

STANDARD ASD LOAD TABLE

STANDARD LRFD LOAD TABLE

FOR TOP CHORD EXTENSIONS (S TYPE) and (R TYPE)

Based on a 50 ksi Maximum Yield Strength
 ASD Load Table adopted by the Steel Joist Institute November 15, 1989
 LRFD Load Table adopted by the Steel Joist Institute May 1, 2000
 Revised to May 18, 2010 – Effective December 31, 2010

Joist extensions are commonly furnished to support a variety of overhang conditions. Two types are pictured below. The first is the TOP CHORD EXTENSION or "S" TYPE, which has only the top chord angles extended. The second is the EXTENDED END or "R" TYPE in which the standard 2½, (64 mm) end bearing depth is maintained over the entire length of the extension. The "S" TYPE extension is so designated because of its Simple nature whereas the "R" TYPE involves Reinforcing the top chord angles. The **specifying professional** should be aware that an "S" TYPE is more economical and should be specified whenever possible.

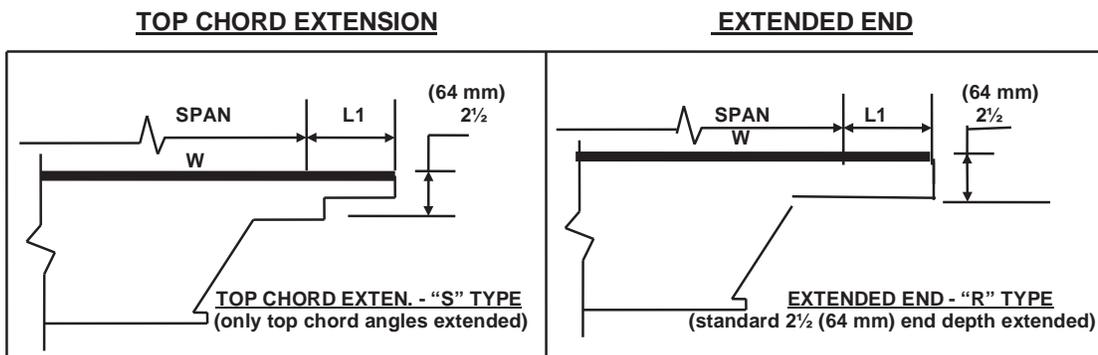
The following load tables are for K-Series TOP CHORD EXTENSIONS and EXTENDED ENDS for **ASD** and **LRFD** methods of design. The tabulated values are the maximum allowable uniform load in pounds per linear foot (kiloNewton/meter). The "S" and "I" numbers shown in the load tables are the Elastic Section Modulus and Moment of Inertia of the extension (Section) number with which they are associated.

In cases where it is not possible to meet specific job requirements with a 2½" (64 mm) deep "R" type extension (refer to "S" and "I" values in the Extended End Load Table), the depth of the extension must be increased to provide greater load-carrying capacity.

The "S" and "R" extension numbers are intended to be associated with Standard K-Series Joist Sizes of matching Section Number. When possible, the extension number should be limited to no more than the Standard K-Series Joist Section Number, for optimum economy.

When TOP CHORD EXTENSIONS or EXTENDED ENDS are specified the bracing requirements must be considered by the specifying professional.

It should be noted that an "R" TYPE extension must be specified when building details dictate a 2½, (64 mm) depth at the end of the extension. In the absence of specific instructions, the joist manufacturer may provide either type.



W = Uniform Load L1= Length of Extension SPAN = See K-Series Standard Specification for Definition of Span



A S D

TOP CHORD EXTENSION LOAD TABLE (R TYPE)
Based on a Yield Strength of 50 ksi
Pounds Per Linear Foot

TYPE	"S" (in. ³)	"I" (in. ⁴)	LENGTH (L1)											
			0'-6"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"
R1	0.895	1.119	550	550	550	550	550	446	332	257	205	167	139	117
R2	0.923	1.157	550	466	228	550	550	460	343	265	211	172	143	121
R3	1.039	1.299	550	550	550	550	550	518	386	299	238	194	161	136
R4	1.147	1.433	550	550	550	550	550	550	426	330	263	214	178	150
R5	1.249	1.561	550	550	550	550	550	550	464	359	286	233	194	164
R6	1.352	1.690	550	550	550	550	550	550	502	389	310	253	210	177
R7	1.422	1.802	550	550	550	550	550	550	528	409	326	266	221	186
R8	1.558	1.948	550	550	550	550	550	550	550	448	357	291	242	204
R9	1.673	2.091	550	550	550	550	550	550	550	481	384	313	260	219
R10	1.931	2.414	550	550	550	550	550	550	550	550	443	361	300	253
R11	2.183	2.729	550	550	550	550	550	550	550	550	501	408	339	287
R12	2.413	3.016	550	550	550	550	550	550	550	550	550	451	375	317

