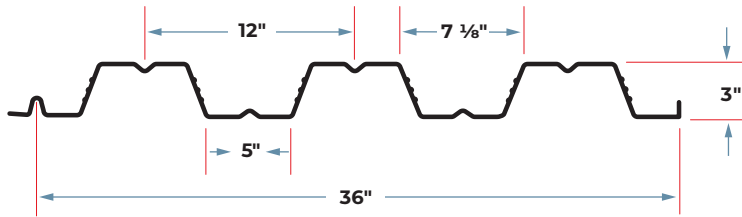


3" COMPOSITE DECK

GRADE 50 STEEL



Options

Hanger Tabs

Section Properties

Gage	Design Thickness (inches)	Weight (psf)	F _y ksi	S _e + (inch ³) per foot	S _e - (inch ³) per foot	ASD (Ω = 1.67)		I _d + (inch ⁴) per ft.	I _d - (inch ⁴) per ft.
						M _p / Ω inch-lbs per ft	M _n / Ω inch-lbs per foot		
22	0.0295	1.7	50	0.397	0.426	11895	12744	0.722	0.680
20	0.0358	2.1	50	0.525	0.559	15709	16747	0.908	0.870
18	0.0474	2.7	50	0.796	0.795	23822	23812	1.274	1.260
16	0.0598	3.5	50	1.009	1.010	30200	30230	1.624	1.610

Note

All section properties and ASD flexural strengths are calculated in accordance with ANSI/SDI RD-2017, AISI S100-2012 and AISI S100-2016.

Shear and Web Crippling

Gage	V _n /Ω (lbs/ft)	Web Crippling (R _n /Ω), lbs/ft One Flange Loading End Bearing			Web Crippling (R _n /Ω), lbs/ft One Flange Loading Interior Bearing		
		2"	3"	4"	2"	3"	4"
22	1781	402	463	515	643	728	799
20	2985	578	663	734	928	1045	1143
18	4372	974	1110	1224	1575	1760	1917
16	7370	1497	1696	1864	2435	2707	2936

Note

All section properties and ASD flexural strengths are calculated in accordance with ANSI/SDI RD-2017, AISI S100-2012 and AISI S100-2016.

Allowable Uniform Downward Loads, ASD (PSF)

Span	Gage	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'
Single	22	220	162	124	98	79	66	55	47	40	35	31
	20	291	214	164	129	105	87	73	62	53	47	41
	18	441	324	248	196	159	131	110	94	81	71	62
	16	559	411	315	249	201	166	140	119	103	89	79
Double	22	236	173	133	105	85	70	59	50	43	38	33
	20	310	228	174	138	112	92	78	66	57	50	44
	18	441	324	248	196	159	131	110	94	81	71	62
	16	560	411	315	249	202	167	140	119	103	90	79
Triple	22	295	217	166	131	106	88	74	63	54	47	41
	20	388	285	218	172	140	115	97	83	71	62	55
	18	551	405	310	245	198	164	138	117	101	88	78
	16	700	514	394	311	252	208	175	149	129	112	98

Notes

- All section properties and ASD (Ω = 1.67) uniform loads are calculated in accordance with ANSI/SDI RD-2017, AISI S100-2012 and AISI S100-2016
- Loads shown in tables are uniformly distributed superimposed loads in psf. Span length assumes center-to-center spacing of supports. Tabulated loads shall not be increased by assuming clear span dimensions.
- Bending Moment formulae used for flexural stress limitations are: Simple and Two Span $M = \frac{wL^2}{8}$ Three Span or More $M = \frac{wL^2}{10}$
- Web crippling and shear have not been accounted for in these tables. Required bearing should be determined based on specific span conditions.

