Metal Dek Group®
a unit of CSI®

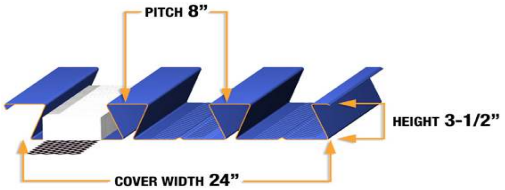
VERSA-DEK® 3.5 LS ACOUSTICAL ROOF (LSD)

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	3.07	1.766	0.747	0.803	927	1062	1177	1886	2029	2159	4633
18	4.06	2.436	1.080	1.181	1565	1783	1966	3136	3362	3566	8121
16	5.12	3.121	1.466	1.522	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)	175	254	345	133**	217**	311**	162**	265**	381**
	D+L (Deflection)	113	156	200	133	217	311	162	265	381
	L (Deflection)	77	107	137	133	217	311	146	201	257
11' - 0"	α_DD+α_LL (Strength)	144	209	284	113**	183**	262**	138**	225**	322**
	D+L (Deflection)	84	116	149	113	183	262	138	222	285
	L (Deflection)	58	80	103	113	183	244	109	151	193
12' - 0"	α_DD+α_LL (Strength)	121	175	238	97**	157**	223**	118**	193**	276**
	D+L (Deflection)	64	88	113	97	157	223	118	170	218
	L (Deflection)	45	62	79	97	147	188	84	116	149
13' - 0"	α_DD+α_LL (Strength)	102	148	202	84**	136**	193**	103**	167**	238**
	D+L (Deflection)	50	69	88	84	136	193	96	133	171
	L (Deflection)	35	49	62	84	115	148	66	91	117
14' - 0"	α_DD+α_LL (Strength)	88	127	173	73**	118**	168**	90**	147**	208**
	D+L (Deflection)	39	54	70	73	118	168	77	106	136
	L (Deflection)	28	39	50	67	92	118	53	73	94
15' - 0"	α_DD+α_LL (Strength)	76	110	150	64**	104**	147**	80**	129**	183**
	D+L (Deflection)	31	43	56	64	104	139	62	85	109
	L (Deflection)	23	32	40	54	75	96	43	60	76
16' - 0"	α_DD+α_LL (Strength)	66	96	131	57**	92**	130**	71**	115**	162**
	D+L (Deflection)	25	35	45	57	89	114	50	69	89
	L (Deflection)	19	26	33	45	62	79	36	49	63
17' - 0"	α_DD+α_LL (Strength)	58	85	115	51**	82**	115**			
	D+L (Deflection)	21	28	37	51	73	94			
	L (Deflection)	16	22	28	37	52	66			
18' - 0"	α_DD+α_LL (Strength)	51	75	102	45**	73**	103**			
	D+L (Deflection)	17	23	30	44	61	78			
	L (Deflection)	13	18	23	32	43	56			
19' - 0"	α_DD+α_LL (Strength)	46	67	91	41**	66**	92**			
	D+L (Deflection)	14	19	25	37	51	66			
	L (Deflection)	11	16	20	27	37	47			
20' - 0"	α_DD+α_LL (Strength)	41	60	82	37**	59**	83**			
	D+L (Deflection)	11	16	20	31	43	56			
	L (Deflection)	10	13	17	23	32	41			
21' - 0"	α_DD+α_LL (Strength)	37	54	73	33**	54**	75**			
	D+L (Deflection)	9	13	17	27	37	47			
	L (Deflection)	8	12	15	20	27	35			
22' - 0"	α_DD+α_LL (Strength)	33	48	66	30**	49**	68**			
	D+L (Deflection)	8	11	14	23	32	41			
	L (Deflection)	7	10	13	17	24	31			
23' - 0"	α_DD+α_LL (Strength)	30	44	60	27**	44**	62**			
	D+L (Deflection)	6	9	12	20	27	35			
	L (Deflection)	6	9	11	15	21	27			

10' - 0" ↑	λ_DD+λ_LL (Strength)	175	← Max. superimposed factored LSD dead + live load (psf) (governed by strength limitation)
	D+L (Deflection)	113	← Max. superimposed unfactored LSD dead + live load (psf) (governed by deflection limitation of L/240)
	L (Deflection)	77	← 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, (in^4)/ft

Sp Section modulus for positive bending per foot of deck width, (in^3)/ft

Sn Section modulus for negative bending per foot of deck width, (in^3)/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, plf

Rbi Allowable interior web crippling value per foot of deck width, plf

Va Allowable shear value per foot of deck width, plf

D Uniform dead load, psf

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*.

REV: 2/13/09