

# 3.0" Cellular Composite Floor Deck Specification Sheet

# **Features and Benefits**



Long Spans are possible with cellular composite floor deck because

of the strength the bottom plate adds to the deck. Flat ceilings offer an architectural design element offering a smooth, flat appearance.

**Prompt Lead Times** are our specialty. All orders are promptly produced and shipped to meet your on-site specifications.

**Project Management And Engineering Services** are offered by Cordeck's full, expert, in-house engineering and detailing services to assure optimal planing and design. Our experienced engineers and technicians provide individual customer service and attention to detail from *concept to completion*.

**SDI** Membership by the manufacturer guarantees product quality in accordance to the Steel Deck Institute (SDI).

**AutoCAD**<sup>®</sup> **Drawings** can be transferred electronically for improved quality and reduced time and cost of drawing transmittal.

Bundle Placement Plans are provided to ensure correct location of bundles during unloading and hoisting.

**On-Spec, Guaranteed Quality.** Our production staff are true craftsmen and take pride in completing each job to perfection.

**Knowledgeable, Courteous, Caring Employees Throughout Our Ranks.** We're a family business, no "big corporate" attitude here! We genuinely appreciate our customers' patronage and treat each order, regardless of size, with the utmost care and attention.

### CORDECK IS YOUR NATIONWIDE METAL DECK SUPPLY COMPANY

<b>ROOF DECK</b>	FORM DECK	CELLULAR ROOF DECK
<b>COMPOSITE FLOOR DECK</b>	CELLULAR COMPOSITE FLOOR DECK	METAL DECK ACCESSORIES

## 3.0" Cellular Composite Floor Deck



Section r roperties										
	3.0" Cellular Floor Deck Section Properties (per foot of width)									
Gage	Design Thickness in	Fy ksi	Sp in^3	Sn in^3	lp in^4	In in^4	As in^2	Wd psf	Rb Ib	
20 - 20	0.0359 / 0.0359	50	0.588	0.669	1.095	1.114	1.04	3.6	1175	
18 - 20	0.0478 / 0.0359	40	1.042	0.965	1.735	1.507	1.24	4.2	2603	
18 - 18	0.0478 / 0.0478	40	0.879	0.916	1.691	1.562	1.42	4.8	2603	

