

SECTION PROPERTIES

Fy = 276 MPa

GAGE	Wd	Ip	Sp	Sn	Rbe			Rbi			Va
					51 mm	76 mm	102 mm	76 mm	102 mm	127 mm	
20/20	28.36	9996643	85017	111189	13.52	15.50	17.17	25.16	27.53	29.61	67.61
18/18	37.58	14763876	133822	160902	22.84	26.02	28.70	42.03	45.77	49.06	118.52
16/16	47.44	19781498	191616	222472	35.16	39.83	43.77	64.26	69.69	74.47	165.62



LSD DESIGN		MAXIMUM SUPERIMPOSED UNIFORM LSD LOADS (kPa)								
Span (mm)	Load Combinations	SINGLE SPAN			DOUBLE SPAN			TRIPLE SPAN		
		GAGE								
		20/20	18/18	16/16	20/20	18/18	16/16	20/20	18/18	16/16
3960	α _D D+α _L L (Strength)	6.48*	11.07*	17.16*	5.21*	8.78*	13.49*	5.97*	10.04*	15.41*
	D+L (Deflection)	6.48	11.07	17.16	5.21	8.78	13.49	5.97	10.04	15.41
	L (Deflection)	6.48	10.31	13.82	5.21	8.78	13.49	5.97	10.04	15.41
4260	α _D D+α _L L (Strength)	5.99*	10.25*	15.9*	4.81*	8.12*	12.48*	5.52*	9.29*	14.27*
	D+L (Deflection)	5.99	10.25	15.90	4.81	8.12	12.48	5.52	9.29	14.27
	L (Deflection)	5.59	8.26	11.06	4.81	8.12	12.48	5.52	9.29	14.27
4570	α _D D+α _L L (Strength)	5.57*	9.53*	14.8*	4.47*	7.55*	11.61*			
	D+L (Deflection)	5.57	9.53	13.03	4.47	7.55	11.61			
	L (Deflection)	4.55	6.71	9.00	4.47	7.55	11.61			
4870	α _D D+α _L L (Strength)	5.2*	8.91*	13.84*	4.17*	7.05*	10.85*			
	D+L (Deflection)	5.20	7.93	10.65	4.17	7.05	10.85			
	L (Deflection)	3.75	5.53	7.41	4.17	7.05	10.85			
5180	α _D D+α _L L (Strength)	4.87*	8.36*	12.99*	3.9*	6.61*	10.18*			
	D+L (Deflection)	4.41	6.55	8.80	3.90	6.61	10.18			
	L (Deflection)	3.12	4.61	6.18	3.90	6.61	10.18			
5480	α _D D+α _L L (Strength)	4.58*	7.87*	12.06	3.67*	6.21*	9.58**			
	D+L (Deflection)	3.67	5.46	7.34	3.67	6.21	9.58			
	L (Deflection)	2.63	3.89	5.21	3.67	6.21	9.58			
5790	α _D D+α _L L (Strength)	4.32*	7.43*	10.76	3.45**	5.72**	8.72**			
	D+L (Deflection)	3.08	4.59	6.17	3.45	5.72	8.72			
	L (Deflection)	2.24	3.30	4.43	3.45	5.72	8.72			
6090	α _D D+α _L L (Strength)	4.09*	6.69	9.66	3.15**	5.23**	7.97**			
	D+L (Deflection)	2.60	3.88	5.23	3.15	5.23	7.97			
	L (Deflection)	1.92	2.83	3.80	3.15	5.23	7.97			
6400	α _D D+α _L L (Strength)	3.77	6.03	8.71	2.89**	4.79**	7.3**			
	D+L (Deflection)	2.21	3.30	4.45	2.89	4.79	7.30			
	L (Deflection)	1.66	2.45	3.28	2.89	4.79	7.30			
6700	α _D D+α _L L (Strength)	3.41	5.45	7.88	2.66**	4.4**	6.71**			
	D+L (Deflection)	1.88	2.82	3.81	2.66	4.40	6.71			
	L (Deflection)	1.44	2.13	2.85	2.66	4.40	6.71			
7010	α _D D+α _L L (Strength)	3.09	4.95	7.16	2.45**	4.06**	6.18**			
	D+L (Deflection)	1.61	2.43	3.28	2.45	4.06	6.18			
	L (Deflection)	1.26	1.86	2.50	2.45	4.06	5.93			
7310	α _D D+α _L L (Strength)	2.81	4.51	6.53						
	D+L (Deflection)	1.39	2.09	2.83						
	L (Deflection)	1.11	1.64	2.20						
7610	α _D D+α _L L (Strength)	2.56	4.12	5.97						
	D+L (Deflection)	1.19	1.81	2.45						
	L (Deflection)	0.98	1.45	1.94						
7920	α _D D+α _L L (Strength)	2.34	3.77	5.48						
	D+L (Deflection)	1.03	1.57	2.13						
	L (Deflection)	0.87	1.29	1.73						

3960	α _D D+α _L L (Strength)	6.48*	← Max. superimposed factored LSD dead + live load (kPa) (governed by strength limitation)
	D+L (Deflection)	6.48	← Max. superimposed unfactored LSD dead + live load (kPa) (governed by deflection limitation of L/240)
	L (Deflection)	6.48	← Max. superimposed unfactored LSD live load (kPa) (governed by deflection limitation of L/360)

← Vertical load span (center to center spacing)

Wd	Weight of deck (uncoated), kg/m ²	Rbe	Allowable exterior web crippling value per foot of deck width, kN/m
Ip	Moment of inertia for positive bending per foot of deck width, mm ⁴ /m	Rbi	Allowable interior web crippling value per foot of deck width, kN/m
Sp	Section modulus for positive bending per foot of deck width, mm ³ /m	Va	Allowable shear value per foot of deck width, kN/m
Sn	Section modulus for negative bending per foot of deck width, mm ³ /m	D	Uniform dead load, kPa
α _D , α _L	Load factors for D & L loads to be applied by Engineer in accordance with Building Codes.	L	Uniform live load, kPa

- Notes:
- Bending strength based on allowable flexural stress of 165 MPa.
 - Loads marked with asterisk (*) are governed by interior reactions (web crippling) assuming 102 mm of interior bearing.
 - Loads marked with two asterisks (**) are governed by moment & shear or moment & reactions (web crippling) assuming 102 mm of interior bearing.
 - An upper limit of 19.15 kPa has been applied to the loads.
 - Deck length over 13.72 m 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.