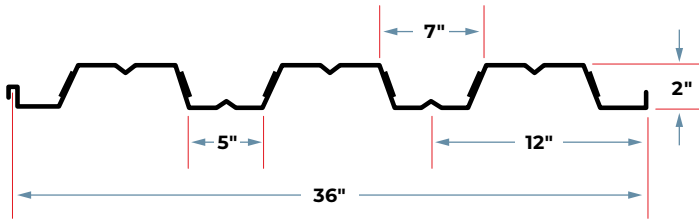


2" COMPOSITE DECK

GRADE 33 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	1.6	33	0.274	0.279	5407	5516	0.324	0.307
20	0.0358	1.9	33	0.362	0.368	7160	7278	0.409	0.393
18	0.0474	2.5	33	0.515	0.513	10170	10144	0.557	0.553
16	0.0598	3.2	33	0.645	0.645	12752	12752	0.703	0.703

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	1474	273	314	349	414	468	514
20	1836	390	447	495	597	672	735
18	2419	651	741	818	1011	1130	1231
16	3037	994	1126	1238	1563	1737	1883

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	100	74	56	45	36	30	25	21	18	16	14
	20	133	97	75	59	48	39	33	28	24	21	19
	18	188	138	106	84	68	56	47	40	35	30	26
	16	236	173	133	105	85	70	59	50	43	38	33
Double	22	102	75	57	45	37	30	26	22	19	16	14
	20	135	99	76	60	49	40	34	29	25	22	19
	18	188	138	106	83	68	56	47	40	35	30	26
	16	236	173	133	105	85	70	59	50	43	38	33
Triple	22	128	94	72	57	46	38	32	27	23	20	18
	20	168	124	95	75	61	50	42	36	31	27	24
	18	235	173	132	104	85	70	59	50	43	38	33
	16	295	217	166	131	106	88	74	63	54	47	42

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	93	59	39	28	20	15	12	9	7	6	5
	20	120	75	50	35	26	19	15	12	9	8	6
	18	168	106	71	50	36	27	21	17	13	11	9
	16	214	135	90	63	46	35	27	21	17	14	11
Double	22	224	141	95	66	48	36	28	22	18	14	12
	20	288	181	121	85	62	47	36	28	23	18	15
	18	405	255	171	120	87	66	51	40	32	26	21
	16	515	324	217	153	111	84	64	51	41	33	27
Triple	22	176	111	74	52	38	29	22	17	14	11	9
	20	225	142	95	67	49	37	28	22	18	14	12
	18	317	200	134	94	68	51	40	31	25	20	17
	16	403	254	170	119	87	65	50	40	32	26	21

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)				
Total Slab Depth	Deck Type	Maximum Unshored Clear Span		
		1 span	2 span	3 span
4.00 (t=2.00) 39 PSF	2x12x22 ga	6' 6"	7' 8"	7' 9"
	2x12x20 ga	7' 10"	9' 1"	9' 4"
	2x12x18 ga	9' 11"	10' 8"	11' 1"
	2x12x16 ga	11' 5"	12' 0"	12' 5"
4.50 (t=2.50) 45 PSF	2x12x22 ga	6' 3"	7' 3"	7' 4"
	2x12x20 ga	7' 6"	8' 8"	8' 10"
	2x12x18 ga	9' 5"	10' 2"	10' 7"
	2x12x16 ga	10' 10"	11' 5"	11' 10"
5.00 (t=3.00) 51 PSF	2x12x22 ga	5' 12"	7' 0"	7' 1"
	2x12x20 ga	7' 12"	8' 9"	9' 0"
	2x12x18 ga	8' 11"	9' 9"	10' 1"
	2x12x16 ga	10' 4"	10' 11"	11' 4"
5.50 (t=3.50) 57 PSF	2x12x22 ga	5' 9"	6' 9"	6' 9"
	2x12x20 ga	6' 11"	7' 11"	8' 1"
	2x12x18 ga	8' 7"	9' 4"	9' 8"
	2x12x16 ga	9' 10"	10' 6"	10' 10"
6.00 (t=4.00) 63 PSF	2x12x22 ga	5' 7"	6' 6"	6' 7"
	2x12x20 ga	6' 8"	7' 8"	7' 10"
	2x12x18 ga	8' 3"	9' 0"	9' 4"
	2x12x16 ga	9' 6"	10' 1"	10' 6"
6.50 (t=4.50) 69 PSF	2x12x22 ga	5' 4"	6' 3"	6' 4"
	2x12x20 ga	6' 5"	7' 5"	7' 7"
	2x12x18 ga	8' 0"	8' 9"	9' 0"
	2x12x16 ga	9' 2"	9' 9"	10' 1"