Uniform Superimposed Service Load that Causes L/240 Deflection (PSF)

Span	Gage	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'
Single	22	207	130	87	61	45	34	26	20	16	13	11
	20	264	167	112	78	57	43	33	26	21	17	14
	18	383	241	162	113	83	62	48	38	30	25	20
	16	489	308	206	145	106	79	61	48	39	31	26
Double	22	498	313	210	147	107	81	62	49	39	32	26
	20	637	401	269	189	138	103	80	63	50	41	34
	18	922	581	389	273	199	150	115	91	73	59	49
	16	1178	742	497	349	254	191	147	116	93	75	62
Triple	22	389	245	164	115	84	63	49	38	31	25	21
	20	498	314	210	148	108	81	62	49	39	32	26
	18	722	454	304	214	156	117	90	71	57	46	38
	16	922	581	389	273	199	150	115	91	73	59	49

Note

For loads that cause L/120 Deflection, multiply by 2.0. For loads that cause L/180 Deflection, multiply by 1.5. For loads that cause L/360 Deflection, multiply by 0.667.

Construction Span Table – 20 psf Construction Load

Normal Weight Concrete (145 pcf)					Lightweight Concrete (115 pcf)				
Total Slab Depth	Deck Type	Maximum Unshored Clear Span			Total Slab Depth	Deck Type	Maximum Unshored Clear Span		
		1 span	2 span	3 span			1 span	2 span	3 span
5.00 (t=2.00) 46 PSF	3x12x22 ga	10' 3"	11' 4"	11' 9"	5.00 (t=2.00) 37 PSF	3x12x22 ga	11' 2"	12' 3"	12' 7"
	3x12x20 ga	11' 12"	13' 0"	13' 5"		3x12x20 ga	12' 11"	13' 12"	14' 6"
	3x12x18 ga	13' 5"	15' 6"	16' 0"		3x12x18 ga	14' 5"	16' 8"	17' 3"
	3x12x16 ga	14' 7"	17' 6"	18' 1"		3x12x16 ga	15' 8"	18' 10"	19' 5"
5.50 (t=2.50) 52 PSF	3x12x22 ga	9' 10"	10' 10"	11' 3"	5.50 (t=2.50) 42 PSF	3x12x22 ga	10' 8"	11' 8"	12' 1"
	3x12x20 ga	11' 6"	12' 5"	12' 10"		3x12x20 ga	12' 4"	13' 5"	13' 10"
	3x12x18 ga	12' 11"	14' 10"	15' 4"		3x12x18 ga	13' 10"	16' 0"	16' 6"
	3x12x16 ga	14' 0"	16' 9"	17' 4"		3x12x16 ga	15' 0"	18' 0"	18' 8"
6.00 (t=3.00) 58 PSF	3x12x22 ga	9' 5"	10' 5"	10' 9"	6.00 (t=3.00) 47 PSF	3x12x22 ga	10' 2"	11' 3"	11' 8"
	3x12x20 ga	11' 4"	12' 10"	13' 4"		3x12x20 ga	12' 4"	14' 2"	14' 8"
	3x12x18 ga	12' 5"	14' 3"	14' 9"		3x12x18 ga	13' 4"	15' 5"	15' 11"
	3x12x16 ga	13' 6"	16' 1"	16' 7"		3x12x16 ga	14' 6"	17' 4"	17' 11"
6.50 (t=3.50) 64 PSF	3x12x22 ga	9' 0"	10' 1"	10' 5"	6.50 (t=3.50) 49 PSF	3x12x22 ga	10' 0"	11' 1"	11' 6"
	3x12x20 ga	10' 8"	11' 6"	11' 11"		3x12x20 ga	11' 9"	12' 9"	13' 2"
	3x12x18 ga	12' 0"	13' 9"	14' 3"		3x12x18 ga	13' 2"	15' 2"	15' 8"
	3x12x16 ga	13' 1"	15' 6"	16' 0"		3x12x16 ga	14' 3"	17' 1"	17' 8"
7.00 (t=4.00) 70 PSF	3x12x22 ga	8' 9"	9' 9"	10' 1"	7.00 (t=4.00) 52 PSF	3x12x22 ga	9' 10"	10' 10"	11' 3"
	3x12x20 ga	10' 3"	11' 2"	11' 6"		3x12x20 ga	11' 6"	12' 5"	12' 10"
	3x12x18 ga	11' 8"	13' 3"	13' 9"		3x12x18 ga	12' 11"	14' 10"	15' 4"
	3x12x16 ga	12' 8"	15' 0"	15' 6"		3x12x16 ga	14' 0"	16' 9"	17' 4"
7.50 (t=4.50) 76 PSF	3x12x22 ga	8' 5"	9' 5"	9' 9"	7.50 (t=4.50) 59 PSF	3x12x22 ga	9' 4"	10' 4"	10' 9"
	3x12x20 ga	9' 11"	10' 9"	11' 2"		3x12x20 ga	11' 0"	11' 11"	12' 3"
	3x12x18 ga	11' 4"	12' 10"	13' 4"		3x12x18 ga	12' 4"	14' 2"	14' 8"
	3x12x16 ga	12' 4"	14' 6"	15' 0"		3x12x16 ga	13' 5"	16' 0"	16' 6"

