242	118	50	0.1863	1.494	1.926	2.238	2.573	2.187	1.506	1.779	1.976	2.187
16.000	0.1242	118	50	0.1863	2.263	2.919	3.391	3.898	3.314	2.281	2.695	2.994	3.314

Notes:

1. The above coefficients apply when  $h/t < 200$ ,  $N/t < 210$ ,  $N/h < 2.0$ ; blanks indicate outside these limits.
2. Coefficient from 2001 NASPEC Table C3.4.1-3, Single Web Z-Section, Fastened to Support.
3. NASPEC Eq. C3.4.1-1 used to calculate ASD values---Web Crippling Strength of Webs without Holes.
4. Z-Member do not have standard web punchouts.
5. Web Stiffeners are required when support reactions, concentrated loads, exceed the above values.



**Table 12: Verification Calculations**

**Input items shown in Blue**

End One Flange loading			
N Bearing Length, in.			
<b>1.00</b>	<b>2.50</b>	<b>4.00</b>	<b>6.00</b>
Table C3.4.1-2 Single Web channel and C-Sections			
$\Omega_w =$	<b>1.75</b>	$\Phi =$	<b>90</b>
C	$C_R$	$C_N$	Ch
<b>4</b>	<b>0.14</b>	<b>0.35</b>	<b>0.02</b>

NASPEC: Section C3.4 Web Crippling

C3.4.1 Web Crippling Strength (Resistance) of Webs without Holes

Basic Formula: Eq. C3.4.1-1

$$P_n = C \cdot t^2 \cdot F_y \cdot \sin \Phi \cdot [1 - C_R \cdot (R/t)^{0.5}] \cdot [1 + C_N \cdot (N/t)^{0.5}] \cdot [1 - C_h \cdot (h/t)^{0.5}]$$

Example: Member 600Zxxx-54			
Depth	Thickness	F <sub>y</sub> , psi	Radius R
<b>6.00</b>	<b>0.0566</b>	<b>50000</b>	<b>0.0849</b>

R/t=	1.5000			
N=	1.00	2.50	4.00	6.00
N/t=	17.668	44.170	70.671	106.007
h=	5.717			
h/t ≤ 200	101.0			
N/t ≤ 210	17.7	44.2	70.7	106.0
N/h ≤ 2.0	0.2	0.4	0.7	1.0
P <sub>n</sub> (lbs) =	1048	1411	1672	1953
P <sub>n</sub> /Ω <sub>w</sub> (lbs)=	<b>599</b>	<b>806</b>	<b>956</b>	<b>1116</b>

**Checks with Table 12**

**Table 12: Verification Calculations**

<b>Interior One Flange loading</b>			
N Bearing Length, in.			
1.00	2.50	4.00	6.00
Table C3.4.1-2 Single Web channel and C-Sections			
$\Omega_w =$	<b>1.65</b>	$\Phi =$	<b>90</b>
C	$C_R$	$C_N$	Ch
<b>13</b>	<b>0.23</b>	<b>0.14</b>	<b>0.01</b>

NASPEC: Section C3.4 Web Crippling

C3.4.1 Web Crippling Strength (Resistance) of Webs without Holes

Basic Formula: Eq. C3.4.1-1

$$P_n = C \cdot t^2 \cdot F_y \cdot \sin \Phi \cdot [1 - C_R \cdot (R/t)^{0.5}] \cdot [1 + C_N \cdot (N/t)^{0.5}] \cdot [1 - C_h \cdot (h/t)^{0.5}]$$

<b>Example: Member 600Zxxx-54</b>			
Depth	Thickness	F <sub>y</sub> , psi	Radius R
6.00	0.0566	50000	0.0849

