

Roof Decks - Type F

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	40	36	0.0295	1.58	0.118	0.128	0.110	0.121	2629	2890	2337	622	1144
20	40	36	0.0358	1.92	0.149	0.155	0.136	0.146	3266	3494	2828	887	1641
18	40	36	0.0474	2.54	0.205	0.205	0.186	0.192	4447	4595	3723	1483	2761
16	33	36	0.0598	3.21	0.259	0.259	0.240	0.240	4737	4748	3851	1872	3498

- 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.)										
		4 - 0	4 - 6	5 - 0	5 - 6	6 - 0	6 - 6	7 - 0	7 - 6	8 - 0	8 - 6	
Single	22	110 / 121	87 / 85	70 / 62	58 / 46	49 / 36	41 / 28	36 / 23	31 / 18	27 / 15	24 / 13	4' - 4"
	20	136 / 153	108 / 107	87 / 78	72 / 59	60 / 45	52 / 36	44 / 29	39 / 23	34 / 19	30 / 16	5' - 5"
	18	185 / 210	146 / 147	119 / 107	98 / 81	82 / 62	70 / 49	61 / 39	53 / 32	46 / 26	41 / 22	7' - 4"
	16	197 / 265	156 / 186	126 / 136	104 / 102	88 / 78	75 / 62	64 / 49	56 / 40	49 / 33	44 / 28	7' - 10"
Double	22	120 / 304	95 / 213	77 / 155	63 / 117	53 / 90	45 / 71	39 / 57	34 / 46	30 / 38	27 / 32	5' - 3"
	20	145 / 376	114 / 264	93 / 193	77 / 145	65 / 111	55 / 88	47 / 70	41 / 57	36 / 47	32 / 39	6' - 6"
	18	190 / 506	150 / 356	122 / 259	101 / 195	85 / 150	72 / 118	62 / 94	54 / 77	48 / 63	42 / 53	8' - 11"
	16	196 / 639	155 / 449	126 / 327	104 / 246	88 / 189	75 / 149	64 / 119	56 / 97	49 / 80	44 / 67	9' - 6"
Triple	22	149 / 238	118 / 167	96 / 122	79 / 91	67 / 70	57 / 55	49 / 44	43 / 36	38 / 30	33 / 25	5' - 4"
	20	180 / 294	142 / 207	116 / 151	96 / 113	80 / 87	69 / 69	59 / 55	52 / 45	45 / 37	40 / 31	6' - 7"
	18	237 / 396	187 / 278	152 / 203	126 / 152	106 / 117	90 / 92	78 / 74	68 / 60	60 / 50	53 / 41	9' - 0"
	16	244 / 500	194 / 351	157 / 256	130 / 192	109 / 148	93 / 117	80 / 93	70 / 76	62 / 62	55 / 52	9' - 7"

- 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	1' - 1"	1' - 1"	1' - 1"
20	1' - 4"	1' - 4"	1' - 4"
18	1' - 9"	1' - 9"	1' - 9"
16	1' - 10"	1' - 10"	1' - 10"

- 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.