

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	
20/20	23.52	11227870	10422555	87591	117847	10.96	11.90	12.75	19.35	20.81	22.14	26.02
20/18	26.31	11918253	11878938	87707	122054	10.96	11.90	12.75	19.35	20.81	22.14	26.02
18/20	28.35	14997763	12748500	135879	152987	18.66	20.20	21.58	32.22	34.54	36.64	60.52
18/18	31.14	16143320	14345099	135338	157998	18.66	20.20	21.58	32.22	34.54	36.64	60.52
18/16	34.13	16991931	16120812	135131	162712	18.66	20.20	21.58	32.22	34.54	36.64	60.52



LSD DESIGN		MAXIMUM SUPERIMPOSED UNIFORM LSD LOADS (kPa)														
Span (mm)	Load Combinations	SINGLE SPAN					DOUBLE SPAN					TRIPLE SPAN				
		GAGE														
		20/20	20/18	18/20	18/18	18/16	20/20	20/18	18/20	18/18	18/16	20/20	20/18	18/20	18/18	18/16
4570	$\alpha_D D + \alpha_L L$ (Strength)	4.51*	4.47*	7.82*	7.78*	7.75*	3.59*	3.55*	6.06*	6.03*	5.99*	4.11*	4.08*	6.94*	6.9*	6.87*
	D+L (Deflection)	4.51	4.47	7.82	7.78	7.75	3.59	3.55	6.06	6.03	5.99	4.11	4.08	6.94	6.90	6.87
	L (Deflection)	4.51	4.47	6.82	7.34	7.73	3.59	3.55	6.06	6.03	5.99	4.11	4.08	6.94	6.90	6.87
4870	$\alpha_D D + \alpha_L L$ (Strength)	4.21*	4.17*	7.31*	7.27*	7.23*	3.34*	3.31*	5.66*	5.63*	5.59*	3.84*	3.8*	6.48*	6.45*	6.41*
	D+L (Deflection)	4.21	4.17	7.31	7.27	7.23	3.34	3.31	5.66	5.63	5.59	3.84	3.80	6.48	6.45	6.41
	L (Deflection)	4.21	4.17	5.62	6.05	6.37	3.34	3.31	5.66	5.63	5.59	3.84	3.80	6.48	6.45	6.41
5180	$\alpha_D D + \alpha_L L$ (Strength)	3.94*	3.91*	6.86*	6.82*	6.78*	3.13*	3.1*	5.31*	5.28*	5.24*					
	D+L (Deflection)	3.94	3.91	6.75	6.82	6.78	3.13	3.10	5.31	5.28	5.24					
	L (Deflection)	3.51	3.72	4.69	5.04	5.31	3.13	3.10	5.31	5.28	5.24					
5480	$\alpha_D D + \alpha_L L$ (Strength)	3.71*	3.67*	6.46*	6.42*	6.38*	2.94*	2.91*	5*	4.96*	4.92*					
	D+L (Deflection)	3.71	3.67	5.64	6.07	6.37	2.94	2.91	5.00	4.96	4.92					
	L (Deflection)	2.95	3.14	3.95	4.25	4.47	2.94	2.91	5.00	4.96	4.92					
5790	$\alpha_D D + \alpha_L L$ (Strength)	3.5*	3.46*	6.1*	6.06*	6.03*	2.77*	2.74*	4.71*	4.68*	4.64*					
	D+L (Deflection)	3.50	3.46	4.76	5.11	5.37	2.77	2.74	4.71	4.68	4.64					
	L (Deflection)	2.51	2.67	3.36	3.61	3.80	2.77	2.74	4.71	4.68	4.64					
6090	$\alpha_D D + \alpha_L L$ (Strength)	3.31*	3.27*	5.77*	5.74*	5.7*	2.62*	2.58*	4.46*	4.43*	4.39*					
	D+L (Deflection)	3.00	3.17	4.04	4.34	4.56	2.62	2.58	4.46	4.43	4.39					
	L (Deflection)	2.15	2.29	2.88	3.10	3.26	2.62	2.58	4.46	4.43	4.39					
6400	$\alpha_D D + \alpha_L L$ (Strength)	3.14*	3.1*	5.48*	5.45*	5.41*	2.48*	2.44*	4.16**	4.19**	4.16*					
	D+L (Deflection)	2.56	2.70	3.45	3.71	3.89	2.48	2.44	4.16	4.19	4.16					
	L (Deflection)	1.86	1.98	2.49	2.68	2.82	2.48	2.44	4.16	4.19	4.16					
6700	$\alpha_D D + \alpha_L L$ (Strength)	2.98*	2.95*	5.22*	5.18*	5.15*	2.35*	2.32*	3.83**	3.87**	3.89**					
	D+L (Deflection)	2.20	2.32	2.96	3.18	3.34	2.35	2.32	3.83	3.87	3.89					
	L (Deflection)	1.62	1.72	2.16	2.33	2.45	2.35	2.32	3.83	3.87	3.89					
7010	$\alpha_D D + \alpha_L L$ (Strength)	2.84*	2.8*	4.98*	4.94*	4.91*	2.24**	2.2*	3.54**	3.57**	3.6**					
	D+L (Deflection)	1.89	2.00	2.56	2.75	2.88	2.24	2.20	3.54	3.57	3.60					
	L (Deflection)	1.42	1.50	1.89	2.04	2.14	2.24	2.20	3.54	3.57	3.60					
7310	$\alpha_D D + \alpha_L L$ (Strength)	2.71*	2.67*	4.69	4.64	4.60	2.07**	2.08**	3.28**	3.31**	3.33**					
	D+L (Deflection)	1.64	1.73	2.22	2.38	2.50	2.07	2.08	3.28	3.31	3.33					
	L (Deflection)	1.25	1.32	1.67	1.79	1.89	2.07	2.08	3.28	3.31	3.33					
7610	$\alpha_D D + \alpha_L L$ (Strength)	2.59*	2.55*	4.30	4.25	4.20										
	D+L (Deflection)	1.42	1.50	1.93	2.07	2.17										
	L (Deflection)	1.10	1.17	1.47	1.59	1.67										
7920	$\alpha_D D + \alpha_L L$ (Strength)	2.48*	2.44*	3.95	3.90	3.85										
	D+L (Deflection)	1.24	1.30	1.69	1.81	1.89										
	L (Deflection)	0.98	1.04	1.31	1.41	1.48										
8220	$\alpha_D D + \alpha_L L$ (Strength)	2.28	2.25	3.64	3.59	3.54										
	D+L (Deflection)	1.08	1.14	1.48	1.58	1.65										
	L (Deflection)	0.88	0.93	1.17	1.26	1.32										
8530	$\alpha_D D + \alpha_L L$ (Strength)	2.10	2.07	3.36	3.31	3.27										
	D+L (Deflection)	0.95	0.99	1.29	1.39	1.45										
	L (Deflection)	0.79	0.83	1.05	1.13	1.19										