R/t=	1.5000			
N=	1.00	2.50	4.00	6.00
N/t=	17.668	44.170	70.671	106.007
h=	5.717			
h/t ≤ 200	101.0			
N/t ≤ 210	17.7	44.2	70.7	106.0
N/h ≤ 2.0	0.2	0.4	0.7	1.0
P <sub>n</sub> (lbs) =	2137	2597	2929	3285
P <sub>n</sub> /Ω <sub>w</sub> (lbs)=	<b><u>1295</u></b>	<b><u>1574</u></b>	<b><u>1775</u></b>	<b><u>1991</u></b>

Checks with Table 12

**Table 12: Verification Calculations**

<b>End Two Flange loading</b>			
N Bearing Length, in.			
1.00	2.50	4.00	6.00
Table C3.4.1-2 Single Web channel and C-Sections			
$\Omega_w =$	<b>1.75</b>	$\Phi =$	<b>90</b>
C	$C_R$	$C_N$	Ch
<b>9</b>	<b>0.05</b>	<b>0.16</b>	<b>0.052</b>

NASPEC: Section C3.4 Web Crippling

C3.4.1 Web Crippling Strength (Resistance) of Webs without Holes

Basic Formula: Eq. C3.4.1-1

$$P_n = C \cdot t^2 \cdot F_y \cdot \sin \Phi \cdot [1 - C_R \cdot (R/t)^{0.5}] \cdot [1 + C_N \cdot (N/t)^{0.5}] \cdot [1 - C_h \cdot (h/t)^{0.5}]$$

<b>Example: Member 600Zxxx-54</b>			
Depth	Thickness	$F_y$ , psi	Radius R
6.00	0.0566	50000	0.0849

R/t=	1.5000			
N=	1.00	2.50	4.00	6.00
N/t=	17.668	44.170	70.671	106.007
h=	5.717			
$h/t \leq 200$	101.0			
$N/t \leq 210$	17.7	44.2	70.7	106.0
$N/h \leq 2.0$	0.2	0.4	0.7	1.0
$P_n$ (lbs) =	1081	1333	1515	1710
$P_n/\Omega_w$ (lbs)=	<b>617</b>	<b>762</b>	<b>866</b>	<b>977</b>

Checks with Table 12

**Table 12: Verification Calculations**

<b>Interior Two Flange loading</b>			
N Bearing Length, in.			
1.00	2.50	4.00	6.00
Table C3.4.1-2 Single Web channel and C-Sections			
$\Omega_w =$	<b>1.85</b>	$\Phi =$	<b>90</b>
C	$C_R$	$C_N$	Ch
<b>24</b>	<b>0.07</b>	<b>0.07</b>	<b>0.040</b>

NASPEC: Section C3.4 Web Crippling

C3.4.1 Web Crippling Strength (Resistance) of Webs without Holes

Basic Formula: Eq. C3.4.1-1

$$P_n = C \cdot t^2 \cdot F_y \cdot \sin \Phi \cdot [1 - C_R \cdot (R/t)^{0.5}] \cdot [1 + C_N \cdot (N/t)^{0.5}] \cdot [1 - C_h \cdot (h/t)^{0.5}]$$

<b>Example: Member 600Zxxx-54</b>			
Depth	Thickness	$F_y$ , psi	Radius R
6.00	0.0566	50000	0.0849

