

DIVISION 26 - SECTION 260533

IN FLOOR CELLULAR RACEWAY SYSTEM

FOR ON-GRADE APPLICATION

N-R-G-FLOR+®

\*\* NOTE TO SPECIFIER \*\* Cordeck; Electrified floor deck products.
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This section is based on the products of Cordeck, which is located at:
12620 Wilmot Rd.
Kenosha, WI 53142
Toll Free Tel: 877-857-6400
Tel: 262-857-3000
Email: [request info (sales@cordeck.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=Cordeck&coid=41454&rep=&fax=&message=RE:%20Spec%20Question%20(05320cor):%20%20&mf=)
Web: [www.cordeck.com](http://www.cordeck.com)
 [ Click Here ] for additional information.
Cordeck's manufacturing lines include electrified deck, roof deck, floor deck, form deck and related accessories. You can be certain of our products total, maximum effectiveness, along with our ability to deliver the industry's highest quality, service, value and customer satisfaction. At Cordeck, we're devoted to our customers. We stand ready to earn, and keep, your full confidence and trust.
N-R-G FLORÆ and WalkerdeckÆ are the ideal wire management solution models for structural steel building construction. These systems integrate the structural steel framework with the building's necessary wire and cable distributions. The result is a dynamic system solution, harnessing building strength together with efficiency and flexibility in terms of existing, and future, electrical needs.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. CELLULAR RACEWAYS
		2. TAPMATE 6 PRESETS
		3. TAPWAY TRENCH HEADER
		4. TAPMATE 6 ACTIVATION ASSEMBLIES
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 053500 – Metal Decking
		2. Division 27 - Communication
		3. Division 28 – Electric Safety & Security
	1. REFERENCES\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.
		1. Underwriters Laboratories Inc. - UL 209, UL Standards of Safety for Cellular Metal Floor Raceway and Fittings.
		2. NEC - National Electrical Code.
	2. SUBMITTALS
		1. Submit under provisions of Section 01300.
		2. Product Data: Manufacturer's data sheets on each product to be used, including:
			1. Preparation instructions and recommendations.
			2. Storage and handling requirements and recommendations.
			3. Installation methods.
		3. Shop Drawings: Indicate deck plan, support locations, projections, openings and reinforcement, cellular raceways, trench header and outlet box locations, pertinent details, and accessories.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraphs if LEED is not applicable. LEED-NC credits available as follows: 1. Recycled steel used to manufacture the products (1 or 2 points) and 2. System is designed for cut to length at the factory, so little or no construction waste. (1 or 2 points).

* + 1. Welders Certificates: Certify welders employed on the Work, verifying AWS qualification within previous 12 months.
		2. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

* 1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Manufacturer shall have a minimum of five years documented experience with the type of electrified floor system specified in this section.
		2. Installer Qualifications: Installer shall have a minimum of five years documented experience with the installation of the type of electrified floor system specified in this section.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Store products in manufacturer's unopened packaging until ready for installation.
		2. Cut plastic wrap to encourage ventilation. Store raceway on dry wood sleepers; slope for positive drainage.
	3. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Cordeck, which is located at: 12620 Wilmot Rd. ; Kenosha, WI 53142; Toll Free Tel: 877-857-6400; Tel: 262-857-3000; Email: [request info (infloorsystems@cordeck.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=Cordeck&coid=41454&rep=&fax=&message=RE:%20Spec%20Question%20(05320cor):%20%20&mf=); Web: [www.cordeck.com](http://www.cordeck.com)

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01600.
	1. CELLULAR RACEWAY
		1. Cellular Raceway General:
			1. Steel shall conform to ASTM A 563 and shall have minimum yield of 40 KSI.
			2. Cellular deck shall be hot dipped galvanized in accordance with ASTM A 653, G60 minimum galvanized coating.
			3. Accessories for the cellular deck shall be hot dipped galvanized and shall conform to ASTM A 653.
			4. Galvanizing repair paint for the cellular deck system shall be high zinc dust content paint for repair of damaged galvanized surfaces, complying with Military Specification MIL-P-21035.

