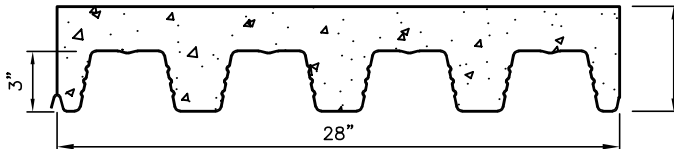




ICD-300 and ICD-301

Composite Floor Deck (LIGHTWEIGHT CONCRETE)

IMPERIAL



ICD-300



ICD-301

STEEL DECK SECTION PROPERTIES ($F_y = 33$ ksi) (per foot of width)						COMPOSITE SLAB DATA (110 pcf concrete) (per foot of width)													
Base Steel Thickness (in.)	Area of Steel (in ²)	Weight G90 (psf)	Section Modulus		Deflection Inertia (in ⁴)	Overall Slab Depth, h (in.)													
			Midspan (in ³)	Support (in ³)		5.0	5.5	6.0	6.5	7.0	7.5	8.0							
0.030	0.617	2.16	0.436	0.447	0.773	Slab Weight (psf)													
0.036	0.741	2.58	0.559	0.564	0.967	Concrete Volume (yd ³ /100ft ²)													
0.048	0.987	3.42	0.769	0.799	1.35	33.7	38.2	42.8	47.4	52.0	56.6	61.2	0.99	1.14	1.30	1.45	1.61	1.76	1.92

Base Steel Thickness (in.)	Overall Slab Depth (in.)	Maximum Unshored Deck Span (ft.-in.)			MAXIMUM ALLOWABLE UNIFORMLY DISTRIBUTED LOADS (psf)														
		1-SPAN	2-SPAN	3-SPAN	CLEAR SPAN (ft.-in.)														
					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"	12' 6"	13' 0"
0.030	5.0	9' 7"	10' 8"	11' 0"	336	283	241	206	179	155	136	120	106	94	83	74	66	59	53
	5.5	9' 1"	10' 2"	10' 6"	400	337	286	246	213	186	163	143	127	112	100	89	80	71	64
	6.0	8' 9"	9' 9"	10' 1"	400	394	336	289	250	218	191	168	149	132	118	105	94	84	76
	6.5	8' 5"	9' 5"	9' 8"	400	400	388	334	289	252	221	195	173	154	137	122	110	98	88
	7.0	8' 1"	9' 1"	9' 4"	400	400	400	380	330	288	253	223	198	176	157	140	126	113	102
	7.5	7' 10"	8' 9"	9' 1"	400	400	400	400	372	325	285	252	223	199	177	159	143	128	115
8.0	7' 7"	8' 6"	8' 9"	400	400	400	400	400	363	319	281	250	222	199	178	160	144	130	
0.036	5.0	11' 3"	11' 11"	12' 4"	396	334	284	245	212	185	163	143	127	113	101	90	81	73	65
	5.5	10' 8"	11' 5"	11' 9"	400	397	339	292	253	221	194	171	152	135	121	108	97	87	79
	6.0	10' 2"	10' 11"	11' 4"	400	400	398	342	297	260	228	202	179	160	143	128	115	103	93
	6.5	9' 9"	10' 6"	10' 10"	400	400	400	396	344	301	264	234	208	185	166	149	134	121	109
	7.0	9' 5"	10' 2"	10' 6"	400	400	400	400	393	343	302	267	238	212	190	171	154	139	125
	7.5	9' 1"	9' 10"	10' 2"	400	400	400	400	400	388	341	302	269	240	215	193	174	157	142
8.0	8' 10"	9' 6"	9' 10"	400	400	400	400	400	400	382	338	301	269	241	216	195	176	160	
0.048	5.0	13' 7"	14' 1"	14' 7"	400	400	367	317	275	241	212	188	167	150	134	121	109	98	89
	5.5	12' 11"	13' 6"	13' 11"	400	400	400	377	328	287	253	225	200	179	160	144	130	118	107
	6.0	12' 4"	12' 11"	13' 5"	400	400	400	400	386	338	298	264	235	211	189	170	154	139	126
	6.5	11' 10"	12' 6"	12' 11"	400	400	400	400	400	392	346	307	273	245	220	198	179	162	147
	7.0	11' 4"	12' 0"	12' 5"	400	400	400	400	400	400	396	351	313	280	252	227	206	187	170
	7.5	10' 11"	11' 8"	12' 0"	400	400	400	400	400	400	400	397	354	318	286	258	233	212	193
8.0	10' 7"	11' 3"	11' 8"	400	400	400	400	400	400	400	400	397	356	320	289	262	238	217	

