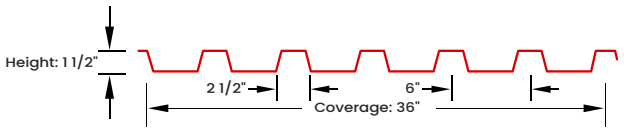
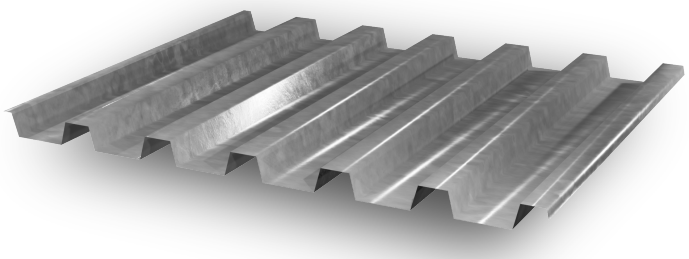
MIAMI METAL DECK

TYPE "BI" FORM DECK
50 ksi

Type "BI" inverted form deck is used when the spans and loads exceed the capability of standard and heavy duty form decks.



Material: Galvanized G90 or G60 ASTM A653 Structural Steel Fy = 50 ksi.



Section Properties and Flexural Resistance (Bare Deck)

Gage	Design Thickness (inches)	Weight (psf)	F_y (ksi)	S_{e+} (in^3) per foot	S_{e-} (in^3) per foot	ASD (Ω = 1.67) M_p/Ω inch-lbs per foot	ASD (Ω = 1.67) M_n/Ω inch-lbs per foot	I_{d+} (in^4) per foot	I_{d-} (in^4) per foot
22	0.0295	1.7	50	0.172	0.165	5158	4939	0.149	0.176
20	0.0358	2.1	50	0.222	0.221	6656	6611	0.189	0.218
18	0.0474	2.7	50	0.312	0.299	9331	8962	0.267	0.298
16	0.0598	3.4	50	0.394	0.386	11806	11547	0.356	0.378

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

Shear and Web Crippling (Bare Deck)

Gage	Design Thickness (inches)	Fy (ksi)	V_n/Ω lbs per foot	Web Crippling (R_n/Ω), lbs/ft One Flange Loading End Bearing 1.5"	2"	3"	Web Crippling (R_n/Ω), lbs/ft One Flange Loading Interior Bearing 1.5"	2"	3"
22	0.0295	50	2804	840	923	1063	1357	1472	1665
20	0.0358	50	3392	1194	1309	1500	1938	2095	2358
18	0.0474	50	4465	1988	2168	2470	3247	3493	3905
16	0.0598	50	5599	3032	3293	3730	4984	5339	5934

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

STEEL DECK INSTITUTE sdi member

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ASD Uniform Superimposed Downward Loads (psf)

Span Cond.	Gage	Fy	5'- 0"	5'- 6"	6'- 0"	6'- 6"	7'- 0"	7'- 6"	8'- 0"	8'- 6"	9'- 0"	9'- 6"	10'- 0"
Single	22	50	138	114	96	81	70	61	54	48	42	38	34
	20	50	177	147	123	105	91	79	69	61	55	49	44
	18	50	249	206	173	147	127	111	97	83	77	69	62
	16	50	315	260	219	186	161	140	123	109	97	87	79
Double	22	50	132	109	91	78	67	59	51	46	41	36	33
	20	50	176	146	122	104	90	78	69	61	54	49	44
	18	50	239	198	166	141	122	106	93	83	74	66	60
	16	50	308	254	214	182	157	137	120	107	95	85	77
Triple	22	50	165	136	114	97	84	73	64	57	51	46	41
	20	50	220	182	153	130	112	98	86	76	68	61	55
	18	50	299	247	207	177	152	133	117	103	92	83	75
	16	50	385	318	267	228	196	171	150	133	119	107	96

Notes:

