

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	27.07	9362218	83425	113180	13.52	15.50	17.17	25.16	27.53	29.61	67.61
18/18	35.87	13779288	130903	164321	22.84	26.02	28.70	42.03	45.77	49.06	118.52
16/16	45.30	18448549	187010	224254	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	$\alpha_D D + \alpha_L L$ (Strength)	6.49*	11.09*	17.19*	5.23*	8.8*	13.52*	5.98*	10.06*	15.43*
	D+L (Deflection)	6.49	11.09	17.19	5.23	8.80	13.52	5.98	10.06	15.43
	L (Deflection)	6.49	9.63	12.89	5.23	8.80	13.52	5.98	10.06	15.43
4260	$\alpha_D D + \alpha_L L$ (Strength)	6.01*	10.27*	15.92*	4.83*	8.14*	12.51*	5.53*	9.31*	14.29*
	D+L (Deflection)	6.01	10.27	15.03	4.83	8.14	12.51	5.53	9.31	14.29
	L (Deflection)	5.24	7.71	10.32	4.83	8.14	12.51	5.53	9.31	14.29
4570	$\alpha_D D + \alpha_L L$ (Strength)	5.58*	9.55*	14.82*	4.48*	7.57*	11.64*			
	D+L (Deflection)	5.58	9.05	12.14	4.48	7.57	11.64			
	L (Deflection)	4.26	6.27	8.39	4.48	7.57	11.64			
4870	$\alpha_D D + \alpha_L L$ (Strength)	5.21*	8.93*	13.86*	4.18*	7.07*	10.88*			
	D+L (Deflection)	5.00	7.39	9.92	4.18	7.07	10.88			
	L (Deflection)	3.51	5.16	6.91	4.18	7.07	10.88			
5180	$\alpha_D D + \alpha_L L$ (Strength)	4.89*	8.38*	13.02*	3.92*	6.63*	10.2*			
	D+L (Deflection)	4.12	6.11	8.20	3.92	6.63	10.20			
	L (Deflection)	2.92	4.30	5.76	3.92	6.63	10.20			
5480	$\alpha_D D + \alpha_L L$ (Strength)	4.6*	7.89*	11.78*	3.68*	6.23*	9.61*			
	D+L (Deflection)	3.43	5.09	6.84	3.68	6.23	9.61			
	L (Deflection)	2.46	3.63	4.86	3.68	6.23	9.61			
5790	$\alpha_D D + \alpha_L L$ (Strength)	4.34*	7.31*	10.52*	3.47*	5.81**	8.79**			
	D+L (Deflection)	2.88	4.27	5.75	3.47	5.81	8.79			
	L (Deflection)	2.09	3.08	4.13	3.47	5.81	8.79			
6090	$\alpha_D D + \alpha_L L$ (Strength)	4.11*	6.56*	9.44*	3.2**	5.31**	8.03**			
	D+L (Deflection)	2.43	3.61	4.86	3.20	5.31	8.03			
	L (Deflection)	1.80	2.64	3.54	3.20	5.31	8.03			
6400	$\alpha_D D + \alpha_L L$ (Strength)	3.71	5.90	8.51	2.94**	4.87**	7.36**			
	D+L (Deflection)	2.06	3.07	4.14	2.94	4.87	7.36			
	L (Deflection)	1.55	2.28	3.06	2.94	4.87	7.27			
6700	$\alpha_D D + \alpha_L L$ (Strength)	3.35	5.34	7.70	2.7**	4.48**	6.77**			
	D+L (Deflection)	1.76	2.63	3.54	2.70	4.48	6.77			
	L (Deflection)	1.35	1.99	2.66	2.70	4.48	6.32			
7010	$\alpha_D D + \alpha_L L$ (Strength)	3.04	4.85	7.00	2.49**	4.13**	6.24**			
	D+L (Deflection)	1.51	2.26	3.05	2.49	4.13	6.24			
	L (Deflection)	1.18	1.74	2.33	2.49	4.13	5.53			
7310	$\alpha_D D + \alpha_L L$ (Strength)	2.76	4.42	6.38						
	D+L (Deflection)	1.29	1.94	2.63						
	L (Deflection)	1.04	1.53	2.05						
7610	$\alpha_D D + \alpha_L L$ (Strength)	2.52	4.04	5.84						
	D+L (Deflection)	1.11	1.68	2.27						
	L (Deflection)	0.92	1.35	1.81						
7920	$\alpha_D D + \alpha_L L$ (Strength)	2.31	3.70	5.36						
	D+L (Deflection)	0.96	1.45	1.97						
	L (Deflection)	0.82	1.20	1.61						

3960	$\alpha_D D + \alpha_L L$ (Strength)	6.49*	← Max. superimposed factored LSD dead + live load (kPa) (governed by strength limitation)
	D+L (Deflection)	6.49	← Max. superimposed unfactored LSD dead + live load (kPa) (governed by deflection limitation of L/240)
	L (Deflection)	6.49	← 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/m²
- Ip Moment of inertia for positive bending per foot of deck width, mm⁴/m
- Sp Section modulus for positive bending per foot of deck width, mm³/m
- Sn Section modulus for negative bending per foot of deck width, mm³/m
- 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, 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 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.