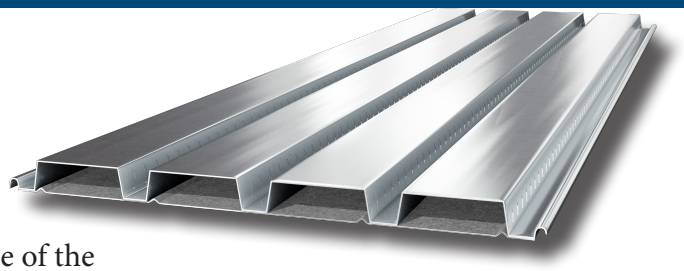
1.5” Cellular Composite Floor Deck Specification Sheet

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® 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

ROOF DECK	FORM DECK	CELLULAR ROOF DECK
COMPOSITE FLOOR DECK	CELLULAR COMPOSITE FLOOR DECK	METAL DECK ACCESSORIES

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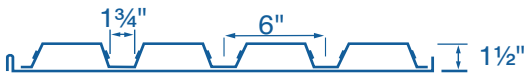
1.5” Cellular Composite Floor Deck



Section Properties

1.5" Cellular Floor Deck Section Properties (per foot of width)										
Gage	Design Thickness in	Fy ksi	Sp in^3	Sn in^3	Ip in^4	In in^4	As in^2	Wd psf	Rb lb	ΦVn lb
20 - 20	0.0359 / 0.0359	50	0.277	0.411	0.252	0.325	1.06	3.6	3166	3840
18 - 20	0.0478 / 0.0359	40	0.589	0.442	0.514	0.396	1.26	4.3	4600	5040
18 - 18	0.0478 / 0.0478	40	0.440	0.566	0.421	0.467	1.41	4.8	5314	5040
16 - 18	0.0598 / 0.0478	40	0.546	0.785	0.700	0.700	1.47	5.0	3887	4840
16 - 16	0.0598 / 0.0598	40	0.726	0.734	0.917	0.954	1.64	5.6	3887	4840

