
HOUSTON
B-DECKING

Table 1A – Section Properties and Flexural Resistance (Bare Deck) (2x12 Composite and 2x12 Form)

							ASD (Ω = 1.67)			
Profile	Gage Number	Design Thickness (inches)	Weight (psf)	F_y ksi	S_{e+} (inch^3) per foot	S_{e-} (inch^3) per foot	M_p/Ω inch-lbs per ft	M_n/Ω inch-lbs per foot	I_{d+} (inch^4) per ft.	I_{d-} (inch^4) per ft.
2x12	22	0.0295	1.6	33	0.263	0.282	5188	5567	0.318	0.303
2x12	20	0.0358	1.9	33	0.350	0.373	6910	7371	0.400	0.387
2x12	18	0.0474	2.5	33	0.503	0.518	9933	10229	0.550	0.543
2x12	16	0.0598	3.2	33	0.653	0.653	12904	12897	0.703	0.700

Table 1A Notes:

1. All section properties and ASD flexural strengths are calculated in accordance with ANSI/SDI C-2017, ANSI/SDI NC-2017, ANSI/SDI SD-2022, and AISI S100-2012 and AISI S100-2016

Table 1B – Shear and Web Crippling (Bare Deck) (2x12 Composite and 2x12 Form) (33 ksi)

			Web Crippling (R_n/Ω), lbs/ft One Flange Loading End Bearing			Web Crippling (R_n/Ω), lbs/ft One Flange Loading Interior Bearing		
Profile	Gage Number	V_n/Ω lbs per ft	2”	3”	4”	2”	3”	4”
2x12	22	1189	279	322	357	435	492	541
2x12	20	1551	398	457	506	625	703	770
2x12	18	2057	665	757	835	1053	1178	1282
2x12	16	2583	1015	1150	1263	1622	1803	1955

Table 1A Notes:

1. All section properties and ASD flexural strengths are calculated in accordance with ANSI/SDI C-2017, ANSI/SDI NC-2017, ANSI/SDI SD-2022, and AISI S100-2012 and AISI S100-2016

Table 2 – 2x12 Deck (Bare Deck) – (2x12 Composite and 2x12 Form)

Table 2.1 2x12 Composite and 2x12 Form (33 ksi) ASD Uniform Superimposed Downward Loads (psf)

Span Cond.	Gage Number	6'-00"	7'-00"	8'-00"	9'-00"	10'-00"	11'-00"	12'-00"	13'-00"	14-00"	15'-00"	16'-00"
Single	22	96	71	54	43	35	29	24	20	18	15	14
	20	128	94	72	57	46	38	32	27	24	20	18
	18	184	135	103	82	66	55	46	39	34	29	26
	16	239	176	134	106	86	71	60	51	44	38	34
Double	22	103	76	58	46	37	31	26	22	19	16	14
	20	136	100	77	61	49	41	34	29	25	22	19
	18	189	139	107	84	68	56	47	40	35	30	27
	16	239	175	134	106	86	71	60	51	44	38	34
Triple	22	129	95	72	57	46	38	32	27	24	21	18
	20	171	125	96	76	61	51	43	36	31	27	24
	18	237	174	133	105	85	70	59	50	43	38	33
	16	299	219	168	133	107	89	75	64	55	48	42

Tables 2.1 and 2.2 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, ANSI/SDI SD-2022, 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-center spacing 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 $M = \frac{w\ell^2}{8}$

   Three Span or More $M = \frac{w\ell^2}{10}$

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

Table 2.3 2x12 Composite and 2x12 Form (33 ksi) Uniform Superimposed Service Load that Causes L/240 Deflection (psf)

Span Cond.	Gage Number	6'-00"	7'-00"	8'-00"	9'-00"	10'-00"	11'-00"	12'-00"	13'-00"	14-00"	15'-00"	16'-00"
Single	22	92	58	39	27	20	15	12	9	7	6	5
	20	118	74	50	35	25	19	15	12	9	8	6
	18	165	104	70	49	36	27	21	16	13	11	9
	16	213	134	90	63	46	35	27	21	17	14	11
Double	22	222	140	94	66	48	36	28	22	17	14	12
	20	283	178	119	84	61	46	35	28	22	18	15
	18	398	250	168	118	86	65	50	39	31	25	21
	16	512	323	216	152	111	83	64	50	40	33	27
Triple	22	174	109	73	51	38	28	22	17	14	11	9
	20	221	139	93	66	48	36	28	22	17	14	12
	18	311	196	131	92	67	50	39	31	24	20	16
	16	401	252	169	119	87	65	50	39	32	26	21

Table 2.3 Notes:

1. 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.