Lightweight Concrete (115 pcf)				
Total Slab Depth	Deck Type	Maximum Unshored Clear Span		
		1 span	2 span	3 span
4.00 (t=2.00) 31 PSF	2x12x22 ga	7' 0"	8' 3"	8' 4"
	2x12x20 ga	8' 6"	9' 9"	10' 1"
	2x12x18 ga	10' 9"	11' 6"	11' 11"
	2x12x16 ga	12' 5"	12' 11"	13' 4"
4.50 (t=2.50) 35 PSF	2x12x22 ga	6' 9"	7' 11"	8' 0"
	2x12x20 ga	8' 2"	9' 5"	9' 8"
	2x12x18 ga	10' 3"	11' 1"	11' 6"
	2x12x16 ga	11' 11"	12' 5"	12' 10"
5.00 (t=3.00) 39 PSF	2x12x22 ga	6' 6"	7' 8"	7' 9"
	2x12x20 ga	8' 10"	9' 7"	9' 11"
	2x12x18 ga	9' 11"	10' 8"	11' 1"
	2x12x16 ga	11' 5"	12' 0"	12' 5"
5.50 (t=3.50) 44 PSF	2x12x22 ga	6' 3"	7' 4"	7' 5"
	2x12x20 ga	7' 7"	8' 8"	8' 11"
	2x12x18 ga	9' 6"	10' 3"	10' 7"
	2x12x16 ga	10' 11"	11' 6"	11' 11"
6.00 (t=4.00) 48 PSF	2x12x22 ga	6' 1"	7' 1"	7' 2"
	2x12x20 ga	7' 4"	8' 5"	8' 8"
	2x12x18 ga	9' 2"	10' 0"	10' 4"
	2x12x16 ga	10' 7"	11' 2"	11' 7"
6.50 (t=4.50) 53 PSF	2x12x22 ga	5' 11"	6' 11"	7' 0"
	2x12x20 ga	7' 1"	8' 2"	8' 4"
	2x12x18 ga	8' 10"	9' 7"	9' 11"
	2x12x16 ga	10' 2"	10' 9"	11' 2"

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

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

Slab Thickness (Inches)	Weight (psf)	7'-0	7'-6	8'-0"	8'-6	9'-0	9'-6	10'-0
4	39	209	180	155	135	118	104	91
4.5	45	254	218	188	164	143	126	111
5	51	300	258	223	194	170	150	132
5.5	57	348	299	259	226	198	174	154
6	63	397	341	296	258	226	199	176
6.5	69	400	384	333	291	255	225	199

Slab Thickness (Inches)	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	81	72	64	57	50	45	40	36
4.5	99	88	78	69	62	55	49	44
5	117	104	93	83	74	66	59	53
5.5	137	122	109	97	87	78	70	63
6	157	139	125	111	100	90	80	72
6.5	177	158	141	126	113	102	91	82

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

Slab Thickness (Inches)	Weight (psf)	7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	39	254	219	190	165	145	128	113
4.5	45	308	265	230	201	176	155	138
5	51	364	314	272	238	209	184	164
5.5	57	400	364	316	276	243	214	190
6	63	400	400	361	315	277	245	218
6.5	69	400	400	400	355	313	277	246

Slab Thickness (Inches)	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	101	90	80	72	64	58	52	47
4.5	123	109	98	88	79	71	64	58
5	146	130	117	105	94	85	77	69
5.5	170	152	136	122	110	99	90	81
6	194	174	156	140	126	114	103	93
6.5	219	196	176	159	143	129	117	106