A S D

TOP CHORD EXTENSION LOAD TABLE (S TYPE)
Based on a Maximum Yield Strength of 50 ksi
Pounds Per Linear Foot

TYPE	"S" (in. ³)	"I" (in. ⁴)	LENGTH (L1)									
			0'-6"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	
S1	0.099	0.088	550	363	178	105						
S2	0.127	0.138	550	466	228	135						
S3	0.144	0.156	550	529	259	153						
S4	0.160	0.172	550	550	288	170	112					
S5	0.176	0.188	550	550	316	187	123					
S6	0.192	0.204	550	550	345	204	135					
S7	0.241	0.306	550	550	433	256	169	120				
S8	0.266	0.332	550	550	478	283	187	132				
S9	0.288	0.358	550	550	518	306	202	143	107			
S10	0.380	0.544	550	550	550	404	267	189	141	109		
S11	0.438	0.622	550	550	550	466	307	218	162	126	100	
S12	0.494	0.696	550	550	550	526	347	246	183	142	113	



L R F D

TOP CHORD EXTENSION LOAD TABLE (R TYPE)
Based on a Yield Strength of 50 ksi
Pounds Per Linear Foot

TYPE	"S" (in. ³)	"I" (in. ⁴)	LENGTH (L1)											
			0'-6"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"
R1	0.895	1.119	825	544	825	157	825	669	498	385	307	250	208	175
R2	0.923	1.157	825	700	343	202	825	690	514	399	318	259	216	181
R3	1.039	1.299	825	793	388	229	825	777	579	448	358	292	243	205
R4	1.147	1.433	825	825	825	825	825	825	639	495	394	321	267	225
R5	1.249	1.561	825	825	825	280	184	825	696	538	429	349	291	246
R6	1.352	1.690	825	825	517	825	202	825	753	583	465	379	315	265
R7	1.422	1.802	825	825	649	825	253	825	792	613	489	399	331	279
R8	1.558	1.948	825	825	825	424	280	825	825	672	535	436	363	306
R9	1.673	2.091	825	825	825	825	825	214	160	721	576	469	390	328
R10	1.931	2.414	825	825	825	825	400	283	211	163	664	541	450	379
R11	2.183	2.729	825	825	825	825	460	825	825	825	751	612	508	430
R12	2.413	3.016	825	825	825	825	520	825	274	825	169	676	562	475

L R F D

TOP CHORD EXTENSION LOAD TABLE (S TYPE)
Based on a Yield Strength of 50 ksi
Pounds Per Linear Foot

TYPE	"S" (in. ³)	"I" (in. ⁴)	LENGTH (L1)											
			0'-6"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"			
S1	0.099	0.088	825	544	267	157								
S2	0.127	0.138	825	700	343	202								
S3	0.144	0.156	825	793	388	229								
S4	0.160	0.172	825	825	432	255	168							
S5	0.176	0.188	825	825	474	280	184							
S6	0.192	0.204	825	825	517	306	202							
S7	0.241	0.306	825	825	649	384	253	180						
S8	0.266	0.332	825	825	717	424	280	198						
S9	0.288	0.358	825	825	777	459	303	214	160					
S10	0.380	0.544	825	825	825	606	400	283	211	163				
S11	0.438	0.622	825	825	825	699	460	327	243	189	150			
S12	0.494	0.696	825	825	825	789	520	369	274	213	169			



