

### ASCE 7-10 Load Combination Computations

This spreadsheet will compute the load combination for up to seven load sources. Each line in the combination table represents on loading combination. (See A Beginners Guide to ASCE 7-10 for equation defini Do NOT mix values from different lines when creating your beam loading diagrams.

- No** Live Load < 100 psf and not a garage or place of public assembly
- No** Are flood loads included?
- Yes** Is the structure in a V-Zone or Coastal-A zone?

LRFD Load Factor for H (See ASCE 7-10 2.3.2): **0.9**  
 ASD Load Factor for H (See ASCE 7-10 2.4.1): 0.6

Loads	Identifier	Source 1	Source 2	Source 3	Source 4	Source 5	Source 6	Source 7
	Units	kif	kif	kif	k			
Dead	D	1.15	8	0	0	0	0	0
Live	L	1.85	0	0	0	0	0	0
Roof Live	Lr	0	4.8	0	0	0	0	0
Soil Loads	H	0	0	0	0	0	0	0
Snow	S	0	20	0	0	0	0	0
Rain	R	0	0	0	0	0	0	0
Flood	Fa	0	0	0	0	0	0	0
Atmospheric Ice	Di	0	0	0	0	0	0	0
Wind	W	0	0	15	0	0	0	0
Wind on Ice	Wi	0	0	0	0	0	0	0
Earthquake	E	0	0	25	0	0	0	0
<b>LRFD</b>	max value	1.9	11.2	0.35	45.2	0	0	0
	min value	0.765	7.2	-0.35	10.8	0	0	0
	LRFD-LC1	1.61	11.2	0	0	0	0	0
	LRFD-LC2a	4.34	12	0	0	0	0	0
	LRFD-LC2b	4.34	19.6	0	0	0	0	0
	LRFD-LC2c	4.34	9.6	0	0	0	0	0
	LRFD-LC2i	4.34	9.6	0	0	0	0	0
	LRFD-LC3a	3.23	17.28	0	0	0	0	0
	LRFD-LC3b	1.38	17.28	7.5	0	0	0	0
	LRFD-LC3c	1.38	17.28	-7.5	0	0	0	0
	LRFD-LC3d	3.23	41.6	0	0	0	0	0
	LRFD-LC3e	1.38	41.6	7.5	0	0	0	0
	LRFD-LC3f	1.38	41.6	-7.5	0	0	0	0
	LRFD-LC3g	3.23	9.6	0	0	0	0	0
	LRFD-LC3h	1.38	9.6	7.5	0	0	0	0