1. All section properties and ASD (Ω = 1.67) uniform loads are calculated in accordance with ANSI/SDI C-2017, ANSI/SDI NC-2017 and AISI S100-2012 and AISI S100-2016.
2. Loads shown in tables are uniformly distributed superimposed loads in psf. Span length assumes center-to-centerspacing of supports. Tabulated loads shall not be increased by assuming clear span dimensions.
3. Bending Moment formulae used for flexural stress limitations are:
   - Simple and Two Span M = W l2/8.
   - Three Span or More M = Wl2/10.
4. 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 Cond.	Gage	Fy	5'- 0"	5'- 6"	6'- 0"	6'- 6"	7'- 0"	7'- 6"	8'- 0"	8'- 6"	9'- 0"	9'- 6"	10'- 0"
Single	22	50	78	59	45	36	29	23	19	16	13	11	10
	20	50	99	75	57	45	36	29	24	20	17	14	12
	18	50	140	105	81	64	51	42	34	29	24	20	18
	16	50	187	140	108	85	68	55	46	38	32	27	23
Double	22	50	188	141	109	86	69	56	46	38	32	27	24
	20	50	239	179	138	109	87	71	58	49	41	35	30
	18	50	337	253	195	153	123	100	82	69	58	49	42
	16	50	450	338	260	205	164	133	110	92	77	66	56
Triple	22	50	147	111	85	67	54	44	36	30	25	21	18
	20	50	187	140	108	85	68	55	46	38	32	27	23
	18	50	264	198	153	120	96	78	64	54	45	38	33
	16	50	352	264	204	160	128	104	86	72	60	51	44

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	Gage	Maximum Unshored Clear Span		
		1 span	2 span	3 span
3.50" (t=2.00) 36 psf	22	6' 5"	7' 7"	7' 8"
	20	7' 8"	8' 10"	9' 1"
	18	8' 8"	10' 4"	10' 8"
	16	9' 6"	11' 9"	12' 1"
4.00" (t=2.50) 42 psf	22	6' 2"	7' 3"	7' 4"
	20	7' 4"	8' 5"	8' 8"
	18	8' 3"	9' 10"	10' 2"
	16	9' 1"	11' 2"	11' 6"
4.50" (t=3.00) 48 psf	22	5' 11"	6' 11"	7' 0"
	20	7' 1"	8' 4"	8' 7"
	18	7' 10"	9' 4"	9' 8"
	16	8' 8"	10' 8"	11' 0"
5.00" (t=3.50) 54 psf	22	5' 8"	6' 8"	6' 9"
	20	6' 8"	7' 9"	7' 11"
	18	7' 7"	9' 0"	9' 3"
	16	8' 4"	10' 2"	10' 7"
5.50" (t=4.00) 60 psf	22	5' 6"	6' 5"	6' 6"
	20	6' 5"	7' 5"	7' 7"
	18	7' 4"	8' 8"	8' 11"
	16	8' 0"	9' 10"	10' 2"
6.00" (t=4.50) 66 psf	22	5' 4"	6' 2"	6' 3"
	20	6' 3"	7' 2"	7' 4"
	18	7' 1"	8' 4"	8' 7"
	16	7' 9"	9' 6"	9' 9"

Lightweight Concrete (115 pcf)				
Total Slab Depth	Gage	Maximum Unshored Clear Span		
		1 span	2 span	3 span
3.50" (t=2.00) 27 psf	22	7' 0"	8' 3"	8' 5"
	20	8' 5"	9' 8"	10' 0"
	18	9' 6"	11' 3"	11' 8"
	16	10' 6"	12' 10"	13' 3"
4.00" (t=2.50) 32 psf	22	6' 8"	7' 10"	7' 12"
	20	8' 0"	9' 2"	9' 6"
	18	9' 0"	10' 9"	11' 1"
	16	9' 11"	12' 2"	12' 7"
4.50" (t=3.00) 37 psf	22	6' 5"	7' 6"	7' 7"
	20	7' 9"	9' 3"	9' 7"
	18	8' 7"	10' 3"	10' 7"
	16	9' 5"	11' 7"	12' 0"
5.00" (t=3.50) 41 psf	22	6' 2"	7' 3"	7' 4"
	20	7' 4"	8' 6"	8' 9"
	18	8' 3"	9' 11"	10' 3"
	16	9' 1"	11' 3"	11' 7"
5.50" (t=4.00) 46 psf	22	6' 0"	7' 0"	7' 1"
	20	7' 1"	8' 2"	8' 5"
	18	7' 12"	9' 6"	9' 10"
	16	8' 9"	10' 10"	11' 2"
6.00" (t=4.50) 50 psf	22	5' 10"	6' 10"	6' 11"
	20	6' 11"	7' 11"	8' 2"
	18	7' 9"	9' 3"	9' 7"
	16	8' 6"	10' 6"	10' 10"

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)

