Metal Dek Group®
a unit of CSI®

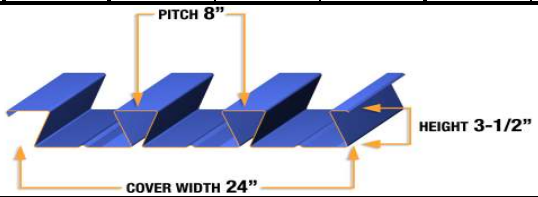
VERSA-DEK® 3.5 LS ROOF (LSD)

3-1/2" high x 8" pitch x 24" wide

SECTION PROPERTIES

fy=40 ksi

GAGE	Wd	Ip	Sp	Sn	Rbe			Rbi			Va
					2"	3"	4"	4"	5"	6"	
20	3.33	1.917	0.767	0.820	927	1062	1177	1886	2029	2159	4633
18	4.40	2.648	1.109	1.190	1565	1783	1966	3136	3362	3566	8121
16	5.54	3.394	1.504	1.540	2409	2729	2999	4776	5103	5400	11349



LSD DESIGN		MAXIMUM SUPERIMPOSED UNIFORM LSD LOADS (psf)								
		SINGLE SPAN			DOUBLE SPAN			TRIPLE SPAN		
Span	Load Combinations	GAGE								
		20	18	16	20	18	16	20	18	16
10' - 0"	α_DD+α_LL (Strength)	180	261	354	134**	217**	312**	163**	265**	383**
	D+L (Deflection)	123	169	217	134	217	312	163	265	383
	L (Deflection)	84	116	149	134	217	312	158	218	280
11' - 0"	α_DD+α_LL (Strength)	148	214	291	114**	184**	263**	139**	225**	324**
	D+L (Deflection)	91	126	162	114	184	263	139	225	310
	L (Deflection)	63	87	112	114	184	263	119	164	210
12' - 0"	α_DD+α_LL (Strength)	124	179	244	98**	157**	225**	120**	194**	277**
	D+L (Deflection)	70	96	123	98	157	225	120	185	237
	L (Deflection)	49	67	86	98	157	204	91	126	162
13' - 0"	α_DD+α_LL (Strength)	105	152	207	85**	136**	194**	104**	168**	240**
	D+L (Deflection)	54	75	96	85	136	194	104	145	186
	L (Deflection)	38	53	68	85	125	161	72	99	127
14' - 0"	α_DD+α_LL (Strength)	90	130	177	74**	119**	169**	91**	147**	209**
	D+L (Deflection)	43	59	76	74	119	169	83	115	147
	L (Deflection)	31	42	54	73	100	129	58	80	102
15' - 0"	α_DD+α_LL (Strength)	78	113	154	65**	104**	148**	80**	129**	184**
	D+L (Deflection)	34	47	60	65	104	148	67	93	119
	L (Deflection)	25	34	44	59	82	105	47	65	83
16' - 0"	α_DD+α_LL (Strength)	68	98	134	57**	92**	130**	71**	115**	163**
	D+L (Deflection)	27	38	49	57	92	124	55	76	97
	L (Deflection)	20	28	36	49	67	86	39	53	68
17' - 0"	α_DD+α_LL (Strength)	60	87	118	51**	82**	116**			
	D+L (Deflection)	22	31	40	51	80	102			
	L (Deflection)	17	24	30	41	56	72			
18' - 0"	α_DD+α_LL (Strength)	53	77	104	46**	73**	103**			
	D+L (Deflection)	18	25	33	46	66	85			
	L (Deflection)	14	20	25	34	47	61			
19' - 0"	α_DD+α_LL (Strength)	47	68	93	41**	66**	93**			
	D+L (Deflection)	15	21	27	40	56	72			
	L (Deflection)	12	17	22	29	40	51			
20' - 0"	α_DD+α_LL (Strength)	42	61	83	37**	59**	83**			
	D+L (Deflection)	12	17	22	34	47	61			
	L (Deflection)	10	14	19	25	34	44			
21' - 0"	α_DD+α_LL (Strength)	38	55	75	33**	54**	75**			
	D+L (Deflection)	10	14	19	29	40	52			
	L (Deflection)	9	13	16	22	30	38			
22' - 0"	α_DD+α_LL (Strength)	34	49	68	30**	49**	68**			
	D+L (Deflection)	8	12	15	25	34	44			
	L (Deflection)	8	11	14	19	26	33			
23' - 0"	α_DD+α_LL (Strength)	31	45	61	28**	44**	62**			
	D+L (Deflection)	7	10	13	21	30	38			
	L (Deflection)	7	10	12	16	23	29			

10' - 0" ▲	α_DD+α_LL (Strength)	180 ← Max. superimposed factored LSD dead + live load (psf) (governed by strength limitation)
	D+L (Deflection)	123 ← Max. superimposed unfactored LSD dead + live load (psf) (governed by deflection limitation of L/240)
	L (Deflection)	84 ← 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	**Rbe**	Allowable exterior web crippling value per foot of deck width, plf
Ip	Moment of inertia for positive bending per foot of deck width, (in^4)/ft	**Rbi**	Allowable interior web crippling value per foot of deck width, plf
Sp	Section modulus for positive bending per foot of deck width, (in^3)/ft	**Va**	Allowable shear value per foot of deck width, plf
Sn	Section modulus for negative bending per foot of deck width, (in^3)/ft	**D**	Uniform dead load, psf
α_D, α_L	Load factors for D & L loads to be applied by Engineer in accordance with Building Codes.	**L**	Uniform live load, psf

Notes:

1. Bending strength based on allowable flexural stress of 36 ksi.
2. Loads marked with asterisk (*) are governed by interior reactions (web crippling) assuming 4" of interior bearing.
3. Loads marked with two asterisks (**) are governed by moment & shear or moment & reactions (web crippling) assuming 4" of interior bearing.
4. An upper limit of 400 psf has been applied to the loads.
5. 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.

REV: 2/13/09