	LRFD-LC3i	1.38	9.6	-7.5	0	0	0	0
	LRFD-LC4a	3.23	12	15	0	0	0	0
	LRFD-LC4b	3.23	12	-15	0	0	0	0
	LRFD-LC4c	3.23	19.6	15	0	0	0	0
	LRFD-LC4d	3.23	19.6	-15	0	0	0	0
	LRFD-LC4e	3.23	9.6	15	0	0	0	0
	LRFD-LC4f	3.23	9.6	-15	0	0	0	0
	LRFD-LC4ice1	3.23	19.6	0	0	0	0	0
	LRFD-LC4ice2	3.23	19.6	0	0	0	0	0
	LRFD-LC5a	3.23	13.6	25	0	0	0	0
	LRFD-LC5b	3.23	13.6	-25	0	0	0	0
	LRFD-LC6a	1.035	7.2	15	0	0	0	0
	LRFD-LC6b	1.035	7.2	-15	0	0	0	0
	LRFD-LC6i1	1.035	7.2	0	0	0	0	0
	LRFD-LC6i2	1.035	7.2	0	0	0	0	0
	LRFD-LC7a	1.035	7.2	25	0	0	0	0
	LRFD-LC7b	1.035	7.2	-25	0	0	0	0
<b>ASD</b>	max value	1.4	8.85	0.25	0	0	0	0
	min value	0.51	4.8	-0.25	0	0	0	0
	ASD-LC1	1.15	8	0	0	0	0	0
	ASD-LC2	3	8	0	0	0	0	0
	ASD-LC2i	3	8	0	0	0	0	0
	ASD-LC3a	1.15	12.8	0	0	0	0	0
	ASD-LC3b	1.15	28	0	0	0	0	0
	ASD-LC3c	1.15	8	0	0	0	0	0
	ASD-LC3i	1.15	28	0	0	0	0	0
	ASD-LC4a	2.5375	11.6	0	0	0	0	0
	ASD-LC4b	2.5375	23	0	0	0	0	0
	ASD-LC4c	2.5375	8	0	0	0	0	0
	ASD-LC5a	1.15	8	15	0	0	0	0
	ASD-LC5b	1.15	8	-15	0	0	0	0
	ASD-LC5c	1.15	8	17.5	0	0	0	0
	ASD-LC5d	1.15	8	17.5	0	0	0	0
	ASD-LC6a1	2.5375	11.6	6.75	0	0	0	0
	ASD-LC6a2	2.5375	11.6	-6.75	0	0	0	0
	ASD-LC6a3	2.5375	23	6.75	0	0	0	0
	ASD-LC6a4	2.5375	23	-6.75	0	0	0	0
	ASD-LC6a5	2.5375	8	6.75	0	0	0	0
	ASD-LC6a6	2.5375	8	-6.75	0	0	0	0
	ASD-LC6b1	2.5375	26.6	13.125	0	0	0	0
	ASD-LC6b2	2.5375	26.6	-13.125	0	0	0	0
	ASD-LC7a	0.69	4.8	9	0	0	0	0
	ASD-LC7b	0.69	4.8	-9	0	0	0	0
	ASD-LC7i1	0.69	4.8	0	0	0	0	0
	ASD-LC7i2	0.69	4.8	0	0	0	0	0
	ASD-LC8a	0.69	4.8	17.5	0	0	0	0
	ASD-LC8b	0.69	4.8	-17.5	0	0	0	0