1.246

1.148

2.076

2.136

2.066

2.218

1.58

1.76

5.4

6.0

3884

3884

1.248

1.161

ΦVn

7430

7430

### Normal Weight Concrete

	3.0" Cellular Floor Deck 145 psf Normal Weight Concrete																				
Total Depth	n Maximum Unshored			nored		Comp	osito Pror	ortios		Superimposed Live Loads - PSF: No Studs											
Slab Depth	Gana	C	Clear Span	IS	Composite Properties																
Wt. Conc.	Oaye	Single Double Triple		lavg	Sc	♦Mnf	$\oplus$ Mn0	∜Vnt	Span - Feet and Inches												
Area Conc.		Span	Span	Span	in^4	in^3	kip-ft	kip-ft	kips	7' - 0"	7' - 6"	8' - 0"	8' - 6"	9' - 0"	9' - 6"	10' - 0"	10' - 6"	11' - 0"	11' - 6"	12' - 0"	12' - 6"
	20 - 20	10' - 9"	13' - 8"	14' - 0"	14.56	2.91	155.2	123.7	6.93	400	400	400	400	387	351	319	291	266	244	224	206
5 - 1/2"	18 - 20	13' - 1"	14' - 9"	15' - 3"	14.45	3.13	140.6	106.5	6.93	400	400	400	363	327	296	269	245	223	204	187	172
48.3 psf	18 - 18	11' - 11"	14' - 4"	14' - 10"	16.22	3.75	162.5	127.4	6.93	400	400	400	400	399	362	329	300	274	251	231	213
37.2 m²	16 - 18	13' - 11"	16' - 8"	16' - 4"	15.83	3.82	162.5	127.4	6.93	400	400	400	400	399	362	329	300	274	251	231	213
	16 - 16	13' - 9"	16' - 1"	16' - 5"	18.50	4.78	193.6	162.5	6.93	400	400	400	400	400	400	400	393	360	331	305	281
	20 - 20	10' - 3"	13' - 1"	13' - 7"	18.45	3.33	177.3	141.5	7.73	400	400	400	400	400	400	366	334	305	280	257	237
6"	18 - 20	12' - 5"	14' - 1"	14' - 7"	18.35	3.59	161.5	122.1	7.73	400	400	400	400	377	341	310	282	257	235	216	198
54.3 psf	18 - 18	11' - 4"	13' - 9"	14' - 2"	20.55	4.29	186.1	145.8	7.73	400	400	400	400	400	400	377	344	315	289	266	245
41.5 in <sup>-</sup>	16 - 18	13' - 7"	16' - 0"	15' - 11"	20.12	4.40	186.1	145.8	7.73	400	400	400	400	400	400	377	344	315	289	266	245
	16 - 16	13' - 1"	15' - 5"	15' - 11"	23.33	5.44	223.2	185.1	7.73	400	400	400	400	400	400	400	400	400	378	348	322
	20 - 20	9' - 10"	12' - 7"	13' - 0"	22.93	3.76	199.4	159.7	8.56	400	400	400	400	400	400	400	378	346	317	292	269
6 - 1/2"	18 - 20	11' - 11"	13' - 7"	14' - 0"	22.89	4.07	182.4	138.5	8.56	400	400	400	400	400	388	352	321	293	268	246	226
60.4 psf	18 - 18	10' - 10"	13' - 2"	13' - 8"	25.55	4.85	209.7	164.8	8.56	400	400	400	400	400	400	400	391	357	328	301	278
46 in-	16 - 18	13' - 1"	15' - 4"	15' - 6"	25.11	5.00	209.7	164.8	8.56	400	400	400	400	400	400	400	391	357	328	301	278
	16 - 16	12' - 6"	14' - 10"	15' - 4"	28.91	6.13	252.8	208.5	8.56	400	400	400	400	400	400	400	400	400	400	393	363
	20 - 20	9' - 7"	12' - 2"	12 - 7"	28.06	4.20	221.5	178.4	9.14	400	400	400	400	400	400	400	400	387	355	327	301
7"	18 - 20	11' - 7"	13' - 1"	13' - 6"	28.11	4.57	203.3	155.3	9.42	400	400	400	400	400	400	396	361	330	302	277	255
66.4 psf	18 - 18	10' - 6"	12' - 9"	13'- 2"	31.27	5.42	233.3	184.3	9.42	400	400	400	400	400	400	400	400	400	368	338	312
50.6 IN-	16 - 18	12' - 9"	14' - 10"	15' - 2"	30.85	5.62	233.3	184.3	9.42	400	400	400	400	400	400	400	400	400	368	338	312
	16 - 16	12' - 2"	14' - 3"	14' - 9"	35.27	6.84	282.4	232.5	9.42	400	400	400	400	400	400	400	400	400	400	400	400
	20 - 20	9' - 4"	11' - 9"	12' - 1"	33.88	4.65	243.6	197.4	9.58	400	400	400	400	400	400	400	400	400	394	363	334
7 - 1/2"	18 - 20	11' - 3"	12' - 8"	13' - 1"	34.06	5.08	224.2	172.5	10.31	400	400	400	400	400	400	400	400	368	337	309	284
72.5 psf	18 - 18	10' - 3"	12' - 4"	12' - 8"	37.75	6.01	257.0	204.2	10.31	400	400	400	400	400	400	400	400	400	400	376	347
55.4 IN*	16 - 18	12' - 5"	14' - 4"	14' - 10"	37.40	6.26	257.0	204.2	10.31	400	400	400	400	400	400	400	400	400	400	376	347
	16 - 16	11' - 10"	13' - 10"	14' - 3"	42.46	7.56	311.9	257.1	10.31	400	400	400	400	400	400	400	400	400	400	400	400

Section Droparties

0.0598 / 0.0478

0.0598 / 0.0598

16 - 18

16 - 16

40

40

### **Product Information Design**

Cordeck certifies that our 3.0" Cellular Composite Floor Deck has been evaluated in accordance with the applicable SDI Standards and property values for the Uniform Load Tables, and meets or exceeds SDI requirements.