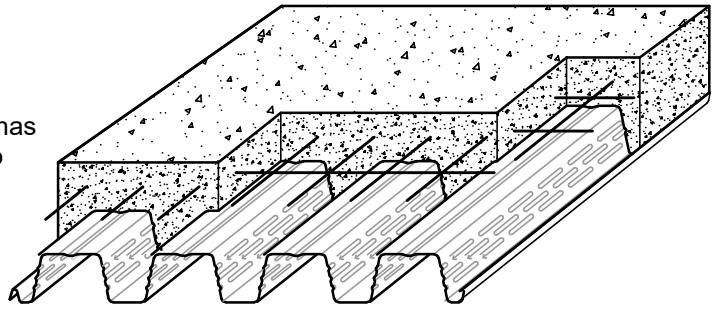
NOTES:

1. The self-weight of the steel deck and concrete slab have already been accounted for in the composite slab load table.
2. Web crippling check for shoring is required if end bearing length is less than **3 in.** or interior bearing length is less than **6.0 in.**
3. See Example for use of table.

TECHNICAL NOTES

Material Properties

1. The IDEAL ROOFING composite steel deck has embossments rolled into the web elements to achieve the composite interlocking capacity between the steel deck and concrete.
2. Steel conforms to ASTM A653 SS Grade 33 and the surface coating complies with either G60 or G90.
3. Steel deck section properties were calculated in accordance with AISI S100-16.
4. Light weight concrete is based on 110 pcf and a minimum compressive concrete strength of 3 ksi is used.



Load Tables

1. Loads are allowable uniformly distributed resulting from human occupancy. Load and Resistance Factor Design (LRFD) principles were used in the establishment of the load tables in accordance with SDI SD-2022.
2. Loads greater than **200 psf** are commonly the result of large concentrated dynamic loads. In such cases, contact IDEAL ROOFING for additional design information.
3. The steel deck provides the positive reinforcement for the simply supported composite slab and no additional reinforcing steel is required. To control shrinkage and temperature cracking, a minimum steel wire mesh of 6 x 6 - 10/10 is recommended.
4. Shoring requirements were established in accordance with SDI SD-2022.
 - a) Minimum end bearing length = 3 in.
 - b) Minimum interior bearing length = 6 in.
5. To establish the composite slab strength, the Pre-qualified Section Method given in Section F3.2.1 of SDI SD-2022 was used. The composite live load slab deflection limit was L/360.
6. All technical information and load tables were prepared by Dr. R.M. Schuster, Distinguished Professor Emeritus of Structural Engineering, University of Waterloo, Ontario, Canada.

EXAMPLE (Use of Load Table)

Determine the allowable uniformly distributed live load that can be placed on the 3" IDEAL ROOFING composite floor slab, given the following information:

Given: 3" Composite Floor Slab

- Base steel deck thickness = 0.036 in.
- Yield stress = 33 ksi
- Normal weight concrete = 110 lb/ft³
- Overall slab depth = 6 in.
- 2-span slab, each = 12.5 ft
- Nominal superimposed dead load, DL = 35 psf

Solution:

The allowable load in (psf) from the load table must be $\geq [LL + (1.20/1.60)DL] = [LL + 0.75(DL)]$

where

LL = nominal live load

DL = nominal superimposed dead load

From the load table, the allowable load is

103 psf, therefore,

$108 \geq [LL + 0.75(35)]$ and solving for LL,

LL = 108 - 0.75(35) = 76.8 psf

Since the maximum unshored 2-SPAN deck is **10'-11"**, **one** shore support is required at mid-span in each span.

Note:

The self-weight of the steel deck and concrete slab have been accounted for in the allowable uniformly distributed loads given in the composite slab load tables.



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