

SECTION PROPERTIES

Fy = 276 MPa

GAGE	Wd	Ip	In	Sp	Sn	Rbe			Rbi			Va
						51 mm	76 mm	102 mm	102 mm	127 mm	152 mm	
22	10.86	576005	455970	16473	14677	14.25	16.40	18.22	26.96	29.08	30.99	56.46
20	13.17	697816	592665	20941	18586	20.28	23.25	25.75	38.28	41.18	43.81	68.19
18	17.40	920953	855814	27650	25500	33.79	38.49	42.45	63.55	68.13	72.26	89.47
16	21.91	1158019	1130434	34747	33027	51.52	58.36	64.13	96.67	103.30	109.30	111.78



LSD DESIGN		MAXIMUM SUPERIMPOSED UNIFORM LSD LOADS (kPa)											
Span (mm)	Load Combinations	SINGLE SPAN				DOUBLE SPAN				TRIPLE SPAN			
		GAGE											
		22	20	18	16	22	20	18	16	22	20	18	16
2590	$\alpha_D D + \alpha_L L$ (Strength)	4.74	6.03	7.97	10.01	4.01**	5.29**	7.26**	9.41**	5**	6.63**	9.09**	11.77**
	D+L (Deflection)	2.05	2.49	3.28	4.13	4.01	5.29	7.26	9.41	3.96	4.80	6.33	7.96
	L (Deflection)	1.44	1.74	2.30	2.89	3.42	4.15	5.47	6.88	2.71	3.29	4.34	5.45
2740	$\alpha_D D + \alpha_L L$ (Strength)	4.21	5.36	7.08	8.90	3.58**	4.71**	6.46**	8.37**	4.48**	5.9**	8.1**	10.49**
	D+L (Deflection)	1.71	2.07	2.74	3.44	3.58	4.71	6.46	8.37	3.32	4.02	5.31	6.67
	L (Deflection)	1.21	1.47	1.94	2.44	2.88	3.49	4.61	5.80	2.28	2.77	3.65	4.59
2890	$\alpha_D D + \alpha_L L$ (Strength)	3.77	4.80	6.34	7.96	3.22**	4.21**	5.78**	7.49**	4.03**	5.29**	7.26**	9.4**
	D+L (Deflection)	1.44	1.74	2.30	2.89	3.22	4.21	5.71	7.18	2.81	3.40	4.49	5.64
	L (Deflection)	1.03	1.25	1.65	2.07	2.45	2.97	3.92	4.93	1.94	2.35	3.11	3.91
3040	$\alpha_D D + \alpha_L L$ (Strength)	3.39	4.31	5.70	7.16	2.91**	3.79**	5.2**	6.74**	3.65**	4.76**	6.53**	8.46**
	D+L (Deflection)	1.22	1.48	1.95	2.45	2.91	3.69	4.87	6.12	2.39	2.90	3.82	4.81
	L (Deflection)	0.88	1.07	1.41	1.78	2.10	2.55	3.36	4.22	1.67	2.02	2.66	3.35
3200	$\alpha_D D + \alpha_L L$ (Strength)	3.06	3.90	5.15	6.47	2.63**	3.42**	4.7**	6.09**	3.31**	4.31**	5.91**	7.66**
	D+L (Deflection)	1.04	1.26	1.66	2.09	2.62	3.17	4.18	5.26	2.05	2.49	3.28	4.12
	L (Deflection)	0.76	0.93	1.22	1.54	1.82	2.20	2.90	3.65	1.44	1.74	2.30	2.89
3350	$\alpha_D D + \alpha_L L$ (Strength)	2.78	3.54	4.67	5.87	2.4**	3.11**	4.27**	5.53**	3.02**	3.91**	5.37**	6.96**
	D+L (Deflection)	0.89	1.08	1.42	1.79	2.26	2.74	3.62	4.55	1.77	2.14	2.83	3.56
	L (Deflection)	0.66	0.80	1.06	1.34	1.58	1.91	2.52	3.17	1.25	1.52	2.00	2.52
3500	$\alpha_D D + \alpha_L L$ (Strength)	2.53	3.22	4.26	5.35	2.19**	2.83**	3.89**	5.04**	2.76**	3.57**	4.9**	6.35**
	D+L (Deflection)	0.77	0.93	1.22	1.54	1.97	2.38	3.14	3.95	1.54	1.86	2.46	3.09