STANDARD ASD LOAD TABLE

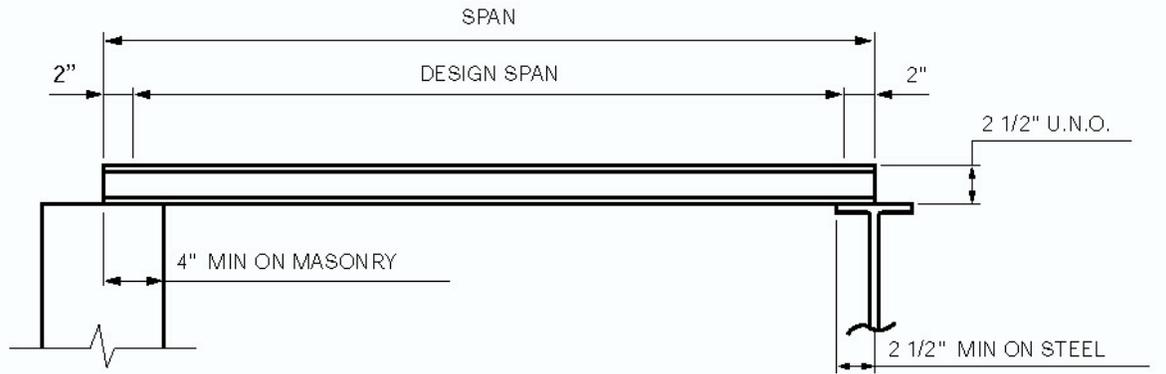
STANDARD LRFD LOAD TABLE

FOR JOIST SUBSTITUTES AND OUTRIGGERS

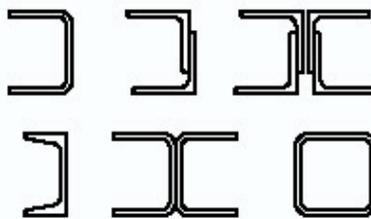
Based on a 50 ksi Maximum Yield Strength
 LRFD Load Table adopted by the Steel Joist Institute May 1, 2001
 Revised to May 18, 2010 – Effective December 31, 2010

JOIST SUBSTITUTES, SIMPLE SPAN LOAD TABLES

Joist substitutes are 2.5 inch (64 mm) deep sections intended for use in very short spans (less than 10 feet (3.05 m)) where Open Web Steel Joists are impractical. They are commonly specified to span over hallways and short spans in skewed bays.



Joist substitutes are solid members that can be manufactured from material conforming to the Steel Joist Institute Standard Specifications and can be made of hot rolled or cold-formed channels or HSS as shown below.



Full lateral support to the compressive flange is provided by attachments to the deck. Caution must be exercised during erection since joist substitutes exhibit some degree of instability. After erection and before loads of any description are placed on the joist substitutes, the ends must be attached to the supports per the SJI Standard Specification for Open Web Steel Joists, K-Series and the deck installed and attached to the top flange.



The Simple Span Joist Substitutes Load Tables list uniform loads based on **LRFD** and **ASD** methods of design and are shown in U.S. Customary Units.

The **BLACK** figures in the **LRFD** Load Table gives the TOTAL safe factored uniformly distributed load-carrying capacity in pounds per linear foot, of 2.5 Inch Joist Substitutes. The **BLACK** figures in the **ASD** Load Table gives the TOTAL safe uniformly distributed load-carrying capacity in pounds per linear foot, of 2.5 Inch Joist Substitutes.

The **RED** figures in the Load Table represent the unfactored, uniform load, in pounds per linear foot, which will produce an approximate joist substitute deflection of 1/360 of the span. This load can be linearly prorated to obtain the unfactored, uniform load for supplementary deflection criteria (i.e. an unfactored uniform load which will produce a joist substitute deflection of 1/240 of the span may be obtained by multiplying the **RED** figure by 360/240). In no case shall the prorated, unfactored load exceed the unfactored TOTAL load-carrying capacity of the joist substitute as given in the **ASD** Load Table for 2.5 Inch Simple Span Joist Substitutes, **K-Series**.

Minimum section properties shall be provided for the particular 2.5K type specified even at shorter spans where the developed load capacity may exceed 550 plf (**ASD**) or 825 plf (**LRFD**).