Note

Web crippling and shear have not been accounted for in these tables. Required bearing should be determined based on specific span conditions.

Maximum Cantilever Spans

3C Deck		50 ksi	
Live Load	20	psf	with concrete
P1	150	plf	
Deck Weight	2	psf	
Live Load	50	psf	without concrete
Total Slab Thickness	Deck Gage	Maximum Cantilever (inches) NWC	Maximum Cantilever (inches) LWC
5	22	49	49
5	20	60	60
5	18	77	77
5	16	86	90
5.5	22	49	49
5.5	20	60	60
5.5	18	77	77
5.5	16	84	88
6	22	49	49
6	20	60	60
6	18	77	77
6	16	82	86
6.5	22	49	49
6.5	20	60	60
6.5	18	75	77
6.5	16	80	84
7	22	49	49
7	20	60	60
7	18	73	77
7	16	78	82
7.5	22	49	49
7.5	20	60	60
7.5	18	72	76
7.5	16	76	80

Assumes that back span is greater than the cantilever span.
Applicable to single, double, triple span or greater

Controlled by concentrated load + 50 psf

Controlled by concrete weight + 20 psf

Controlled by Deflection

Composite Deck-Slab Allowable Superimposed Load (ASD), PSF**22 ga Normalweight Concrete (145 pcf, f'c = 3,000 psi)**

Slab Thickness (Inches)	Weight (psf)	8'-0	8'-6	9'-0	9'-6	10'-0	10'-6	11'-0
5	46	272	238	210	186	165	147	132
5.5	52	329	288	254	225	200	179	160
6	58	388	340	300	266	237	212	190
6.5	64	400	394	347	308	274	245	220
7	70	400	400	396	351	313	280	252
7.5	76	400	400	400	395	352	316	284

Slab Thickness (Inches)	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0	14'-6	15'-0
5	118	107	96	87	79	71	65	59
5.5	144	130	117	106	96	88	80	72
6	171	154	140	127	115	105	95	87
6.5	199	179	162	147	134	122	111	102
7	227	205	186	169	154	140	128	117
7.5	256	231	210	191	174	158	145	132

20 ga Normalweight Concrete (145 pcf, f'c = 3,000 psi)

Slab Thickness (Inches)	Weight (psf)	8'-0	8'-6	9'-0	9'-6	10'-0	10'-6	11'-0
5	46	329	288	254	226	201	180	162
5.5	52	397	349	308	273	244	218	196
6	58	400	400	363	323	288	258	232
6.5	64	400	400	400	374	334	299	270
7	70	400	400	400	400	381	342	308
7.5	76	400	400	400	400	400	385	347

Slab Thickness (Inches)	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0	14'-6	15'-0
5	146	132	119	108	98	90	82	75
5.5	177	160	145	132	120	110	100	92
6	210	190	172	157	143	131	120	110
6.5	244	221	201	183	167	152	140	128
7	278	252	229	209	191	175	160	147
7.5	314	285	259	236	216	198	181	166