tions.)

Load Combination Coefficients

		D	L	Lr	H	S	R	Fa	Di	W	Wi	E	
<b>LRFD</b>	LRFD-LC1	1.4	0	0	0	0	0	0	0	0	0	0	
	LRFD-LC2a	1.2	1.6	0.5	0.9	0	0	0	0	0	0	0	
	LRFD-LC2b	1.2	1.6	0	0.9	0.5	0	0	0	0	0	0	
	LRFD-LC2c	1.2	1.6	0	0.9	0	0.5	0	0	0	0	0	
	LRFD-LC2i	1.2	1.6	0	0.9	0	0	0	0.2	0	0	0	
	LRFD-LC3a	1.2	1	1.6	0.9	0	0	0	0	0	0	0	
	LRFD-LC3b	1.2	0	1.6	0.9	0	0	0	0	0.5	0	0	
	LRFD-LC3c	1.2	0	1.6	0.9	0	0	0	0	0	-0.5	0	
	LRFD-LC3d	1.2	1	0	0.9	1.6	0	0	0	0	0	0	
	LRFD-LC3e	1.2	0	0	0.9	1.6	0	0	0	0	0.5	0	
	LRFD-LC3f	1.2	0	0	0.9	1.6	0	0	0	0	-0.5	0	
	LRFD-LC3g	1.2	1	0	0.9	0	1.6	0	0	0	0	0	
	LRFD-LC3h	1.2	0	0	0.9	0	1.6	0	0	0	0.5	0	
	LRFD-LC3i	1.2	0	0	0.9	0	1.6	0	0	0	-0.5	0	
	LRFD-LC4a	1.2	1	0.5	0.9	0	0	0	0	0	1	0	
	LRFD-LC4b	1.2	1	0.5	0.9	0	0	0	0	0	-1	0	
	LRFD-LC4c	1.2	1	0	0.9	0.5	0	0	0	0	1	0	
	LRFD-LC4d	1.2	1	0	0.9	0.5	0	0	0	0	-1	0	
	LRFD-LC4e	1.2	1	0	0.9	0	0.5	0	0	0	1	0	
	LRFD-LC4f	1.2	1	0	0.9	0	0.5	0	0	0	-1	0	
	LRFD-LC4ice1	1.2	1	0	0.9	0.5	0	0	0	1	0	1	
	LRFD-LC4ice2	1.2	1	0	0.9	0.5	0	0	0	1	0	-1	
	LRFD-LC5a	1.2	1	0	0.9	0.2	0	0	0	0	0	0	
	LRFD-LC5b	1.2	1	0	0.9	0.2	0	0	0	0	0	0	
	LRFD-LC6a	0.9	0	0	0.9	0	0	0	0	0	1	0	
	LRFD-LC6b	0.9	0	0	0.9	0	0	0	0	0	-1	0	
	LRFD-LC6i1	0.9	0	0	0.9	0	0	0	0	1	0	1	
	LRFD-LC6i2	0.9	0	0	0.9	0	0	0	0	1	0	-1	
	LRFD-LC7a	0.9	0	0	0.9	0	0	0	0	0	0	0	
	LRFD-LC7b	0.9	0	0	0.9	0	0	0	0	0	0	0	
	<b>ASD</b>	ASD-LC1	1	0	0	0	0	0	0	0	0	0	0
		ASD-LC2	1	1	0	0.6	0	0	0	0	0	0	0
ASD-LC2i		1	1	0	0.6	0	0	0	0.7	0	0	0	
ASD-LC3a		1	0	1	0.6	0	0	0	0	0	0	0	
ASD-LC3b		1	0	0	0.6	1	0	0	0	0	0	0	
ASD-LC3c		1	0	0	0.6	0	1	0	0	0	0	0	
ASD-LC3i		1	0	0	0.6	1	0	0	0.7	0	0.7	0	
ASD-LC4a		1	0.75	0.75	0.6	0	0	0	0	0	0	0	
ASD-LC4b		1	0.75	0	0.6	0.75	0	0	0	0	0	0	
ASD-LC4c		1	0.75	0	0.6	0	0.75	0	0	0	0	0	
ASD-LC5a		1	0	0	0.6	0	0	0	0	0	1	0	
ASD-LC5b		1	0	0	0.6	0	0	0	0	0	-1	0	
ASD-LC5c		1	0	0	0.6	0	0	0	0	0	0	0.7	
ASD-LC5d		1	0	0	0.6	0	0	0	0	0	0	0.7	
ASD-LC6a1		1	0.75	0.75	0.6	0	0	0	0	0	0.45	0	
ASD-LC6a2		1	0.75	0.75	0.6	0	0	0	0	0	-0.45	0	
ASD-LC6a3		1	0.75	0	0.6	0.75	0	0	0	0	0.45	0	
ASD-LC6a4		1	0.75	0	0.6	0.75	0	0	0	0	-0.45	0	
ASD-LC6a5		1	0.75	0	0.6	0	0.75	0	0	0	0.45	0	
ASD-LC6a6		1	0.75	0	0.6	0	0.75	0	0	0	-0.45	0	
ASD-LC6b1		1	0.75	0.75	0.6	0.75	0	0	0	0	0	0	
ASD-LC6b2		1	0.75	0.75	0.6	0.75	0	0	0	0	0	0	
ASD-LC7a		0.6	0	0	0.6	0	0	0	0	0	0.6	0	
ASD-LC7b		0.6	0	0	0.6	0	0	0	0	0	-0.6	0	
ASD-LC7i1		0.6	0	0	0.6	0	0	0	0	0.7	0	0.7	
ASD-LC7i2		0.6	0	0	0.6	0	0	0	0	0.7	0	-0.7	
ASD-LC8a		0.6	0	0	0.6	0	0	0	0	0	0	0	
ASD-LC8b		0.6	0	0	0.6	0	0	0	0	0	0	0	