

Roof Decks - Type N

ASD

PROPERTIES

SECTION PROPERTIES

DESIGN STRENGTHS

Gage	F _y (ksi)	Coverage (in.)	Thickness (in.)	Weight (psf)	I _p (in. ⁴ /ft.)	I _n (in. ⁴ /ft.)	S _p (in. ³ /ft.)	S _n (in. ³ /ft.)	Mn,p/Ω (in.-lb./ft.)	Mn,n/Ω (in.-lb./ft.)	Vn/Ω (lb./ft.)	Rbe/Ω (lb./ft.)	Rbi/Ω (lb./ft.)
22	33	24	0.0295	2.05	0.720	0.888	0.386	0.438	7623	8646	2232	381	750
20	33	24	0.0358	2.48	0.936	1.088	0.507	0.557	10011	11005	3287	549	1079
18	33	24	0.0474	3.29	1.342	1.440	0.696	0.757	13751	14956	4707	930	1822
16	33	24	0.0598	4.14	1.775	1.814	0.901	0.951	17797	18783	5914	1436	2805

- Notes:**
1. Section properties are calculated in accordance with the AISI Cold-Formed Steel Design Specifications, 2007 Edition.
 2. Rbe/Ω and Rbi/Ω values are based on minimum bearing lengths of 1.5" for end bearing and 3" for interior bearing.

ALLOWABLE UNIFORM LOADS AND MAXIMUM CONSTRUCTION SPANS

Span Condition	Gage	Allowable Uniform Total Load (psf) / Load that Produces L/240" Deflection (psf)										Max. Constr. Span (Ctr. to Ctr.)
		Center to Center Span (ft. - in.)										
		10 - 0	10 - 6	11 - 0	11 - 6	12 - 0	12 - 6	13 - 0	13 - 6	14 - 0	14 - 6	
Single	22	51 / 47	46 / 41	42 / 35	38 / 31	35 / 27	33 / 24	30 / 21	28 / 19	26 / 17	24 / 15	12' - 8"
	20	67 / 61	61 / 53	55 / 46	50 / 40	46 / 36	43 / 31	39 / 28	37 / 25	34 / 22	32 / 20	16' - 8"
	18	92 / 88	83 / 76	76 / 66	69 / 58	64 / 51	59 / 45	54 / 40	50 / 36	47 / 32	44 / 29	22' - 10"
	16	119 / 116	108 / 101	98 / 87	90 / 77	82 / 67	76 / 60	70 / 53	65 / 47	61 / 42	56 / 38	29' - 7"
Double	22	57 / 127	52 / 110	47 / 95	43 / 84	40 / 74	37 / 65	34 / 58	31 / 52	29 / 46	27 / 42	15' - 3"
	20	73 / 160	66 / 138	60 / 120	55 / 105	51 / 93	47 / 82	43 / 73	40 / 65	37 / 58	35 / 52	20' - 1"
	18	99 / 220	90 / 190	82 / 165	75 / 145	69 / 127	64 / 113	59 / 100	54 / 89	51 / 80	47 / 72	27' - 7"
	16	124 / 284	113 / 245	103 / 213	94 / 187	87 / 164	80 / 145	74 / 129	68 / 115	64 / 103	59 / 93	30' - 0"
Triple	22	68 / 99	64 / 86	59 / 75	54 / 65	49 / 58	46 / 51	42 / 45	39 / 40	36 / 36	34 / 33	15' - 6"
	20	90 / 125	82 / 108	75 / 94	69 / 82	63 / 72	58 / 64	54 / 57	50 / 51	46 / 46	43 / 41	20' - 4"
	18	123 / 172	112 / 149	102 / 129	93 / 113	86 / 100	79 / 88	73 / 78	68 / 70	63 / 63	59 / 56	27' - 11"
	16	155 / 222	140 / 192	128 / 167	117 / 146	108 / 128	99 / 114	92 / 101	85 / 90	79 / 81	74 / 73	30' - 0"

- Notes:**
1. Maximum construction spans are based on minimum bearing lengths of 1.5" for end bearing and 3" for interior bearing. Check web crippling if minimums are not met.
 2. Uniform loads and maximum construction spans are based on ANSI/SDI RD-2010 Standard for Steel Roof Deck and the following construction loading:
• Deck self-weight plus worst-case of either a 200 lb. concentrated load or a 0 psf uniform load.
 3. Maximum construction spans shown include a check for a nominal 200 lbs. concentrated load supported by a one foot section of deck per SDI criteria, which exceeds the IBC requirement of a 300 lbs. roof maintenance load distributed over an area of 2 1/2 feet by 2 1/2 feet per Section 1607.4 and Table 1607.1.
 4. Values shown in RED are shown for use in determining deck capacity under deflection limits more stringent than Span/240. The total loads shown are not to be exceeded.
 5. See website at www.newmill.com for Factory Mutual approved deck types and maximum FM construction spans.

MAXIMUM CANTILEVER SPANS

Gage	Back-Span Condition		
	Single	Double	Triple
22	3' - 3"	3' - 3"	3' - 3"
20	3' - 10"	4' - 0"	4' - 0"
18	4' - 2"	4' - 11"	5' - 0"
16	4' - 6"	5' - 3"	5' - 4"

- Maximum cantilever spans shown are based on the following criteria:
- ANSI/SDI RD-2010 Standard for Steel Roof Deck.
 - Adjacent span assumed to be at least 3 times longer than the cantilever and no greater than the max. constr. span shown in table above.
 - Bearing width at perimeter support assumed to be 3" minimum.
 - Design total uniform load of 45 psf in conjunction with a 100 lb. concentrated load.