Load shown in tables are uniformly distributed total (dead plus live) load in psf (kPa). All loads are governed by the allowable flexural stress limit of 20 ksi (140 Mpa) maximum yield steel. Where heavy construction loads or other unusual concentrated loads are anticipated during the lifetime of the deck, the specified live load must be increased to offset the effects of the abnormal concentrated load. See Maximum Spans for Construction and Maintenance Loads in the SDI Design Manual. The rib width limitations shown are taken at the theoretical intersection points of the flange and web projections. Depending on the radius used, the load table could very from what is shown.

Span length assumes center to center spacing of supports. Tabulated loads shall not be increased by assuming clear span dimensions.

The sectional properties for Cordeck's 3.0" Cellular Composite Floor Deck have been evaluated with the latest edition of the American Iron and Steel Institute (AISI) Specification for the design of Cold-Formed Steel Structural Members.

## 3.0" Cellular Composite Floor Deck

### Light Weight Concrete

	3.0" Cellular Floor Deck 115 psf Light Weight Concrete																				
Total Depth		Maxir	mum Unsh	nored	Composite Proportion					Superimposed Live Loads - PSE: No Studs											
Slab Depth	Gago	C	Clear Span	ns	Composite Properties				Superiniposeu Live Loaus - FSF. No Studs												
Wt. Conc.	Gaye	Single	Double	Triple	lavg	Sc	ФMnf	⊕Mn0	ΦVnt	Span - Feet and Inches											
Area Conc.		Span	Span	Span	in^4	in^3	kip-ft	kip-ft	kips	7' -0"	7' -6"	8' -0"	8' -6"	9' -0"	9' -6"	10' -0"	10' -6"	11' -0"	11' -6"	12' -0"	12' -6"
	20 - 20	11' - 10"	14' - 10"	14' - 10"	11.79	2.79	155.2	118.4	6.93	400	400	400	400	376	342	311	284	261	239	220	203
5 -1/2"	18 - 20	14' - 1"	15' - 11"	16' - 6"	11.84	2.99	140.6	101.6	6.93	400	400	392	352	318	288	262	239	219	200	184	170
38.3 psf	18 - 18	13' - 1"	15' - 6"	16' - 0"	13.23	3.57	162.5	121.3	6.93	400	400	400	400	386	350	319	291	267	245	226	208
37.2 in <sup>2</sup>	16 - 18	14' - 8"	18' - 0"	17' - 2"	13.01	3.63	162.5	121.3	6.93	400	400	400	400	386	350	319	291	267	245	226	208
	16 - 16	14' - 9"	17' - 4"	17' - 3"	17.86	6.44	193.6	218.8	6.93	400	400	400	400	400	400	400	400	400	400	400	400
	20 - 20	11'- 4"	14' - 3"	14' - 5"	14.94	3.19	177.3	135.6	7.73	400	400	400	400	400	392	357	327	299	275	253	234
6"	18 - 20	13' - 9"	15' - 4"	15' - 10"	15.01	3.43	161.5	116.7	7.73	400	400	400	400	366	332	302	276	252	231	213	196
43.1 psf	18 - 18	12' - 5"	14' - 11"	15' - 5"	16.76	4.09	186.1	139.1	7.73	400	400	400	400	400	400	367	335	307	282	260	240
41.5 in <sup>2</sup>	16 - 18	14' - 3"	17' - 4"	16' - 9"	16.50	4.18	186.1	139.1	7.73	400	400	400	400	400	400	367	335	307	282	260	240
	16 - 16	14' - 4"	16' - 8"	16' - 10"	19.11	5.19	223.2	176.5	7.73	400	400	400	400	400	400	400	400	398	367	338	313
	20 - 20	11' - 1"	14' - 0"	14' - 3"	16.70	3.40	188.4	144.5	8.14	400	400	400	400	400	400	381	349	319	294	270	250
6 - 1/4"	18 - 20	13' - 5"	15' - 1"	15' - 7"	16.78	3.66	171.9	124.5	8.14	400	400	400	400	391	355	323	295	270	247	227	209
45.5 psf	18 - 18	12' - 2"	14' - 7"	15' - 1"	18.73	4.36	197.9	148.2	8.14	400	400	400	400	400	400	391	358	328	301	277	256
43.7 in <sup>2</sup>	16 - 18	14' - 1"	17' - 0"	16' - 7"	18.46	4.47	197.9	148.2	8.14	400	400	400	400	400	400	391	358	328	301	277	256
	16 - 16	14' - 1"	16' - 5"	16' - 7"	21.32	5.52	238.0	187.6	8.14	400	400	400	400	400	400	400	400	400	390	360	333
	20 - 20	10' - 10"	13' - 9"	14' - 1"	18.59	3.61	199.4	153.5	8.56	400	400	400	400	400	400	400	371	340	312	288	266
6 - 1/2"	18 - 20	13' - 2"	14' - 9"	15' - 3"	18.70	3.90	182.4	132.5	8.56	400	400	400	400	400	378	344	314	288	264	243	223
47.9 psf	18 - 18	11' - 11"	14' - 4"	14' - 10"	20.85	4.63	209.7	157.5	8.56	400	400	400	400	400	400	400	381	349	321	295	273
46 in <sup>2</sup>	16 - 18	13'- 11"	16' - 9"	16' - 4"	20.58	4.76	209.7	157.5	8.56	400	400	400	400	400	400	400	381	349	321	295	273
	16 - 16	13' - 9"	16' - 1"	16' - 5"	23.69	5.85	252.8	199.0	8.56	400	400	400	400	400	400	400	400	400	400	383	354
	20 - 20	10' - 2"	13' - 1"	13' - 6"	25.04	4.26	232.6	181.0	9.36	400	400	400	400	400	400	400	400	400	370	341	315
7 - 1/4"	18 - 20	12' - 5"	14' - 1"	14' - 6"	25.29	4.62	213.7	157.2	9.36	400	400	400	400	400	400	400	375	343	315	290	267
55.1 psf	18 - 18	11' - 3"	13' - 8"	14' - 1"	28.09	5.48	245.2	186.2	9.36	400	400	400	400	400	400	400	400	400	381	351	324
53 in <sup>2</sup>	16 - 18	13' - 6"	15' - 11"	15' - 10"	27.87	5.67	245.2	186.2	9.36	400	400	400	400	400	400	400	400	400	381	351	324
	16 - 16	13' - 0"	15' - 4"	15' - 10"	31.78	6.89	297.1	234.2	9.36	400	400	400	400	400	400	400	400	400	400	400	400

