

Composite Decks - Type 3.0CD

ASD

PROPERTIES

SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F _y (ksi)	Coverage (in.)	Thickness (in.)	Weight (psf)	A _s (in. ² /ft.)	I _p (in. ⁴ /ft.)	I _n (in. ⁴ /ft.)	S _p (in. ³ /ft.)	S _n (in. ³ /ft.)	M _{n,p} /Ω (in.-lb./ft.)	M _{n,n} /Ω (in.-lb./ft.)	V _n /Ω (lb./ft.)	R _{be} /Ω (lb./ft.)	R _{bi} /Ω (lb./ft.)
22	40	36	0.0295	1.71	0.502	0.763	0.755	0.407	0.427	9746	10218	1534	336	677
20	40	36	0.0358	2.07	0.608	0.943	0.939	0.537	0.559	12866	13393	2413	482	967
18	40	36	0.0474	2.74	0.804	1.250	1.260	0.794	0.807	19010	19340	4220	811	1615
16	40	36	0.0598	3.45	1.014	1.576	1.588	1.012	1.019	24237	24416	5309	1245	2466

CONSTRUCTION SPANS AND COMPOSITE SLAB DESIGN

Total Slab Depth (in.)	Gage	Concrete Weight (psf)	Maximum Construction Clear Span (ft. - in.)			Allowable Superimposed Uniform Load (psf)															Concrete Volume ft. ³ /ft. ²		
			Single	Double	Triple	Clear Span (ft. - in.)																	
						7 - 0	7 - 6	8 - 0	8 - 6	9 - 0	9 - 6	10 - 0	10 - 6	11 - 0	11 - 6	12 - 0	12 - 6	13 - 0	13 - 6	14 - 0			
5	22	32	10 - 1	10 - 0	11 - 5	324	278	240	209	183	160	141	125	111	99	88	78	70	62	56	0.292		
	20	32	12 - 0	12 - 9	13 - 2	390	336	291	254	223	196	174	154	138	123	110	99	89	80	72		0.333	
	18	32	13 - 8	15 - 4	15 - 10	400	400	380	333	293	260	231	206	185	166	150	135	122	111	101			0.375
	16	32	14 - 5	17 - 1	16 - 11	400	400	400	400	365	324	289	259	233	210	190	170	151	135	121			
5 1/2	22	37	9 - 8	9 - 3	10 - 6	378	324	281	244	214	188	166	147	130	116	103	92	82	74	66	0.458		
	20	37	11 - 6	12 - 3	12 - 8	400	392	340	297	260	230	203	181	161	144	129	116	105	94	85		0.500	
	18	37	13 - 3	14 - 8	15 - 2	400	400	400	389	343	304	270	241	216	195	176	159	144	130	119			0.500
	16	37	14 - 0	16 - 5	16 - 5	400	400	400	400	379	338	303	272	246	222	202	184	167	153	0.500			
6	22	41	8 - 7	8 - 7	9 - 9	400	374	324	282	247	217	192	170	151	134	120	107	96	86		77		
	20	41	11 - 0	11 - 9	12 - 2	400	400	392	342	301	265	235	209	187	167	150	135	121	110		99	0.500	
	18	41	12 - 11	14 - 2	14 - 8	400	400	400	400	396	351	312	279	250	225	203	184	167	151		138		0.500
	16	41	13 - 7	15 - 10	16 - 0	400	400	400	400	400	391	350	315	284	258	234	213	194	177	0.500			
6 1/2	22	46	7 - 9	8 - 0	9 - 1	400	400	369	321	281	248	219	194	173	154	137	123	110	99		88		
	20	46	10 - 7	11 - 4	11 - 9	400	400	400	390	343	303	269	239	214	191	172	155	139	126		114	0.500	
	18	46	12 - 7	13 - 8	14 - 2	400	400	400	400	400	357	319	286	258	233	211	191	174	158		143		0.500
	16	46	13 - 3	15 - 3	15 - 7	400	400	400	400	400	400	400	400	360	325	295	268	244	223	203	0.500		
7	22	50	7 - 1	7 - 6	8 - 6	400	400	400	362	317	279	247	219	195	174	156	139	125	112	100			
	20	50	10 - 2	10 - 8	11 - 4	400	400	400	400	387	342	303	270	241	216	194	175	158	143	129		0.500	
	18	50	12 - 3	13 - 3	13 - 8	400	400	400	400	400	400	400	360	324	291	263	239	217	197	179			0.500
	16	50	13 - 0	14 - 10	15 - 3	400	400	400	400	400	400	400	400	368	334	303	276	252	231	0.500			
7 1/2	22	55	6 - 6	7 - 0	8 - 0	400	400	400	400	354	312	276	245	218	195	174	156	140	126		113		
	20	55	9 - 10	10 - 0	11 - 0	400	400	400	400	400	381	339	302	270	242	218	196	177	160		145	0.500	
	18	55	12 - 0	12 - 10	13 - 3	400	400	400	400	400	400	400	400	362	326	295	267	243	221		201		0.500
	16	55	12 - 9	14 - 4	14 - 10	400	400	400	400	400	400	400	400	374	340	310	283	259	0.500				

- Notes:
- Section properties are calculated in accordance with the AISI Cold-Formed Steel Design Specifications, 2007 Edition.
 - Web crippling design strengths and maximum construction spans are based on 2.5" for end bearing and 5" for interior bearing. Check web crippling if minimums are not met.
 - Maximum construction spans are based on ANSI/SDI C-2011 Standard for Composite Steel Floor Deck and the following construction loading:
 - Deck self-weight and concrete weight plus worst-case of either a 150 lb. concentrated load or a 20 psf uniform load; or
 - Deck self-weight plus a 50 psf uniform construction load, whichever controls.
 - Welded wire fabric shown in the table below is the SDI minimum required for temperature and shrinkage (0.00075 x concrete area above top of deck).
 - Concrete weights do not include weight of deck.
 - Deck profile has been accounted for in determining concrete volumes. Deck and support deflections have not been included in concrete volumes or weights.
 - Allowable Superimposed Uniform Loads shown in table above are based on the following criteria:
 - Unfactored service level loads, determined using SDI design method per ANSI/SDI C-2011 Standard for Composite Steel Floor Deck-Slabs.
 - Single span conditions without negative bending reinforcing over supports.
 - The presence of shear studs have not been considered, design strength may be increased if shear studs are used.
 - Slab deflection is limited to minimum of Clear Span/360 or 1" under service level superimposed loading.

MINIMUM SDI SLAB REINFORCEMENT

Total Slab Depth (in.)	SDI Recommended Welded Wire Fabric	Wire Area (in. ² /ft.)
5	6x6 - W1.4xW1.4	0.028
5 1/2	6x6 - W1.4xW1.4	0.028
6	6x6 - W1.4xW1.4	0.028
6 1/2	6x6 - W2.0xW2.0	0.040
7	6x6 - W2.0xW2.0	0.040
7 1/2	4x4 - W1.4xW1.4	0.042