Table 4.1 – Construction Span Table – 2x12 Composite and 2x12 Form (Fy = 50 ksi) - 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 2x12x20 ga	6' 4" 7' 8"	7' 5" 9' 0"	7' 6" 9' 1"
	2x12x18 ga 2x12x16 ga	9' 9" 11' 6"	10' 9" 12' 1"	11' 1" 12' 6"
4.50 (t=2.50) 45 PSF	2x12x22 ga 2x12x20 ga	6' 1" 7' 4"	7' 1" 8' 7"	7' 2" 8' 8"
	2x12x18 ga 2x12x16 ga	9' 3" 10' 11"	10' 3" 11' 6"	10' 7" 11' 11"
5.00 (t=3.00) 51 PSF	2x12x22 ga 2x12x20 ga	5' 10" 7' 10"	6' 9" 8' 9"	6' 10" 9' 1"
	2x12x18 ga 2x12x16 ga	8' 10" 10' 5"	9' 10" 11' 0"	10' 2" 11' 4"
5.50 (t=3.50) 57 PSF	2x12x22 ga 2x12x20 ga	5' 7" 6' 9"	6' 6" 7' 10"	6' 7" 7' 11"
	2x12x18 ga 2x12x16 ga	8' 6" 9' 11"	9' 5" 10' 7"	9' 9" 10' 11"
6.00 (t=4.00) 63 PSF	2x12x22 ga 2x12x20 ga	5' 5" 6' 6"	6' 4" 7' 7"	6' 5" 7' 8"
	2x12x18 ga 2x12x16 ga	8' 2" 9' 7"	9' 1" 10' 2"	9' 4" 10' 6"
6.50 (t=4.50) 69 PSF	2x12x22 ga 2x12x20 ga	5' 3" 6' 3"	6' 1" 7' 4"	6' 2" 7' 5"
	2x12x18 ga 2x12x16 ga	7' 10" 9' 2"	8' 9" 9' 10"	9' 1" 10' 2"

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 2x12x20 ga	6' 9" 8' 3"	8' 0" 9' 8"	8' 1" 9' 10"
	2x12x18 ga 2x12x16 ga	10' 7" 12' 6"	11' 7" 13' 0"	11' 11" 13' 5"
4.50 (t=2.50) 35 PSF	2x12x22 ga 2x12x20 ga	6' 6" 7' 12"	7' 8" 9' 4"	7' 9" 9' 5"
	2x12x18 ga 2x12x16 ga	10' 1" 12' 0"	11' 2" 12' 6"	11' 6" 12' 11"
5.00 (t=3.00) 39 PSF	2x12x22 ga 2x12x20 ga	6' 4" 8' 8"	7' 5" 9' 8"	7' 6" 10' 0"
	2x12x18 ga 2x12x16 ga	9' 9" 11' 6"	10' 9" 12' 1"	11' 1" 12' 6"
5.50 (t=3.50) 44 PSF	2x12x22 ga 2x12x20 ga	6' 1" 7' 5"	7' 2" 8' 7"	7' 3" 8' 9"
	2x12x18 ga 2x12x16 ga	9' 4" 11' 0"	10' 4" 11' 7"	10' 8" 12' 0"
6.00 (t=4.00) 48 PSF	2x12x22 ga 2x12x20 ga	5' 11" 7' 2"	6' 11" 8' 4"	7' 0" 8' 5"
	2x12x18 ga 2x12x16 ga	9' 0" 10' 7"	10' 0" 11' 3"	10' 4" 11' 7"
6.50 (t=4.50) 53 PSF	2x12x22 ga 2x12x20 ga	5' 9" 6' 11"	6' 8" 8' 1"	6' 9" 8' 2"
	2x12x18 ga 2x12x16 ga	8' 8" 10' 3"	9' 8" 10' 10"	9' 12" 11' 3"