### Moment / Deflection Spans

Bending moment formulas used for flexural stress and deflection limitations, in accordance with SDI, are:

Design	Moment	Deflection							
One Span	M = fS = $\frac{w - L^2}{8}$ - 12	D <sub>max</sub> = <u>0.0130 - w - L</u> <sup>4</sup> - 172 El							
Two Span	$M = fS = \frac{w - L^2}{8} - 12$	D <sub>max</sub> = <u>0.0054 - w - L</u> <sup>4</sup> - 1728 El							
Three Span	$M = fS = \frac{W - L^2}{10} - 12$	D <sub>max</sub> = <u>0.0069 - w - L</u> <sup>4</sup> - 1728 El							
W = psf (kPa) L = ft. (MPa) E = 29.5 x 10^6 psi (210,000 MPa) I = in^4/ft. (mm^4/m)									

### Material

All steel used to manufacture Cordeck's 3.0" Cellular Composite Floor Deck will be galvanized, prime painted, or a combination of the two.

#### Galvanized

1. All G-60 or G-90 shall be produced to ASTM A653 standards.

2. All steel shall be coated to conform to ASTM A924 G-60 or G-90 or to Federal Specifications QQ-S-775.

3. Galvanized finish in G-60 or G-90 coating is desirable in high moisture atmospheric conditions.

4. Cordeck shall not be responsible for the cleaning of the underside of the steel deck to ensure bond of fireproofing. Adherence of fireproofing material is dependent on many variables. The adhesion ability of fireproofing materials is the responsibility of the fireproofing applicator.