4570	$\alpha_D D + \alpha_L L$ (Strength)	4.51*	← Max. superimposed factored LSD dead + live load (kPa) (governed by strength limitation)
	D+L (Deflection)	4.51	← Max. superimposed unfactored LSD dead + live load (kPa) (governed by deflection limitation of L/240)
	L (Deflection)	4.51	← 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
- In Moment of inertia for negative 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: 1. Bending strength based on allowable flexural stress of 248 MPa.
 2. Loads marked with asterisk (*) are governed by interior reactions (web crippling) assuming 152 mm of interior bearing.
 3. Loads marked with two asterisks (**) are governed by moment & shear or moment & reactions (web crippling) assuming 152 mm of interior bearing.
 4. An upper limit of 19.15 kPa has been applied to the loads.
 5. 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.

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	
16/18	36.30	19393571	16913619	194337	195855	28.82	31.10	33.17	49.13	52.50	55.55	121.77
16/16	39.28	20709302	18725061	194413	201416	28.82	31.10	33.17	49.13	52.50	55.55	121.77
16/14	42.88	22089451	21037085	193571	206895	28.82	31.10	33.17	49.13	52.50	55.55	121.77
14/16	45.47	24346840	21791238	257364	247203	43.52	46.84	49.85	73.57	78.38	82.73	196.23
14/14	49.06	25955553	24273339	262058	253910	43.52	46.84	49.85	73.57	78.38	82.73	196.23



