

SECTION PROPERTIES

Fy = 276 MPa

GAGE	Wd	Ip	In	Sp	Sn	Rbe			Rbi			Va
						102 mm	127 mm	152 mm	102 mm	127 mm	152 mm	
20	18.53	12648478	12482692	105769	116408	10.34	11.22	12.02	19.22	20.68	22.00	20.72
18	24.52	17259108	16994465	166528	164572	17.79	19.26	20.58	32.04	34.35	36.43	48.16
16	30.91	21868814	21868814	213584	216122	27.67	29.86	31.85	48.88	52.24	55.27	96.85
14	38.58	27283614	27283614	269535	269535	42.02	45.23	48.13	73.24	78.03	82.36	189.15



LSD DESIGN		MAXIMUM SUPERIMPOSED UNIFORM LSD LOADS (kPa)											
Span (mm)	Load Combinations	SINGLE SPAN				DOUBLE SPAN				TRIPLE SPAN			
		GAGE											
		20	18	16	14	20	18	16	14	20	18	16	14
5180	$\alpha_D D + \alpha_L L$ (Strength)	3.76*	6.57*	10.3*	15.75*	3.17*	5.32*	8.16*	12.24*				
	D+L (Deflection)	3.76	6.57	9.94	12.41	3.17	5.32	8.16	12.24				
	L (Deflection)	3.76	5.39	6.83	8.52	3.17	5.32	8.16	12.24				
5480	$\alpha_D D + \alpha_L L$ (Strength)	3.54*	6.19*	9.71*	14.85*	2.98*	5.01*	7.68*	11.54*				
	D+L (Deflection)	3.54	6.19	8.33	10.39	2.98	5.01	7.68	11.54				
	L (Deflection)	3.33	4.54	5.76	7.18	2.98	5.01	7.68	11.54				
5790	$\alpha_D D + \alpha_L L$ (Strength)	3.34*	5.84*	9.18*	14.04*	2.81*	4.73*	7.26*	10.85**				
	D+L (Deflection)	3.34	5.55	7.04	8.78	2.81	4.73	7.26	10.85				
	L (Deflection)	2.83	3.86	4.89	6.11	2.81	4.73	7.26	10.85				
6090	$\alpha_D D + \alpha_L L$ (Strength)	3.16*	5.54*	8.7*	13.32*	2.66*	4.48*	6.88*	9.93**				
	D+L (Deflection)	3.16	4.73	5.99	7.47	2.66	4.48	6.88	9.93				
	L (Deflection)	2.43	3.31	4.20	5.23	2.66	4.48	6.88	9.93				
6400	$\alpha_D D + \alpha_L L$ (Strength)	3*	5.26*	8.27*	12.59*	2.52*	4.25*	6.45**	9.13**				
	D+L (Deflection)	2.96	4.05	5.13	6.40	2.52	4.25	6.45	9.13				
	L (Deflection)	2.10	2.86	3.62	4.52	2.52	4.25	6.45	9.13				
6700	$\alpha_D D + \alpha_L L$ (Strength)	2.86*	5.01*	7.87*	11.43*	2.4*	4.02**	5.96**	8.41**				
	D+L (Deflection)	2.55	3.49	4.43	5.52	2.40	4.02	5.96	8.41				
	L (Deflection)	1.82	2.49	3.15	3.93	2.40	4.02	5.96	8.41				
7010	$\alpha_D D + \alpha_L L$ (Strength)	2.72*	4.78*	7.52*	10.42*	2.27**	3.73**	5.51**	7.77**				
	D+L (Deflection)	2.21	3.03	3.83	4.78	2.27	3.73	5.51	7.77				
	L (Deflection)	1.60	2.18	2.76	3.44	2.27	3.73	5.51	7.77				
7310	$\alpha_D D + \alpha_L L$ (Strength)	2.6*	4.56*	7.19*	9.53*	2.11**	3.46**	5.11**	7.2**				
	D+L (Deflection)	1.92	2.63	3.34	4.17	2.11	3.46	5.11	7.20				
	L (Deflection)	1.40	1.92	2.43	3.03	2.11	3.46	5.11	7.20				
7610	$\alpha_D D + \alpha_L L$ (Strength)	2.49*	4.37*	6.88*	8.74*								
	D+L (Deflection)	1.68	2.30	2.92	3.64								
	L (Deflection)	1.24	1.70	2.15	2.68								
7920	$\alpha_D D + \alpha_L L$ (Strength)	2.38*	4.19*	6.37*	8.05*								
	D+L (Deflection)	1.48	2.02	2.56	3.20								
	L (Deflection)	1.10	1.51	1.91	2.38								
8220	$\alpha_D D + \alpha_L L$ (Strength)	2.29*	4.02*	5.88*	7.43*								
	D+L (Deflection)	1.30	1.78	2.25	2.81								
	L (Deflection)	0.99	1.35	1.71	2.13								
8530	$\alpha_D D + \alpha_L L$ (Strength)	2.2*	3.87*	5.44*	6.88*								
	D+L (Deflection)	1.14	1.57	1.99	2.48								
	L (Deflection)	0.88	1.21	1.53	1.91								
8830	$\alpha_D D + \alpha_L L$ (Strength)	2.11*	3.73*	5.05*	6.38*								
	D+L (Deflection)	1.01	1.39	1.76	2.20								
	L (Deflection)	0.80	1.09	1.38	1.72								
9140	$\alpha_D D + \alpha_L L$ (Strength)	2.03*	3.59*	4.69*	5.93*								
	D+L (Deflection)	0.90	1.23	1.56	1.95								
	L (Deflection)	0.72	0.98	1.24	1.55								

5180	$\alpha_D D + \alpha_L L$ (Strength)	3.76*	← Max. superimposed factored LSD dead + live load (kPa) (governed by strength limitation)
	D+L (Deflection)	3.76	← Max. superimposed unfactored LSD dead + live load (kPa) (governed by deflection limitation of L/240)
	L (Deflection)	3.76	← 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<sup>2</sup>
- Ip Moment of inertia for positive bending per foot of deck width, mm<sup>4</sup>/m
- In Moment of inertia for negative bending per foot of deck width, mm<sup>4</sup>/m
- Sp Section modulus for positive bending per foot of deck width, mm<sup>3</sup>/m
- Sn Section modulus for negative bending per foot of deck width, mm<sup>3</sup>/m
- $\alpha_D, \alpha_L$  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, kN/m
- Rbi Allowable interior web crippling value per foot of deck width, kN/m
- Va Allowable shear value per foot of deck width, kN/m
- D Uniform dead load, kPa
- L Uniform live load, kPa

- Notes:
- Bending strength based on allowable flexural stress of 248 MPa.
  - Loads marked with asterisk (\*) are governed by interior reactions (web crippling) assuming 152 mm of interior bearing.
  - Loads marked with two asterisks (\*\*) are governed by moment & shear or moment & reactions (web crippling) assuming 152 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. Acoustical profile is also available.