Tables 4 Notes:

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

Table 6A – Composite Deck-Slab Allowable Superimposed Load (ASD), psf

2 x 12	22 ga	F_y 33 ksi		f'_c 3000 psi		Normal weight Concrete (145 pcf)		
Slab Thickness (Inches)	Weight (psf)	7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	39	210	180	156	135	118	104	92
4.5	45	255	219	189	165	144	127	112
5	51	302	259	224	195	171	151	133
5.5	57	350	301	261	227	199	175	155
6	63	400	344	298	260	228	201	178
6.5	69	400	387	335	293	257	226	200

2 x 12	22 ga	F_y 33 ksi		f'_c 3000 psi		Normal weight Concrete (145 pcf)		
Slab Thickness (Inches)	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	81	72	64	57	51	45	40	36
4.5	99	88	78	70	62	56	50	44
5	118	105	94	84	75	67	60	54
5.5	138	122	109	98	88	78	70	63
6	158	140	125	112	101	90	81	73
6.5	178	159	142	127	114	103	92	83

Table 6B – Composite Deck-Slab Allowable Superimposed Load (ASD), psf

2 x 12	20 ga	F_y 33 ksi		f'_c 3000 psi		Normal weight Concrete (145 pcf)		
Slab Thickness (Inches)	Weight (psf)	7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	39	255	220	190	166	146	128	114
4.5	45	309	266	231	202	177	156	139
5	51	366	315	274	239	210	186	165
5.5	57	400	366	318	278	244	216	192
6	63	400	400	363	317	279	247	219
6.5	69	400	400	400	358	315	279	248

2 x 12	20 ga	F_y 33 ksi		f'_c 3000 psi		Normal weight Concrete (145 pcf)		
Slab Thickness (Inches)	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	101	90	81	72	65	58	52	47
4.5	123	110	98	88	79	71	64	58
5	147	131	117	105	95	85	77	70
5.5	171	153	137	123	111	100	90	82
6	196	175	157	141	127	115	104	94
6.5	221	198	178	160	144	130	118	107

Table 6C – Composite Deck-Slab Allowable Superimposed Load (ASD), psf

2 x 12	18 ga	F_y 33 ksi		f'_c 3000 psi		Normal weight Concrete (145 pcf)		
Slab Thickness (Inches)	Weight (psf)	7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	39	335	289	251	220	194	172	153
4.5	45	400	350	305	267	235	209	186
5	51	400	400	361	316	279	247	220
5.5	57	400	400	400	368	324	288	257
6	63	400	400	400	400	371	329	294
6.5	69	400	400	400	400	400	372	332

2 x 12	18 ga	F_y 33 ksi		f'_c 3000 psi		Normal weight Concrete (145 pcf)		
Slab Thickness (Inches)	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	137	122	110	99	90	81	74	67
4.5	166	149	134	121	110	99	90	82
5	197	177	160	144	131	119	108	98
5.5	230	206	186	168	153	139	126	115
6	263	237	213	193	175	159	145	132
6.5	297	267	241	218	198	180	164	150

Table 6D – Composite Deck-Slab Allowable Superimposed Load (ASD), psf

2 x 12	16 ga	F_y 33 ksi		f'_c 3000 psi		Normal weight Concrete (145 pcf)		
Slab Thickness (Inches)	Weight (psf)	7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	39	400	359	313	275	243	216	192
4.5	45	400	400	380	333	295	262	234
5	51	400	400	400	395	350	311	278
5.5	57	400	400	400	400	400	362	323
6	63	400	400	400	400	400	400	370
6.5	69	400	400	400	400	400	400	400

2 x 12	16 ga	F_y 33 ksi		f'_c 3000 psi		Normal weight Concrete (145 pcf)		
Slab Thickness (Inches)	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	172	155	140	127	115	105	96	87
4.5	210	189	170	154	140	128	117	107
5	249	224	203	184	167	152	139	127
5.5	290	261	236	215	195	178	163	149
6	332	300	271	246	224	204	187	171
6.5	376	339	307	278	254	231	212	194

