

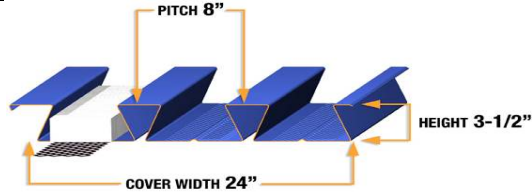
VERSA-DEK® 3.5 LS ACOUSTICAL ROOF (ASD)

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

SECTION PROPERTIES

fy=40 ksi

GAGE	Wd	I _D (DEFLECTION)	Sp	Sn	Rbe			Rbi			Va
					2"	3"	4"	3"	4"	5"	
20	3.07	1.809	0.747	0.803	681	781	865	1313	1437	1546	3619
18	4.06	2.450	1.080	1.181	1151	1311	1446	2194	2390	2561	6345
16	5.12	3.122	1.466	1.522	1771	2007	2205	3355	3638	3888	8867



ASD DESIGN		MAXIMUM SUPERIMPOSED UNIFORM ASD LOADS (psf)								
Span	Load Combinations	SINGLE SPAN			DOUBLE SPAN			TRIPLE SPAN		
		GAGE								
		20	18	16	20	18	16	20	18	16
10' - 0"	D+L (Strength)	116	169	229	78*	114*	151*	91*	134*	178*
	D+L (Deflection)	115	157	200	78	114	151	91	134	178
	L (Deflection)	79	107	137	78	114	151	91	134	178
11' - 0"	D+L (Strength)	96	139	189	68*	100*	132*	80*	118*	156*
	D+L (Deflection)	86	117	149	68	100	132	80	118	156
	L (Deflection)	59	81	103	68	100	132	80	118	156
12' - 0"	D+L (Strength)	80	116	158	60*	88*	116*	71*	104*	138*
	D+L (Deflection)	65	89	113	60	88	116	71	104	138
	L (Deflection)	46	62	79	60	88	116	71	104	138
13' - 0"	D+L (Strength)	68	98	134	54*	79*	104*	64*	93*	123*
	D+L (Deflection)	51	69	88	54	79	104	64	93	123
	L (Deflection)	36	49	62	54	79	104	64	92	117
14' - 0"	D+L (Strength)	58	84	115	48*	71*	93*	57*	84*	110*
	D+L (Deflection)	40	55	70	48	71	93	57	84	110
	L (Deflection)	29	39	50	48	71	93	54	74	94
15' - 0"	D+L (Strength)	50	73	99	44*	64*	83*	52*	76*	99*
	D+L (Deflection)	32	44	56	44	64	83	52	76	99
	L (Deflection)	23	32	40	44	64	83	44	60	76
16' - 0"	D+L (Strength)	44	63	87	40*	58*	75*	47*	69*	90*
	D+L (Deflection)	26	35	45	40	58	75	47	69	89
	L (Deflection)	19	26	33	40	58	75	36	49	63
17' - 0"	D+L (Strength)	38	56	76	36*	53*	69*			
	D+L (Deflection)	21	29	37	36	53	69			
	L (Deflection)	16	22	28	36	53	67			
18' - 0"	D+L (Strength)	34	49	67	33*	48*	63*			
	D+L (Deflection)	17	24	30	33	48	63			
	L (Deflection)	14	18	23	33	44	56			
19' - 0"	D+L (Strength)	30	44	60	30*	44*	57*			
	D+L (Deflection)	14	19	25	30	44	57			
	L (Deflection)	12	16	20	28	38	48			
20' - 0"	D+L (Strength)	27	39	54	28*	41*	53*			
	D+L (Deflection)	12	16	21	28	41	53			
	L (Deflection)	10	13	17	24	32	41			
21' - 0"	D+L (Strength)	24	35	48	26*	38*	49*			
	D+L (Deflection)	9	12	16	26	36	46			
	L (Deflection)	9	12	15	21	28	36			
22' - 0"	D+L (Strength)	22	32	43	23*	35*	45*			
	D+L (Deflection)	7	10	12	21	29	37			
	L (Deflection)	7	10	12	18	24	31			
23' - 0"	D+L (Strength)	20	29	39	21*	32*	41*			
	D+L (Deflection)	5	7	10	17	24	30			
	L (Deflection)	5	7	10	16	21	27			

10' - 0"	D+L (Strength)	116	← Max. superimposed ASD dead + live load (psf) (governed by strength limitation)
	D+L (Deflection)	115	← Max. superimposed ASD dead + live load (psf) (governed by deflection limitation of L/240 or 1")
	L (Deflection)	79	← Max. superimposed ASD live load (psf) (governed by deflection limitation of L/360 or 1")
			Vertical load span (center to center spacing)

Wd Weight of deck (uncoated), psf

I_D Moment of inertia for deflection 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

Va Allowable shear value per foot of deck width, plf

Rbe Allowable exterior web crippling value per foot of deck width, plf

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

D Uniform dead load, psf

L Uniform live load, psf

- Notes:**
- Bending strength based on allowable flexural stress of 24 ksi.
 - Loads marked with asterisk (*) are governed by moment & shear, interior reactions (web crippling) or applied moment & reactions 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).

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