Normal Weight Concrete

1.5" Cellular Floor Deck 145 psf Normal Weight Concrete																							
Total Depth / Slab Depth / Wt. Conc. / Area Conc.	Gage	Maximum Unshored Clear Spans			Composite Properties					Superimposed Live Loads - PSF: No Studs													
										Span - Feet and Inches													
		Single Span	Double Span	Triple Span	Iavg in^4	Sc in^3	ΦMnf kip-ft	ΦMn0 kip-ft	ΦVnt 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"
4" 36.2 psf 23.8 in^2	20 - 20	7' - 8"	10' - 4"	10' - 0"	6.22	2.33	113.8	98.8	4.43	400	400	400	400	400	400	381	343	310	281	255	233
	18 - 20	10' - 3"	10' - 11"	11' - 3"	6.79	2.73	108.7	92.6	4.43	400	400	400	400	400	397	355	319	288	261	237	216
	18 - 18	8' - 10"	11' - 10"	11' - 8"	7.43	3.16	121.5	107.5	4.43	400	400	400	400	400	400	400	375	339	307	280	255
	16 - 18	10' - 0"	13' - 5"	13' - 2"	7.76	3.44	121.5	107.5	4.43	400	400	400	400	400	400	400	375	339	307	280	255
	16 - 16	10' - 0"	12' - 10"	12' - 1"	7.71	3.52	132.6	119.6	4.43	400	400	400	400	400	400	400	400	380	344	314	287
4 - 1/2" 43.2 psf 28.2 in^2	20 - 20	7' - 3"	9' - 9"	9' - 7"	8.61	2.77	136.1	117.9	5.25	400	400	400	400	400	400	400	400	371	336	306	279
	18 - 20	9' - 9"	10' - 5"	10' - 9"	9.36	3.24	129.9	110.1	5.25	400	400	400	400	400	400	400	380	343	311	283	258
	18 - 18	8' - 4"	11' - 3"	11' - 3"	10.22	3.75	145.5	127.5	5.25	400	400	400	400	400	400	400	400	400	366	333	304
	16 - 18	9' - 5"	12' - 9"	12' - 9"	10.66	4.08	145.5	127.5	5.25	400	400	400	400	400	400	400	400	400	366	333	304
	16 - 16	9' - 7"	12' - 5"	11' - 8"	10.71	4.23	162.5	143.9	5.25	400	400	400	400	400	400	400	400	400	400	379	347
5" 49.2 psf 33.0 in^2	20 - 20	6' - 11"	9' - 4"	9' - 2"	11.53	3.23	158.4	137.3	6.14	400	400	400	400	400	400	400	400	400	393	358	327
	18 - 20	9' - 5"	9' - 11"	10' - 3"	12.48	3.77	151.2	128.0	6.14	400	400	400	400	400	400	400	400	400	363	330	301
	18 - 18	7' - 11"	10' - 8"	10' - 10"	13.60	4.35	169.4	148.0	6.14	400	400	400	400	400	400	400	400	400	400	388	354
	16 - 18	8' - 11"	12' - 1"	12' - 3"	14.17	4.75	169.4	148.0	6.14	400	400	400	400	400	400	400	400	400	400	388	354
	16 - 16	9' - 3"	12' - 1"	11' - 4"	14.35	4.97	192.4	168.9	6.14	400	400	400	400	400	400	400	400	400	400	400	400
5 - 1/2" 55.3 psf 38.1 in^2	20 - 20	6' - 7"	8' - 11"	8' - 10"	15.01	3.70	180.7	157.1	7.10	400	400	400	400	400	400	400	400	400	400	400	375
	18 - 20	8' - 11"	9' - 6"	9' - 10"	16.21	4.30	172.4	146.3	7.10	400	400	400	400	400	400	400	400	400	400	379	346
	18 - 18	7' - 7"	10' - 3"	10' - 4"	17.62	4.97	193.4	168.9	7.10	400	400	400	400	400	400	400	400	400	400	400	400
	16 - 18	8' - 6"	11' - 7"	11' - 9"	18.36	5.42	193.4	168.9	7.10	400	400	400	400	400	400	400	400	400	400	400	400
	16 - 16	8' - 10"	11' - 9"	11' - 0"	18.70	5.72	222.3	194.4	7.10	400	400	400	400	400	400	400	400	400	400	400	400
6" 61.3 psf 43.6 in^2	20 - 20	6' - 4"	8' - 7"	8' - 7"	19.09	4.17	203.0	177.0	7.90	400	400	400	400	400	400	400	400	400	400	400	400
	18 - 20	8' - 7"	9' - 2"	9' - 5"	20.59	4.85	193.7	164.9	8.12	400	400	400	400	400	400	400	400	400	400	400	391
	18 - 18	7' - 3"	9' - 10"	9' - 11"	22.31	5.59	217.4	190.0	8.12	400	400	400	400	400	400	400	400	400	400	400	400
	16 - 18	8' - 2"	11' - 2"	11' - 3"	23.27	6.11	217.4	190.0	8.12	400	400	400	400	400	400	400	400	400	400	400	400
	16 - 16	8' - 6"	11' - 6"	10' - 8"	23.79	6.48	252.3	220.3	8.12	400	400	400	400	400	400	400	400	400	400	400	400

Product Information Design

Cordeck certifies that our 1.5” 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 1.5” 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.