2.5K JOIST SUBSTITUTES PROPERTIES			
2.5K TYPE	2.5K1	2.5K2	2.5K3
S in ³	0.62	0.86	1.20
I in ⁴	0.77	1.07	1.50
Approximate weight (lbs/ft)	3.0	4.2	6.4

LRFD

LOAD TABLES FOR 2.5 INCH SIMPLE SPAN JOIST SUBSTITUTES, K-SERIES			
Based on a Maximum Yield Strength of 50 ksi			
Designation	2.5K1	2.5K2	2.5K3
Span (ft-in)	Pounds per Linear foot		
4'-0"	825	825	825
	550	550	550
5'-0"	825	825	825
	326	452	550
6'-0"	579	804	825
	182	253	354
7'-0"	418	580	810
	112	155	218
8'-0"	316	439	612
	73	102	143
9'-0"	0	343	480
	0	71	99
10'-0"	0	0	385
	0	0	71

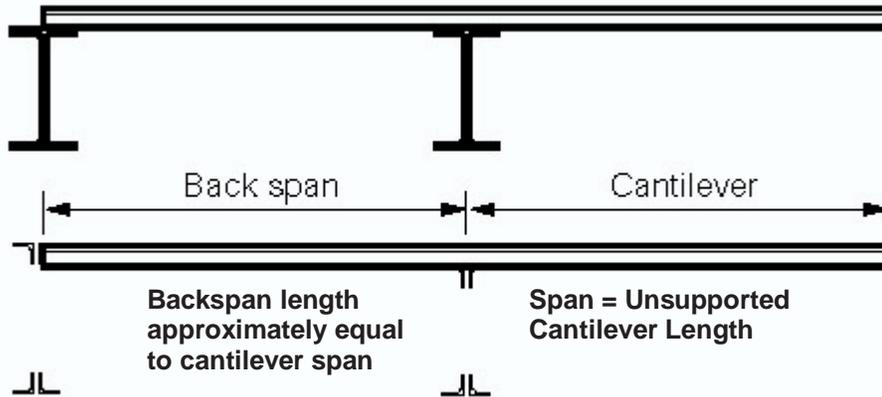
ASD

LOAD TABLES FOR 2.5 INCH SIMPLE SPAN JOIST SUBSTITUTES, K-SERIES			
Based on a Maximum Yield Strength of 50 ksi			
Designation	2.5K1	2.5K2	2.5K3
Span (ft-in)	Pounds per Linear Foot		
4'-0"	550	550	550
	550	550	550
5'-0"	550	550	550
	326	452	550
6'-0"	386	536	550
	182	253	354
7'-0"	279	387	540
	112	155	218
8'-0"	211	293	408
	73	102	143
9'-0"	0	229	320
	0	71	99
10'-0"	0	0	257
	0	0	71



JOIST SUBSTITUTES, OUTRIGGERS LOAD TABLES

Joist substitutes may be used in an outrigger condition where the member is overhanging one support as illustrated below where a portion is the back span and the remainder is the cantilever span or outrigger. Joist substitutes used in this configuration are 2.5 inch (64 mm) deep sections.



The Joist Outriggers Load Tables list uniform loads based on **LRFD** and **ASD** methods of design and are shown in U.S. Customary

The **BLACK** figures in the **LRFD** Load Table gives the TOTAL safe factored uniformly distributed load-carrying capacity in pounds per linear foot, of 2.5 Inch Joist Outriggers. The **BLACK** figures in the **ASD** Load Table gives the TOTAL safe uniformly distributed load-carrying capacity in pounds per linear foot, of 2.5 Inch Joist Outriggers.

Serviceability requirements must be checked by the specifying professional. When calculating the actual live load deflection at the end of the cantilever it is necessary to consider the length of the back span.

Minimum section properties shall be provided for the particular 2.5K type specified even at shorter spans where the developed load capacity may exceed 550 plf (**ASD**) or 825 plf (**LRFD**).



LRFD

LOAD TABLES FOR 2.5 INCH JOIST OUTRIGGERS, K-SERIES									
OUTRIGGER TYPE	TOTAL ALLOWABLE LOAD FOR UNSUPPORTED CANTILEVER PLF								
	SPAN ft-in								
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"
2.5K1	825	744	516	379	291	229	186	153	129
2.5K2	825	825	717	526	403	318	258	213	179
2.5K3	825	825	825	735	562	444	360	297	250

ASD

LOAD TABLES FOR 2.5 INCH JOIST OUTRIGGERS, K-SERIES									
OUTRIGGER TYPE	TOTAL ALLOWABLE LOAD FOR UNSUPPORTED CANTILEVER PLF								
	SPAN ft-in								
	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"
2.5K1	550	496	344	253	194	153	124	102	86
2.5K2	550	550	478	351	269	212	172	142	119
2.5K3	550	550	550	490	375	296	240	198	167

