

# 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	27	7 - 9	8 - 11	9 - 2	400	400	350	294	250	214	184	160	140	122	108	95	84	74	66	0.248	
	20		9 - 5	10 - 3	10 - 8	400	400	400	353	301	258	223	195	170	150	132	117	104	93	83		
	18		11 - 7	12 - 5	12 - 10	400	400	400	400	390	336	292	255	224	196	168	145	126	111	97		
	16		12 - 3	14 - 0	14 - 4	400	400	400	400	400	374	325	285	251	218	187	161	140	123	108		
4 1/2	22	32	7 - 5	8 - 8	8 - 9	400	400	400	356	303	259	224	194	170	149	131	116	103	91	81	0.289	
	20		9 - 0	10 - 1	10 - 5	400	400	400	400	365	313	271	236	207	183	161	143	128	114	102		
	18		11 - 2	12 - 2	12 - 7	400	400	400	400	400	355	310	273	242	215	192	171	154	135			
	16		11 - 10	13 - 9	13 - 10	400	400	400	400	400	395	346	305	270	240	215	193	170	150			
5	22	36	7 - 1	8 - 4	8 - 5	400	400	400	400	358	307	266	231	202	177	156	138	123	109	97	0.331	
	20		8 - 7	9 - 8	10 - 0	400	400	400	400	400	372	322	281	246	217	192	171	152	136	122		
	18		10 - 9	11 - 8	12 - 1	400	400	400	400	400	400	400	369	325	288	256	228	205	184	166		
	16		11 - 5	13 - 2	13 - 5	400	400	400	400	400	400	400	400	363	322	287	257	230	207	187		
5 1/2	22	41	6 - 10	7 - 10	8 - 1	400	400	400	400	400	357	309	269	235	207	182	161	143	128	114	0.373	
	20		8 - 3	9 - 4	9 - 8	400	400	400	400	400	400	375	327	287	253	224	200	178	159	143		
	18		11 - 4	11 - 3	11 - 8	400	400	400	400	400	400	400	400	379	336	299	267	239	215	194		
	16		11 - 1	12 - 9	13 - 1	400	400	400	400	400	400	400	400	400	377	336	300	270	243	220		
6	22	46	6 - 8	7 - 4	7 - 10	400	400	400	400	400	400	353	308	269	237	209	185	165	147	131	0.414	
	20		8 - 0	9 - 0	9 - 4	400	400	400	400	400	400	400	400	375	329	291	258	229	205	183		164
	18		10 - 0	10 - 11	11 - 3	400	400	400	400	400	400	400	400	400	386	343	307	275	248	224		
	16		10 - 9	12 - 3	12 - 8	400	400	400	400	400	400	400	400	400	400	386	346	311	280	253		
6 1/2	22	50	6 - 5	6 - 10	7 - 7	400	400	400	400	400	400	399	347	304	268	237	210	187	166	149	0.456	
	20		7 - 9	8 - 8	9 - 0	400	400	400	400	400	400	400	400	400	372	329	292	260	232	208		187
	18		9 - 8	10 - 6	10 - 11	400	400	400	400	400	400	400	400	400	400	400	389	348	312	281		254
	16		10 - 5	11 - 10	12 - 3	400	400	400	400	400	400	400	400	400	400	400	400	392	353	318		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