

# Composite Decks - Type 2.0CD

ASD

PROPERTIES

SECTION PROPERTIES

DESIGN STRENGTHS (No Concrete Fill)

Gage	F <sub>y</sub> (ksi)	Coverage (in.)	Thickness (in.)	Weight (psf)	A <sub>s</sub> (in. <sup>2</sup> /ft.)	I <sub>p</sub> (in. <sup>4</sup> /ft.)	I <sub>n</sub> (in. <sup>4</sup> /ft.)	S <sub>p</sub> (in. <sup>3</sup> /ft.)	S <sub>n</sub> (in. <sup>3</sup> /ft.)	Mn,p/Ω (in.-lb./ft.)	Mn,n/Ω (in.-lb./ft.)	Vn/Ω (lb./ft.)	Rbe/Ω (lb./ft.)	Rbi/Ω (lb./ft.)
22	40	36	0.0295	1.57	0.460	0.337	0.330	0.257	0.263	6152	6288	1638	321	617
20	40	36	0.0358	1.90	0.558	0.417	0.412	0.342	0.347	8186	8310	2182	459	882
18	40	36	0.0474	2.51	0.738	0.554	0.556	0.505	0.511	12105	12228	2879	769	1477
16	40	36	0.0598	3.17	0.931	0.698	0.702	0.650	0.653	15567	15647	3619	1176	2260

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. <sup>3</sup> /ft. <sup>2</sup>	
			Single	Double	Triple	Clear Span (ft. - in.)																
						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		
4	22	36	7 - 2	8 - 4	8 - 5	400	400	359	300	254	216	186	160	139	121	105	92	81	71	62	0.248	
	20	36	8 - 8	9 - 9	10 - 1	400	400	400	364	309	264	227	197	172	150	132	116	102	91	80		
	18	36	10 - 9	11 - 9	12 - 2	400	400	400	400	400	348	301	263	230	203	179	159	141	126	113		
	16	36	11 - 6	13 - 3	13 - 6	400	400	400	400	400	390	338	295	259	228	202	180	160	143	129		
4 1/2	22	42	6 - 10	7 - 9	8 - 0	400	400	400	363	307	262	225	194	169	147	128	112	99	86	76	0.289	
	20	42	8 - 2	9 - 3	9 - 7	400	400	400	400	374	320	276	239	209	183	161	142	125	111	98		
	18	42	10 - 3	11 - 2	11 - 7	400	400	400	400	400	400	366	319	280	246	218	194	172	154	138		
	16	42	11 - 0	12 - 7	13 - 0	400	400	400	400	400	400	400	359	315	278	247	220	196	175	157		
5	22	48	6 - 6	7 - 1	7 - 8	400	400	400	400	363	310	267	230	200	175	153	134	118	103	91	0.331	
	20	48	7 - 10	8 - 10	9 - 2	400	400	400	400	400	379	327	284	248	217	191	169	149	132	118		
	18	48	9 - 10	10 - 8	11 - 1	400	400	400	400	400	400	400	378	332	293	259	231	206	184	165		
	16	48	10 - 7	12 - 1	12 - 6	400	400	400	400	400	400	400	400	375	331	294	262	234	210	188		
5 1/2	22	54	6 - 1	6 - 6	7 - 4	400	400	400	400	400	360	310	268	233	203	178	156	138	121	107	0.373	
	20	54	7 - 6	8 - 6	8 - 9	400	400	400	400	400	400	380	330	288	253	223	197	174	155	138		
	18	54	9 - 5	10 - 3	10 - 7	400	400	400	400	400	400	400	400	386	341	302	269	240	215	193		
	16	54	10 - 2	11 - 7	12 - 0	400	400	400	400	400	400	400	400	400	386	343	306	273	245	221		
6	22	60	5 - 6	6 - 0	6 - 10	400	400	400	400	400	400	354	306	266	233	204	179	158	139	123	0.414	
	20	60	7 - 3	8 - 2	8 - 5	400	400	400	400	400	400	400	377	330	290	255	226	200	178	158		
	18	60	9 - 2	9 - 10	10 - 2	400	400	400	400	400	400	400	400	400	391	347	309	276	247	222		
	16	60	9 - 10	11 - 2	11 - 6	400	400	400	400	400	400	400	400	400	394	351	314	282	254			
6 1/2	22	66	5 - 0	5 - 6	6 - 3	400	400	400	400	400	400	399	345	301	263	231	203	179	158	140	0.456	
	20	66	7 - 0	7 - 10	8 - 1	400	400	400	400	400	400	400	400	400	372	327	289	255	227	202		180
	18	66	8 - 10	9 - 6	9 - 10	400	400	400	400	400	400	400	400	400	400	392	349	312	280	251		
	16	66	9 - 7	10 - 9	11 - 1	400	400	400	400	400	400	400	400	400	400	400	398	356	320	288		

- 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" for end bearing and 4" 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. <sup>2</sup> /ft.)
4	6x6 - W1.4xW1.4	0.028
4 1/2	6x6 - W1.4xW1.4	0.028
5	6x6 - W1.4xW1.4	0.028
5 1/2	6x6 - W2.0xW2.0	0.040
6	6x6 - W2.0xW2.0	0.040
6 1/2	6x6 - W2.0xW2.0	0.040