#### **Prime Painted**

All steel shall be galvanized and produced to ASTM AG53 standards.

2. Floor deck shall receive one coat of standard zinc infused primer paint over cleaned and pretreated steel.

3. The primer coat is intended to protect the steel for only a reasonably short period of exposure, in normal, atmospheric conditions, and shall be considered an impermanent and provisional coating.

4. Field painting of prime painted material is recommended especially where the deck is exposed.

#### Accessories

1. Cordeck can supply metal deck accessories necessary to complete your project.

# 3.0" Cellular Composite Floor Deck

### SDI Member

1. All steel deck material is manufactured by Steel Deck Institute members or manufactured in accordance to SDI.

2. Cordeck certifies that all material will be in accordance with the SDI Cellular Deck Manual specifications.

3. Cordeck's 3.0" Cellular Composite Floor Deck conforms to all applicable SDI Cellular Deck Manual specifications.

### Installation

1. Cordeck's Metal Floor Deck shall be installed by qualified and experienced workers.

2. Metal Floor Deck installation drawings shall be submitted to the project architect and engineer for approval prior to the manufacture of materials.

3. Metal Floor Deck shall be placed in accordance with approved erection drawings.

4. End laps shall be a nominal 2" and positioned over supports.

5. Position each deck unit on a supporting structural frame. Adjust to final position with accurately aligned side laps and end bearings on supporting members. On joist framing, be sure the appropriate end laps occur over a top chord angle for proper anchorage.

6. When one row is placed end to end begin another making alignment adjustments if necessary.

7. Each deck unit shall be placed on supporting steel framework and adjusted to final positions before permanently fastened. Do not use unfastened deck as a working platform or storage area.

8. Cutting the openings through the deck and all skew cutting shall be performed in the field. Openings not shown on the erection drawings such as those required for stack, conduits, plumbing, vents, etc., shall be cut and reinforced if necessary, in accordance with SDI.

### Attachment

1. Metal Floor Deck sheets shall be attached as soon as possible after placement. All sheets placed shall be attached prior to the end of each work day. Arc welding is the most commonly used method for attaching Cordeck's Metal Floor Deck to structural supports. Welder shall immediately follow the placement crew.

### Attachment Cont.

2. All welds are to be made from the top of the deck down through the bottom flange of the ribs. Welds shall penetrate and attach all thicknesses of material to the structural supports.

3. Caution shall be exercised on the selection of the electrodes to provide positive attachment and to prevent high amperage blow holes.

4. Puddle welds shall be at least 5/8" in diameter or elongated puddle welds with an equal perimeter. Fillet welds, when used, shall be at least 1" long.

a. 3.0" Cellular Composite Floor Deck ends shall be welded to structural supports at 12" on center maximum and 18" on center maximum at intermediate supports or as indicated on erection drawings.

b. Various mechanical fastening systems other than welding are recognized as viable anchoring methods provided they are reviewed, approved, or specified by the project designer. These include, but are not limited to, power-activated or pneumatically driven fasteners and screws.

c. Sheet to sheet, side laps shall be fastened together at a maximum spacing of 36" on center and perimeter edges at maximum intervals of 12" on center or as indicated on erection drawing

Attachment must be determined by the designer as part of the overall building design process. Values given in this document are adequate, in most cases.

### Storage and Handling

1. Protect metal deck from corrosion, deformation, and other damage during storage, handling, and installation.

2. Deck not promptly erected shall be stored off the ground, with one end elevated to provide drainage. Bundles must be protected against condensation with a ventilated waterproof covering.

3. Bundles must be stacked so there is no danger of shifting or material damage. Bundles must be checked for tightness and re-tightened if necessary.

4. Deck bundles on the building frame must always be placed near a main supporting beam at the column or a wall. In no situation are the bundles to be placed on unbolted frames or unattached and unbridged joists. The structural frame must be properly braced to receive the bundles.





sales@cordeck.com 877-857-6400 cordeck.com