LSD DESIGN		MAXIMUM SUPERIMPOSED UNIFORM LSD LOADS (kPa)														
Span (mm)	Load Combinations	SINGLE SPAN					DOUBLE SPAN					TRIPLE SPAN				
		GAGE														
		16/18	16/16	16/14	14/16	14/14	16/18	16/16	16/14	14/16	14/14	16/18	16/16	16/14	14/16	14/14
5180	$\alpha_D D + \alpha_L L$ (Strength)	10.68*	10.64*	10.6*	16.24*	16.2*	8.13*	8.1*	8.05*	12.22*	12.17*					
	D+L (Deflection)	8.73	9.32	9.93	10.96	11.68	8.13	8.10	8.05	12.22	12.17					
	L (Deflection)	6.06	6.47	6.90	7.61	8.11	8.13	8.10	8.05	12.22	12.17					
5480	$\alpha_D D + \alpha_L L$ (Strength)	10.06*	10.02*	9.98*	15.31*	15.27*	7.66*	7.62*	7.57*	11.27**	11.4**					
	D+L (Deflection)	7.30	7.79	8.30	9.17	9.76	7.66	7.62	7.57	11.27	11.40					
	L (Deflection)	5.10	5.45	5.81	6.41	6.83	7.66	7.62	7.57	11.27	11.40					
5790	$\alpha_D D + \alpha_L L$ (Strength)	9.51*	9.47*	9.43*	14.47*	14.43*	7.21**	7.19*	7.15*	10.26**	10.38**					
	D+L (Deflection)	6.15	6.57	6.99	7.73	8.23	7.21	7.19	7.15	10.26	10.38					
	L (Deflection)	4.34	4.63	4.94	5.45	5.81	7.21	7.19	7.15	10.26	10.38					
6090	$\alpha_D D + \alpha_L L$ (Strength)	9.01*	8.97*	8.93*	13.19	13.40	6.6**	6.66**	6.72**	9.38**	9.49**					
	D+L (Deflection)	5.22	5.57	5.94	6.56	6.99	6.60	6.66	6.72	9.38	9.49					
	L (Deflection)	3.72	3.97	4.24	4.67	4.98	6.60	6.66	6.72	9.38	9.49					
6400	$\alpha_D D + \alpha_L L$ (Strength)	8.56*	8.52*	8.48*	11.92	12.10	6.06**	6.12**	6.17**	8.59**	8.69**					
	D+L (Deflection)	4.47	4.76	5.07	5.61	5.97	6.06	6.12	6.17	8.59	8.69					
	L (Deflection)	3.21	3.43	3.66	4.03	4.30	6.06	6.12	6.17	8.59	8.69					
6700	$\alpha_D D + \alpha_L L$ (Strength)	8.14	8.10	8.02	10.81	10.97	5.58**	5.63**	5.68**	7.9**	7.99**					
	D+L (Deflection)	3.84	4.09	4.36	4.82	5.13	5.58	5.63	5.68	7.90	7.99					
	L (Deflection)	2.80	2.99	3.18	3.51	3.74	5.58	5.63	5.68	7.90	7.99					
7010	$\alpha_D D + \alpha_L L$ (Strength)	7.41	7.37	7.30	9.84	9.99	5.15**	5.2**	5.24**	7.28**	7.37**					
	D+L (Deflection)	3.31	3.53	3.76	4.16	4.43	5.15	5.20	5.24	7.28	7.37					
	L (Deflection)	2.45	2.61	2.79	3.07	3.27	5.15	5.20	5.24	7.28	7.37					
7310	$\alpha_D D + \alpha_L L$ (Strength)	6.77	6.73	6.66	8.99	9.12	4.76**	4.81**	4.85**	6.73**	6.81**					
	D+L (Deflection)	2.87	3.06	3.26	3.61	3.84	4.76	4.81	4.85	6.73	6.81					
	L (Deflection)	2.15	2.30	2.45	2.70	2.88	4.76	4.81	4.85	6.43	6.81					
7610	$\alpha_D D + \alpha_L L$ (Strength)	6.20	6.17	6.09	8.24	8.36										
	D+L (Deflection)	2.50	2.67	2.83	3.14	3.34										
	L (Deflection)	1.90	2.03	2.17	2.39	2.55										
7920	$\alpha_D D + \alpha_L L$ (Strength)	5.70	5.67	5.59	7.58	7.68										
	D+L (Deflection)	2.18	2.33	2.47	2.74	2.92										
	L (Deflection)	1.69	1.81	1.93	2.13	2.27										
8220	$\alpha_D D + \alpha_L L$ (Strength)	5.25	5.22	5.15	6.99	7.08										
	D+L (Deflection)	1.91	2.04	2.16	2.40	2.55										
	L (Deflection)	1.51	1.61	1.72	1.90	2.02										
8530	$\alpha_D D + \alpha_L L$ (Strength)	4.85	4.82	4.75	6.46	6.54										
	D+L (Deflection)	1.68	1.79	1.90	2.11	2.24										
	L (Deflection)	1.36	1.45	1.54	1.70	1.81										
8830	$\alpha_D D + \alpha_L L$ (Strength)	4.49	4.46	4.39	5.98	6.06										
	D+L (Deflection)	1.47	1.57	1.66	1.85	1.97										
	L (Deflection)	1.22	1.30	1.39	1.53	1.63										
9140	$\alpha_D D + \alpha_L L$ (Strength)	4.17	4.14	4.07	5.55	5.62										
	D+L (Deflection)	1.30	1.38	1.46	1.63	1.73										
	L (Deflection)	1.10	1.18	1.26	1.38	1.48										

5180	$\alpha_D D + \alpha_L L$ (Strength)	10.68*	← Max. superimposed factored LSD dead + live load (kPa) (governed by strength limitation)
	D+L (Deflection)	8.73	← Max. superimposed unfactored LSD dead + live load (kPa) (governed by deflection limitation of L/240)
	L (Deflection)	6.06	← 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/r
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/r
In	Moment of inertia for negative bending per foot of deck width, mm ⁴ /m	Va	Allowable shear value per foot of deck width, kN/m
Sp	Section modulus for positive bending per foot of deck width, mm ³ /m	D	Uniform dead load, kPa
Sn	Section modulus for negative bending per foot of deck width, mm ³ /m	L	Uniform live load, kPa
α_D, α_L	Load factors for D & L loads to be applied by Engineer in accordance with Building Codes.		

- 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.
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