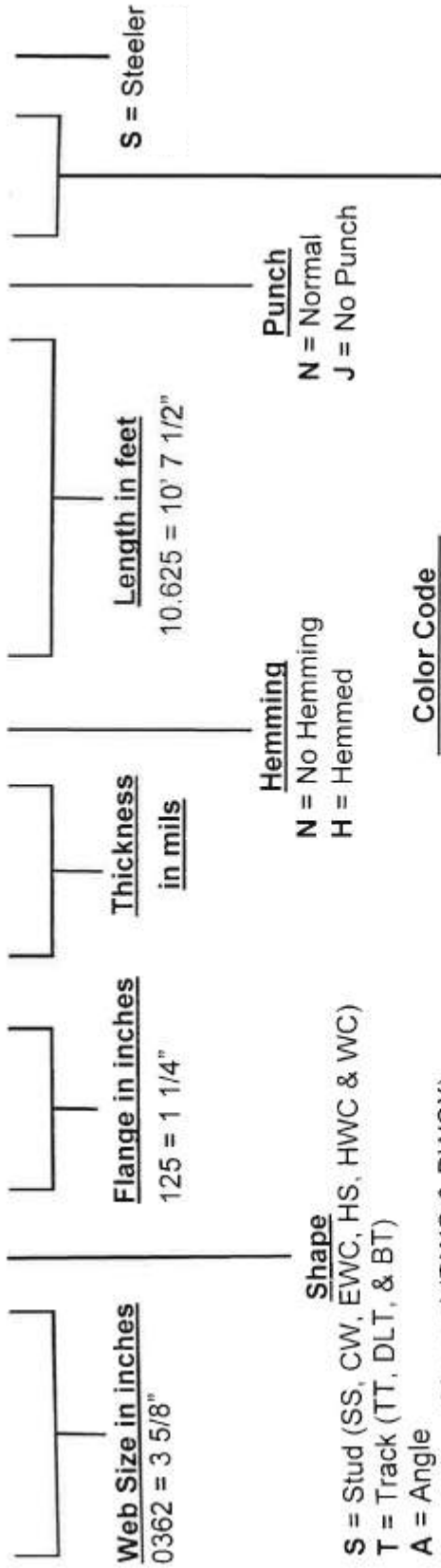
R/t=	1.5000			
N=	1.00	2.50	4.00	6.00
N/t=	17.668	44.170	70.671	106.007
h=	5.717			
$h/t \leq 200$	101.0			
$N/t \leq 210$	17.7	44.2	70.7	106.0
$N/h \leq 2.0$	0.2	0.4	0.7	1.0
$P_n$ (lbs) =	2720	3080	3339	3617
$P_n/\Omega_w$ (lbs)=	<b>1470</b>	<b>1665</b>	<b>1805</b>	<b>1955</b>

Checks with Table 12



PART NUMBER SPECIFICATION

# 0362S125-030N10.625JG4S



- Shape**
- S = Stud (SS, CW, EWC, HS, HWC & WC)
  - T = Track (TT, DLT, & BT)
  - A = Angle
  - F = Furring Channel (DWC & DWCX)
  - H = Shaft Wall Stud (SWS)
  - J = J Track (JT)
  - L = Slip Track (ST)
  - N = Slotted Stud (NS)
  - R = Sound Resilient Channel (SRC)
  - U = Cold Rolled Channel (CRC)
  - Z = Z Furring (ZF)
  - D = Deflection Track (DFT)
  - P = Pony Wall Studs (PWS)
  - C = Slotted Track (CC)
  - I = Steeler Floor Joist
- B\*** = Brake Shape (BS)  
**K\*** = Flat Stock (FS)  
\* use existing part numbers

Color Code

Non-Structural			Structural		
Gage	Mil	Color	Gage	Mil	Color
25-TI	016	Clear / White Stripe	33 ES	028	Purple
25 Ga	018	Clear / (No Paint)	20 Ga	033	White
20-TI	019	Clear / Red Stripe	43 ES	038	Brown
30 ED1	021	Red	18 Ga	043	Yellow
30 ED2	022	Blue	54 ES	048	Lite Blue
30 ED4	024	Orange	16 Ga	054	Green
22 Ga	027	Black	14 Ga	068	Orange
21 Ga	030	Pink	12 Ga	097	Red
			10 Ga	118	Blue

- Finish**
- G4 = G40 Galvanization
  - G6 = G60 Galvanization
  - G9 = G90 Galvanization
  - A4 = A40 Galvanization
  - A6 = A60 Galvanization
  - P4 = G40 Painted Steel
  - P6 = G60 Painted Steel
  - BP = G40 Black Paint

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