F_y: 50 ksi			f'_c : 3000 psi			Normal Weight Concrete (145 pcf)											
Slab Thickness	Gage	Weight (psf)	5'- 0"	5'- 6"	6'-0"	6'- 6"	7'-0"	7'-6"	8'-0"	8'- 6"	9'-0"	9'- 6"	10'- 0"	10'- 6"	11'- 0"	11'- 6"	12'- 0"
3.5"	22	36	400	400	400	400	372	321	279	244	214	190	169	150	135	121	109
	20	36	400	400	400	400	400	387	337	296	295	260	231	206	184	165	149
	18	36	400	400	400	400	400	393	342	300	265	235	209	187	168	152	137
	16	36	400	400	400	400	400	393	333	292	258	228	204	182	164	147	133
4"	22	42	400	400	400	400	400	392	341	244	214	190	169	150	135	121	109
	20	42	400	400	400	400	400	400	400	362	362	319	283	253	226	203	183
	18	42	400	400	400	400	400	400	400	368	325	288	257	230	207	187	169
	16	42	400	400	400	400	400	400	400	359	317	281	251	224	202	182	164
4.5"	22	48	400	400	400	400	400	400	400	355	313	277	246	220	197	178	160
	20	48	400	400	400	400	400	400	400	400	400	380	337	301	270	242	219
	18	48	400	400	400	400	400	400	400	400	387	344	307	275	247	223	202
	16	48	400	400	400	400	400	400	400	400	379	336	300	269	242	218	197
5"	22	54	400	400	400	400	400	400	400	400	364	322	287	256	230	207	187
	20	54	400	400	400	400	400	400	400	400	400	400	393	350	314	283	255
	18	54	400	400	400	400	400	400	400	400	400	400	358	321	289	261	236
	16	54	400	400	400	400	400	400	400	400	400	393	351	314	283	255	231
5.5"	22	60	400	400	400	400	400	400	400	400	364	328	293	263	237	237	214
	20	60	400	400	400	400	400	400	400	400	400	400	400	400	359	323	292
	18	60	400	400	400	400	400	400	400	400	400	400	400	368	331	299	271
	16	60	400	400	400	400	400	400	400	400	400	400	400	361	325	293	266
6"	22	66	400	400	400	400	400	400	400	400	400	400	369	330	297	267	241
	20	66	400	400	400	400	400	400	400	400	400	400	400	400	400	365	329
	18	66	400	400	400	400	400	400	400	400	400	400	400	400	374	338	306
	16	66	400	400	400	400	400	400	400	400	400	400	400	400	367	332	301

Composite Deck-Slab Allowable Superimposed Load (ASD)

F_y: 50 ksi			f'_c : 3000 psi			Lightweight Concrete (115 pcf)											
Slab Thickness	Gage	Weight (psf)	5'- 0"	5'- 6"	6'-0"	6'- 6"	7'-0"	7'-6"	8'-0"	8'- 6"	9'-0"	9'- 6"	10'- 0"	10'- 6"	11'- 0"	11'- 6"	12'- 0"
3.5"	22	27	400	400	400	400	364	314	274	240	212	188	168	150	135	122	110
	20	27	400	400	400	400	400	377	329	289	255	227	203	182	164	149	135
	18	27	400	400	400	400	400	374	326	287	253	225	201	181	163	147	134
	16	27	400	400	400	400	400	347	302	265	235	208	186	167	150	136	123
4"	22	32	400	400	400	400	400	385	335	294	260	231	206	185	166	150	136
	20	32	400	400	400	400	400	393	343	359	317	282	252	227	204	185	168
	18	32	400	400	400	400	400	374	326	303	268	238	213	191	172	156	142
	16	32	400	400	400	400	400	400	397	349	308	274	245	220	198	180	163
4.5"	22	37	400	400	400	400	400	400	399	350	310	275	245	220	198	179	162
	20	37	400	400	400	400	400	400	400	400	373	332	297	267	241	218	198
	18	37	400	400	400	400	400	400	400	400	379	337	302	271	244	221	201
	16	37	400	400	400	400	400	400	400	400	369	328	294	264	238	215	195
5"	22	41	400	400	400	400	400	400	400	400	361	321	287	257	232	209	190
	20	41	400	400	400	400	400	400	400	400	400	388	347	312	282	255	232
	18	41	400	400	400	400	400	400	400	400	400	395	353	317	286	259	236
	16	41	400	400	400	400	400	400	400	400	400	385	345	310	279	253	230
5.5"	22	46	400	400	400	400	400	400	400	400	400	367	328	294	265	239	217
	20	46	400	400	400	400	400	400	400	400	400	400	398	357	323	292	266
	18	46	400	400	400	400	400	400	400	400	400	400	400	364	329	298	271
	16	46	400	400	400	400	400	400	400	400	400	400	396	356	321	291	264
6"	22	50	400	400	400	400	400	400	400	400	400	400	370	332	300	271	246
	20	50	400	400	400	400	400	400	400	400	400	400	400	400	365	331	301
	18	50	400	400	400	400	400	400	400	400	400	400	400	400	372	337	307
	16	50	400	400	400	400	400	400	400	400	400	400	400	400	365	330	300