

SECTION PROPERTIES

fy=40 ksi

GAGE	Wd	Ip	In	Sp	Sn	Rbe			Rbi			Va
						2"	3"	4"	4"	5"	6"	
22	2.22	0.422	0.334	0.306	0.273	976	1124	1248	1848	1993	2124	3869
20	2.70	0.511	0.434	0.390	0.346	1390	1593	1765	2623	2822	3002	4672
18	3.56	0.674	0.627	0.514	0.474	2315	2637	2909	4355	4668	4952	6131
16	4.49	0.848	0.828	0.646	0.614	3530	3999	4395	6624	7079	7490	7660



LSD DESIGN		MAXIMUM SUPERIMPOSED UNIFORM LSD LOADS (psf)											
Span	Load Combinations	SINGLE SPAN				DOUBLE SPAN				TRIPLE SPAN			
		GAGE											
		22	20	18	16	22	20	18	16	22	20	18	16
8' - 6"	$\alpha_D D + \alpha_L L$ (Strength)	99	126	166	209	84**	110**	152**	196**	104**	138**	190**	246**
	D+L (Deflection)	43	52	69	86	84	110	152	196	83	100	132	166
	L (Deflection)	30	36	48	60	71	87	114	144	57	69	91	114
9' - 0"	$\alpha_D D + \alpha_L L$ (Strength)	88	112	148	186	75**	98**	135**	175**	94**	123**	169**	219**
	D+L (Deflection)	36	43	57	72	75	98	135	175	69	84	111	139
	L (Deflection)	25	31	40	51	60	73	96	121	48	58	76	96
9' - 6"	$\alpha_D D + \alpha_L L$ (Strength)	79	100	132	166	67**	88**	121**	156**	84**	110**	152**	196**
	D+L (Deflection)	30	36	48	60	67	88	119	150	59	71	94	118
	L (Deflection)	22	26	34	43	51	62	82	103	41	49	65	82
10' - 0"	$\alpha_D D + \alpha_L L$ (Strength)	71	90	119	150	61**	79**	109**	141**	76**	99**	136**	177**
	D+L (Deflection)	25	31	41	51	61	77	102	128	50	61	80	100
	L (Deflection)	18	22	30	37	44	53	70	88	35	42	56	70
10' - 6"	$\alpha_D D + \alpha_L L$ (Strength)	64	81	108	135	55**	71**	98**	127**	69**	90**	123**	160**
	D+L (Deflection)	22	26	35	44	55	66	87	110	43	52	68	86
	L (Deflection)	16	19	26	32	38	46	61	76	30	36	48	60
11' - 0"	$\alpha_D D + \alpha_L L$ (Strength)	58	74	98	123	50**	65**	89**	116**	63**	82**	112**	145**
	D+L (Deflection)	19	23	30	37	47	57	76	95	37	45	59	74
	L (Deflection)	14	17	22	28	33	40	53	66	26	32	42	53
11' - 6"	$\alpha_D D + \alpha_L L$ (Strength)	53	67	89	112	46**	59**	81**	105**	58**	75**	102**	133**
	D+L (Deflection)	16	19	26	32	41	50	66	83	32	39	51	64
	L (Deflection)	12	15	19	24	29	35	46	58	23	28	37	46
12' - 0"	$\alpha_D D + \alpha_L L$ (Strength)	48	62	81	102	42**	54**	74**	96**	53**	68**	94**	121**
	D+L (Deflection)	14	17	22	28	36	43	57	72	28	34	45	56
	L (Deflection)	11	13	17	21	25	31	41	51	20	24	32	40
12' - 6"	$\alpha_D D + \alpha_L L$ (Strength)	44	56	75	94	38**	50**	68**	88**	49**	63**	86**	112**
	D+L (Deflection)	12	14	19	24	31	38	50	63	24	30	39	49
	L (Deflection)	9	11	15	19	22	27	36	45	18	22	28	36
13' - 0"	$\alpha_D D + \alpha_L L$ (Strength)	41	52	69	86	35**	46**	63**	81**	45**	58**	79**	103**
	D+L (Deflection)	10	13	17	21	28	34	44	56	22	26	34	43
	L (Deflection)	8	10	13	17	20	24	32	40	16	19	25	32
13' - 6"	$\alpha_D D + \alpha_L L$ (Strength)	38	48	63	79	33**	42**	58**	75**	41**	53**	73**	95**
	D+L (Deflection)	9	11	14	18	25	30	39	49	19	23	30	38
	L (Deflection)	8	9	12	15	18	22	29	36	14	17	23	28
14' - 0"	$\alpha_D D + \alpha_L L$ (Strength)	35	44	59	74	30**	39**	53**	69**	38**	49**	68**	88**
	D+L (Deflection)	8	10	13	16	22	26	35	44	17	20	27	34
	L (Deflection)	7	8	11	14	16	19	26	32	13	15	20	25
14' - 6"	$\alpha_D D + \alpha_L L$ (Strength)	32	41	54	68	28**	36**	50**	64**	36**	46**	63**	82**
	D+L (Deflection)	7	8	11	14	19	23	31	39	15	18	24	30
	L (Deflection)	6	7	10	12	14	17	23	29	11	14	18	23
15' - 0"	$\alpha_D D + \alpha_L L$ (Strength)	30	38	50	63	26**	33**	46**	60**	33**	43**	59**	76**
	D+L (Deflection)	6	7	10	12	17	21	28	35	13	16	21	27
	L (Deflection)	5	7	9	11	13	16	21	26	10	12	16	21

8' - 6"	$\alpha_D D + \alpha_L L$ (Strength)	99	← Max. superimposed factored LSD dead + live load (psf) (governed by strength limitation)
	D+L (Deflection)	43	← Max. superimposed unfactored LSD dead + live load (psf) (governed by deflection limitation of L/240)
	L (Deflection)	30	← Max. superimposed unfactored LSD live load (psf) (governed by deflection limitation of L/360)
			← Vertical load span (center to center spacing)

- Wd** Weight of deck (uncoated), psf
- Ip** Moment of inertia for positive bending per foot of deck width, (in⁴)/ft
- In** Moment of inertia for negative bending per foot of deck width, (in⁴)/ft
- Sp** Section modulus for positive bending per foot of deck width, (in³)/ft
- Sn** Section modulus for negative bending per foot of deck width, (in³)/ft
- α_D, α_L Load factors for D & L loads to be applied by Engineer in accordance with Building Codes.
- Rbe** Allowable exterior web crippling value per foot of deck width, pif
- Rbi** Allowable interior web crippling value per foot of deck width, pif
- Va** Allowable shear value per foot of deck width, pif
- D** Uniform dead load, psf
- L** Uniform live load, psf

Notes:

- Bending strength based on allowable flexural stress of 36 ksi.
- Loads marked with asterisk (*) are governed by interior reactions (web crippling) assuming 4" of interior bearing.
- Loads marked with two asterisks (**) are governed by moment & shear or moment & reactions (web crippling) assuming 4" of interior bearing.
- An upper limit of 400 psf has been applied to the loads.
- Deck length over 45'-0" require inquiry and special accommodations. Please contact the Metal-Dek Group® for further information.

The section properties table is based on 2001 AISI's North American Specification for the Design of Cold-Formed Steel Structural Members (2004 Supplement). Loads are calculated in accordance with requirements of CSSBI 10M-06. *Standard for Steel Roof Deck*. Acoustical profile is also available.