1.5” Cellular Composite Floor Deck

Light Weight Concrete

1.5" Cellular Floor Deck 115 psf Light Weight Concrete																								
Total Depth / Slab Depth / Wt. Conc. / Area Conc.	Gage	Maximum Unshored Clear Spans			Composite Properties					Superimposed Live Loads - PSF: No Studs													
										Span - Feet and Inches													
		Single Span	Double Span	Triple Span	Iavg in^4	Sc in^3	ΦMnf kip-ft	ΦMn0 kip-ft	ΦVnt 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"
4" 29.5 psf 23.8 in^2	20 - 20	8' - 4"	11' - 2"	10' - 9"	5.16	2.22	113.8	94.1	4.43	400	400	400	400	400	400	367	331	299	272	248	226
	18 - 20	11' - 0"	11' - 9"	12' - 2"	5.67	2.60	108.7	88.3	4.43	400	400	400	400	400	382	342	308	279	253	230	210
	18 - 18	9' - 7"	12' - 10"	12' - 3"	6.17	3.01	121.5	102.2	4.43	400	400	400	400	400	400	400	361	326	296	270	247
	16 - 18	10' - 11"	14' - 7"	13' - 10"	6.47	3.27	121.5	102.2	4.43	400	400	400	400	400	400	400	361	326	296	270	247
	16 - 16	10' - 8"	13' - 6"	12' - 8"	6.37	3.31	132.6	112.5	4.43	400	400	400	400	400	400	400	399	361	328	299	273
4 - 1/4" 31.8 psf 26.0 in^2	20 - 20	7' - 11"	10' - 7"	10' - 3"	7.15	2.65	136.1	112.7	5.25	400	400	400	400	400	400	400	364	329	299	273	249
	18 - 20	10' - 6"	11' - 2"	11' - 7"	7.80	3.09	129.9	105.2	5.25	400	400	400	400	400	400	376	338	306	277	253	231
	18 - 18	9' - 1"	12' - 2"	11' - 10"	8.50	3.58	145.5	121.7	5.25	400	400	400	400	400	400	400	395	358	325	296	271
	16 - 18	10' - 4"	13' - 10"	13' - 5"	8.88	3.89	145.5	121.7	5.25	400	400	400	400	400	400	400	395	358	325	296	271
	16 - 16	10' - 3"	13' - 1"	12' - 3"	8.86	4.00	162.5	136.0	5.25	400	400	400	400	400	400	400	400	399	363	331	303
4 - 3/4" 36.6 psf 30.6 in^2	20 - 20	7' - 8"	10' - 4"	10' - 1"	8.31	2.88	147.2	122.2	5.69	400	400	400	400	400	400	400	400	391	355	323	296
	18 - 20	10' - 3"	11' - 0"	11' - 4"	9.04	3.35	140.5	113.8	5.69	400	400	400	400	400	400	400	400	361	328	299	273
	18 - 18	8' - 10"	11' - 11"	11' - 8"	9.84	3.87	157.5	131.7	5.69	400	400	400	400	400	400	400	400	400	384	350	320
	16 - 18	10' - 0"	13' - 6"	13' - 3"	10.27	4.21	157.5	131.7	5.69	400	400	400	400	400	400	400	400	400	384	350	320
	16 - 16	10' - 1"	12' - 10"	12' - 1"	10.30	4.35	177.5	148.0	5.69	400	400	400	400	400	400	400	400	400	400	396	363
5" 39 psf 33.0 in^2	20 - 20	7' - 6"	10' - 2"	9' - 10"	9.58	3.10	158.4	131.8	6.14	400	400	400	400	400	400	400	400	400	383	349	319
	18 - 20	10' - 1"	10' - 9"	11' - 1"	10.40	3.61	151.2	122.7	6.14	400	400	400	400	400	400	400	400	390	354	322	295
	18 - 18	8' - 8"	11' - 8"	11' - 6"	11.32	4.17	169.4	141.7	6.14	400	400	400	400	400	400	400	400	400	400	377	345
	16 - 18	9' - 10"	13' - 3"	13' - 0"	11.81	4.53	169.4	141.7	6.14	400	400	400	400	400	400	400	400	400	400	377	345
	16 - 16	9' - 10"	12' - 8"	11' - 11"	11.89	4.71	192.4	160.3	6.14	400	400	400	400	400	400	400	400	400	400	400	394
5 - 3/4" 46.2 psf 40.8 in^2	20 - 20	7' - 1"	9' - 6"	9' - 4"	14.08	3.79	191.8	161.0	7.60	400	400	400	400	400	400	400	400	400	400	400	392
	18 - 20	9' - 7"	10' - 2"	10' - 6"	15.24	4.40	183.0	149.6	7.60	400	400	400	400	400	400	400	400	400	400	395	361
	18 - 18	8' - 1"	10' - 11"	11' - 1"	16.54	5.07	205.4	172.5	7.60	400	400	400	400	400	400	400	400	400	400	400	400
	16 - 18	9' - 2"	12' - 5"	12' - 7"	17.25	5.53	205.4	172.5	7.60	400	400	400	400	400	400	400	400	400	400	400	400
	16 - 16	9' - 5"	12' - 3"	11' - 6"	17.54	5.82	237.3	197.8	7.60	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	$M = fS = \frac{w \cdot L^2}{8} \cdot 12$	$D_{max} = \frac{0.0130 \cdot w \cdot L^4}{EI} \cdot 172$
Two Span	$M = fS = \frac{w \cdot L^2}{8} \cdot 12$	$D_{max} = \frac{0.0054 \cdot w \cdot L^4}{EI} \cdot 1728$
Three Span	$M = fS = \frac{w \cdot L^2}{10} \cdot 12$	$D_{max} = \frac{0.0069 \cdot w \cdot L^4}{EI} \cdot 1728$
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 1.5” 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

1. 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.

1.5” 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 1.5” 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. 1.5” 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.

CORDECK® building solutions

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2022