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

Slab Thickness (Inches)	Weight (psf)	7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	39	333	288	250	219	193	171	152
4.5	45	400	348	303	265	234	207	185
5	51	400	400	359	314	277	246	219
5.5	57	400	400	400	365	322	286	255
6	63	400	400	400	400	368	327	292
6.5	69	400	400	400	400	400	369	329

Slab Thickness (Inches)	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	136	122	110	99	89	81	73	67
4.5	165	148	133	120	109	99	90	82
5	196	176	158	143	130	118	107	97
5.5	228	205	185	167	151	137	125	114
6	261	235	212	191	174	158	144	131
6.5	295	265	239	216	196	179	163	149

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

Slab Thickness (Inches)	Weight (psf)	7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	39	400	357	311	273	241	214	191
4.5	45	400	400	377	331	292	260	232
5	51	400	400	400	392	347	308	275
5.5	57	400	400	400	400	400	359	321
6	63	400	400	400	400	400	400	367
6.5	69	400	400	400	400	400	400	400

Slab Thickness (Inches)	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	171	154	139	126	114	104	95	87
4.5	208	187	169	153	139	127	116	106
5	247	222	201	182	166	151	138	126
5.5	288	259	234	213	193	176	161	148
6	330	297	269	244	222	203	185	170
6.5	372	336	304	276	251	229	210	192

22 ga Lightweight Concrete (115 pcf, f'c = 3,000 psi)

Slab Thickness (Inches)	Weight (psf)	7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	31	205	176	153	133	117	103	91
4.5	35	249	215	186	163	143	126	112
5	39	296	255	221	193	170	150	134
5.5	44	343	296	257	225	198	175	155
6	48	393	339	294	257	227	201	178
6.5	53	400	381	332	290	256	226	201

Slab Thickness (Inches)	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	81	73	65	58	52	47	42	38
4.5	100	89	80	72	64	58	52	47
5	119	107	96	86	77	70	63	57
5.5	139	124	111	100	90	82	74	67
6	159	143	128	116	104	94	86	78
6.5	180	161	145	131	118	107	97	88

20 ga Lightweight Concrete (115 pcf, f'c = 3,000 psi)

Slab Thickness (Inches)	Weight (psf)	7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	31	248	213	185	162	143	126	112
4.5	35	301	259	226	197	174	154	137
5	39	357	308	268	235	207	183	163
5.5	44	400	357	311	273	240	213	190
6	48	400	400	356	312	276	245	218
6.5	53	400	400	400	352	311	276	246

Slab Thickness (Inches)	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	100	90	81	73	66	59	54	49
4.5	123	110	99	89	81	73	66	60
5	146	131	118	107	97	88	80	72
5.5	170	153	138	124	113	102	93	85
6	195	175	158	143	130	118	107	98
6.5	220	198	179	162	147	133	121	111

18 ga Lightweight Concrete (115 pcf, f'c = 3,000 psi)

Slab Thickness (Inches)	Weight (psf)	7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	31	322	278	242	213	188	167	149
4.5	35	391	338	294	258	228	203	181
5	39	400	400	349	307	271	241	216
5.5	44	400	400	400	357	316	281	251
6	48	400	400	400	400	362	322	288
6.5	53	400	400	400	400	400	364	325

Slab Thickness (Inches)	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	133	120	108	98	89	81	74	67
4.5	162	146	132	120	109	99	90	83
5	194	174	158	143	130	118	108	99
5.5	225	203	184	167	152	138	126	116
6	259	233	211	192	174	159	146	134
6.5	292	264	239	217	197	180	165	151

16 ga Lightweight Concrete (115 pcf, f'c = 3,000 psi)

Slab Thickness (Inches)	Weight (psf)	7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	31	396	343	299	263	233	207	185
4.5	35	400	400	363	320	283	252	225
5	39	400	400	400	380	337	300	268
5.5	44	400	400	400	400	392	349	313
6	48	400	400	400	400	400	400	359
6.5	53	400	400	400	400	400	400	400

Slab Thickness (Inches)	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	166	150	136	123	112	102	94	86
4.5	203	183	166	150	137	125	115	105
5	241	218	198	180	164	150	137	126
5.5	281	254	230	210	191	175	160	147
6	323	292	265	241	220	201	185	170
6.5	366	331	300	273	249	228	209	193