Table 6E – Composite Deck-Slab Allowable Superimposed Load (ASD), psf

2 x 12	22 ga	F_y 33 ksi		f'_c 3000 psi		Normal weight Concrete (115 pcf)		
Slab Thickness (Inches)	Weight (psf)	7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	31	206	177	153	134	117	104	92
4.5	35	250	216	187	163	144	127	113
5	39	297	256	222	195	171	151	134
5.5	44	345	298	259	226	199	176	156
6	48	395	341	296	259	228	202	180
6.5	53	400	384	334	292	257	228	203

2 x 12	22 ga	F_y 33 ksi		f'_c 3000 psi		Normal weight Concrete (115 pcf)		
Slab Thickness (Inches)	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	82	73	65	58	52	47	42	38
4.5	100	90	80	72	65	58	53	48
5	120	107	96	86	78	70	64	58
5.5	140	125	112	101	91	82	74	67
6	160	144	129	116	105	95	86	78
6.5	181	162	146	132	119	108	98	89

Table 6F – Composite Deck-Slab Allowable Superimposed Load (ASD), psf

2 x 12	20 ga	F_y 33 ksi		f'_c 3000 psi		Normal weight Concrete (115 pcf)		
Slab Thickness (Inches)	Weight (psf)	7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	31	248	214	186	163	143	127	113
4.5	35	302	260	226	198	175	155	138
5	39	358	309	269	236	208	184	164
5.5	44	400	359	313	274	242	215	191
6	48	400	400	358	314	277	246	219
6.5	53	400	400	400	355	313	278	248

2 x 12	20 ga	F_y 33 ksi		f'_c 3000 psi		Normal weight Concrete (115 pcf)		
Slab Thickness (Inches)	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	101	90	81	73	66	59	54	49
4.5	123	110	99	90	81	73	67	60
5	147	132	119	107	97	88	80	73
5.5	171	154	138	125	113	103	94	85
6	197	177	159	144	131	119	108	99
6.5	222	200	180	163	148	134	122	112

Table 6G – Composite Deck-Slab Allowable Superimposed Load (ASD), psf

2 x 12	18 ga	F_y 33 ksi		f'_c 3000 psi		Normal weight Concrete (115 pcf)		
Slab Thickness (Inches)	Weight (psf)	7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	31	323	279	243	214	189	167	149
4.5	35	393	339	296	260	230	204	182
5	39	400	400	352	309	273	243	217
5.5	44	400	400	400	359	318	283	253
6	48	400	400	400	400	365	324	290
6.5	53	400	400	400	400	400	367	328

2 x 12	18 ga	F_y 33 ksi		f'_c 3000 psi		Normal weight Concrete (115 pcf)		
Slab Thickness (Inches)	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	134	120	109	98	89	81	74	68
4.5	163	147	133	120	109	100	91	83
5	195	175	159	144	131	119	109	100
5.5	227	204	185	168	153	139	127	117
6	261	235	213	193	176	160	147	135
6.5	295	266	241	218	199	182	166	152

Table 6H – Composite Deck-Slab Allowable Superimposed Load (ASD), psf

2 x 12	16 ga	F_y 33 ksi		f'_c 3000 psi		Normal weight Concrete (115 pcf)		
Slab Thickness (Inches)	Weight (psf)	7'-0	7'-6	8'-0	8'-6	9'-0	9'-6	10'-0
4	31	399	345	301	265	234	209	186
4.5	35	400	400	366	322	285	254	227
5	39	400	400	400	383	339	302	270
5.5	44	400	400	400	400	395	352	315
6	48	400	400	400	400	400	400	362
6.5	53	400	400	400	400	400	400	400

2 x 12	16 ga	F_y 33 ksi		f'_c 3000 psi		Normal weight Concrete (115 pcf)		
Slab Thickness (Inches)	10'-6	11'-0	11'-6	12'-0	12'-6	13'-0	13'-6	14'-0
4	167	151	137	124	113	103	94	86
4.5	204	184	167	152	138	126	116	106
5	243	220	199	181	165	151	138	127
5.5	284	256	232	211	193	176	162	149
6	326	295	267	243	222	203	186	171
6.5	369	333	303	275	251	230	211	194