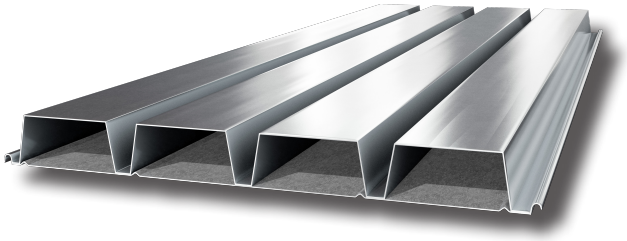
3.0” ‘N’ Cellular Roof Deck Specification Sheet

Features and Benefits



Long Spans are possible with cellular roof 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.

Acoustical Roof Deck is perforated to serve as a sound absorption element and structural roof deck. Typical applications for acoustical deck is in a gymnasium or pool facility. The perforation pattern is 5/32” diameter holes staggered 3/8’ on center. Structural properties are negligibly affected by web perforations in fluted deck or bottom plate perforations in cellular deck (less than 5%). The sound absorbing elements consist of strips of glass fiber that are inserted at the plant prior to delivery. Stand off clips are used to elevate the glass fiber off the deck surface.

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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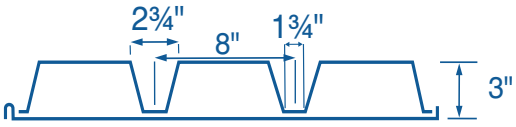
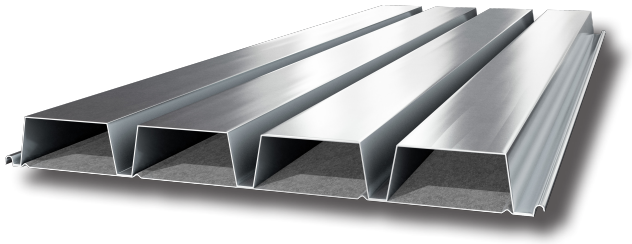
3.0” ‘N’ Cellular Roof Deck





Section Properties

3.0" Cellular Roof Deck Section Properties (per ft. 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	0.588	0.669	1.095	1.114	1.04	3.6	1175	4425
18 - 20	0.0478 / 0.0359	40	1.042	0.965	1.735	1.507	1.24	4.2	2603	5910
18 - 18	0.0478 / 0.0478	40	0.879	0.916	1.691	1.562	1.42	4.8	2603	5910
16 - 18	0.0598 / 0.0478	40	1.248	1.246	2.076	2.066	1.58	5.4	3884	7430
16 - 16	0.0598 / 0.0598	40	1.161	1.148	2.136	2.218	1.76	6.0	3884	7430

Allowable Uniform Load

3.0" Cellular Roof Deck Allowable Uniform Total Loads - psf															
Number of Spans	Gage	Span - Feet & Inches													
		8' - 0"	8' - 6"	9' - 0"	9' - 6"	10' - 0"	10' - 6"	11' - 0"	11' - 6"	12' - 0"	12' - 6"	13' - 0"	13' - 6"	14' - 0"	14' - 6"
1	20 / 20	114	101	90	81	73	66	60	55	49	45	41			
	18 / 20	177	156	140	125	113	103	93	85	79	72	67	62	58	54
	18 / 18	175	155	138	124	112	101	89	79	71	64	58	53	48	44
	16 / 18	251	222	198	178	160	145	133	121	111	103	95	87	79	72
	16 / 16	234	207	185	166	150	136	121	107	95	86	77	70	64	58
2	20 / 20	154	145	134	120	109	99	90	83	76	70	65	60	56	52
	18 / 20	188	167	149	134	121	110	100	92	84	78	72	67	62	58
	18 / 18	246	218	195	176	159	144	132	121	111	102	95	88	82	76
	16 / 18	261	232	207	186	168	153	139	128	117	108	100	93	87	81
	16 / 16	325	289	259	233	211	192	175	160	147	136	126	117	109	102
3	20 / 20	172	157	140	126	114	103	94	86	79	73	67	62	57	52
	18 / 20	233	207	185	167	151	137	125	114	105	97	90	83	77	72
	18 / 18	267	242	216	193	175	158	144	132	121	112	100	91	82	75
	16 / 18	323	287	257	231	209	190	173	159	146	135	125	116	108	101
	16 / 16	365	323	289	259	234	212	193	177	162	150	137	124	112	102

Sound Absorption Data

Sound Absorption Data								
Panel Profile	Absorption Coefficient							Glass Fiber Roof Insulation
	125 HZ	250 HZ	500 HZ	1,000 HZ	2,000 HZ	4,000 HZ	NRC	
3" Cellular - A	0.46	0.64	1.12	0.99	0.76	0.58	0.90	2"

Performance values are based upon tests conducted by Riverbank Acoustical Laboratories.

Acoustical tests conducted by Riverbank Acoustical Laboratories for the Steel Deck Institute with 3” EPS Plaza Deck Foam.

Roof Insulation found the NRC values to be .65 for 1-1/2” WR Deck and .70 for 3” DR Deck.

Product Information Design

Cordeck certifies that our 3.0” ‘N’ Cellular Roof 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.

3.0” ‘N’ Cellular Roof Deck

Product Information Design Cont.

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” ‘N’ Cellular Roof 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.

Moment / Deflection Spans

Bending moment formulas used for flexural stress and deflection limitations in accordance with Steel Deck Institute 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 3.0” ‘N’ Cellular Roof 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. Roof 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.

PROUDLY MADE IN THE USA
Since 1994

3.0” ‘N’ Cellular Roof 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” ‘N’ Cellular Roof Deck conforms to all applicable SDI Cellular Deck Manual specifications.

Installation

1. Cordeck’s Metal Roof Deck shall be installed by qualified and experienced workers.

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

3. Metal Roof 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 Roof 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 Roof 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” ‘N’ Cellular Roof 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. When spans exceed 5’-0”, side laps shall be fastened together at a maximum spacing of 36” on center.

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.

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2022