	L (Deflection)	0.58	0.70	0.93	1.17	1.38	1.67	2.21	2.78	1.09	1.33	1.75	2.20
3650	$\alpha_D D + \alpha_L L$ (Strength)	2.31	2.95	3.89	4.89	2**	2.59**	3.55**	4.61**	2.53**	3.27**	4.49**	5.82**
	D+L (Deflection)	0.66	0.80	1.06	1.33	1.72	2.08	2.75	3.45	1.34	1.62	2.14	2.69
	L (Deflection)	0.51	0.62	0.82	1.03	1.22	1.47	1.94	2.44	0.96	1.17	1.54	1.94
3800	$\alpha_D D + \alpha_L L$ (Strength)	2.12	2.70	3.57	4.48	1.84**	2.37**	3.26**	4.23**	2.33**	3**	4.12**	5.34**
	D+L (Deflection)	0.57	0.69	0.91	1.15	1.51	1.83	2.41	3.03	1.17	1.42	1.87	2.36
	L (Deflection)	0.45	0.55	0.72	0.91	1.08	1.30	1.72	2.16	0.85	1.03	1.36	1.71
3960	$\alpha_D D + \alpha_L L$ (Strength)	1.95	2.49	3.28	4.13	1.69**	2.18**	3**	3.89**	2.15**	2.76**	3.8**	4.92**
	D+L (Deflection)	0.50	0.60	0.79	1.00	1.33	1.61	2.12	2.67	1.03	1.25	1.65	2.07
	L (Deflection)	0.40	0.49	0.64	0.81	0.96	1.16	1.53	1.92	0.76	0.92	1.21	1.52
4110	$\alpha_D D + \alpha_L L$ (Strength)	1.80	2.29	3.03	3.81	1.56**	2.01**	2.77**	3.59**	1.98**	2.55**	3.51**	4.55**
	D+L (Deflection)	0.43	0.52	0.69	0.87	1.17	1.42	1.88	2.36	0.91	1.10	1.45	1.83
	L (Deflection)	0.36	0.44	0.57	0.72	0.85	1.03	1.37	1.72	0.68	0.82	1.08	1.36
4260	$\alpha_D D + \alpha_L L$ (Strength)	1.66	2.12	2.80	3.52	1.44**	1.86**	2.56**	3.32**	1.84**	2.36**	3.25**	4.21**
	D+L (Deflection)	0.38	0.46	0.60	0.76	1.04	1.26	1.67	2.09	0.80	0.97	1.28	1.62
	L (Deflection)	0.32	0.39	0.52	0.65	0.77	0.93	1.22	1.54	0.61	0.74	0.97	1.22
4410	$\alpha_D D + \alpha_L L$ (Strength)	1.54	1.97	2.60	3.26	1.34**	1.72**	2.37**	3.08**	1.71**	2.19**	3.01**	3.91**
	D+L (Deflection)	0.33	0.40	0.52	0.66	0.93	1.12	1.48	1.86	0.71	0.86	1.14	1.43
	L (Deflection)	0.29	0.35	0.46	0.58	0.69	0.84	1.10	1.39	0.55	0.66	0.87	1.10
4570	$\alpha_D D + \alpha_L L$ (Strength)	1.43	1.83	2.41	3.03	1.24**	1.6**	2.2**	2.86**	1.59**	2.04**	2.8**	3.64**
	D+L (Deflection)	0.29	0.35	0.46	0.58	0.83	1.00	1.32	1.66	0.63	0.77	1.01	1.27
	L (Deflection)	0.26	0.32	0.42	0.53	0.62	0.75	1.00	1.25	0.49	0.60	0.79	0.99

2590	$\alpha_D D + \alpha_L L$ (Strength)	4.74	← Max. superimposed factored LSD dead + live load (kPa) (governed by strength limitation)
	D+L (Deflection)	2.05	← Max. superimposed unfactored LSD dead + live load (kPa) (governed by deflection limitation of L/240)
	L (Deflection)	1.44	← 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 102 mm of interior bearing.
 3. Loads marked with two asterisks (**) are governed by moment & shear or moment & reactions (web crippling) assuming 102 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.