\*\* NOTE TO SPECIFIER \*\* Select one of the following deck unit paragraphs as required and delete the one not required.

* + 1. Cellular Raceway Units: Cordeck type: N-R-G-FLOR+, designated #QL-GKX-63-24, 3 inches (76 mm) deep by 24 inches (610 mm) wide, providing three separate wiring raceways of the following minimum areas: Power 5.6 square inches (3600 mm2); Data 16 square inches (10300 mm2); and Communication 16 square inches (10300 mm2).
		2. Design Thickness of Cellular Deck: As required to satisfy the project span loading criteria In no case shall the design thickness be less than the minimum established by UL Standard for safety number 209.
	1. PRESET INSERTS

\*\* NOTE TO SPECIFIER \*\* Select one of the following preset insert paragraphs as required and delete the one not required.

* + 1. Preset Inserts: Insert shall be snap-in-type Tapmate 6, Designated TM6 Series as manufactured by Cordeck.
			1. Preset inserts shall provide multiple service access and shall be UL Listed and Classified.
			2. Preset insert shall be constructed of 18 gauge (1.214 mm) minimum galvanized steel.
			3. Surface opening of the preset shall be a minimum of 4-1/4 inches by 6-1/4 inches (114 mm by 159 mm) and shall be sealed with a removable 22 gauge (0.759 mm) drawn steel cover to exclude concrete from the insert. Surface opening of the concrete, to allow access to activate the insert after the concrete has been poured, shall be a minimum 4-1/2 inches by 7-3/4 inches (114 mm by 197 mm).
			4. Access to low tension cells shall be provided through openings no less than 3.6 square inches (2323 mm2) with a snap-in grommet.
			5. Access to the power cell shall be through grommeted openings of 2.5 square inches (1613 mm2) (clear).
	1. TRENCH HEADER
		1. Trench Header: Shall be Tapway Trench Header System, UL Labeled, bottomless, full bottom or intermittent bottom trench header manufactured by CORDECK.

\*\* NOTE TO SPECIFIER \*\* Select one of the following openings paragraphs as required and delete the one not required.

* + 1. Openings: Provide N-R-G-FLOR+ Series with:
			1. Two, Four or Eight 1-1/2 inch by 7-inch (38 mm by 177 mm) ovals into communication cell raceway.
			2. One 3-inch (76 mm) diameter opening into power cell of three-cell raceway.
			3. Openings shall be factory cut. Nylon grommets shall be provided for all holes.
		2. Removable Covers: Conform to UL Standard 209 minimum thickness roller leveled steel. Retain covers in position by counter sunk stainless steel hold-down screws threaded into a continuously slotted side rail. Cover plates shall have overlapping joints and shall be fully gasketed.
			1. Removable Steel Cover Thickness are available in 1/4” (6.35 mm) OR 3/8” (9.525 mm)
		3. Cover Plates: Maximum of 3 feet (914 mm) in length.
		4. Side Rail: Continuously slotted side rail shall allow for interchangeable relocation of cover plates.
		5. Internal Leveling: Internal leveling screws shall be factory installed for concrete pre pour leveling.
		6. Internal Height Adjustment: Adjustment screws coupled with the removable side rail shall allow for a maximum of 3/4 inch (19.1 mm) internal height adjustment prior to the concrete pour.
		7. Side Rail Assembly: Consists of alignment key, factory installed adjustment screws, extruded top rail, vinyl trim and a nominal 14-gauge (1.9 mm) sheet metal angle. Side rail shall be rigidly supported by the adjoining concrete. Minimum width of the trench body shall be 1 inch (25.4 mm) less than the cover plate width.
		8. Coupling: Incorporated into the trench design using alignment keys to permit proper alignment of the trench units prior to fastening into position.
		9. Vinyl Trim: Vinyl trim shall be factory installed so that the exposed surface is flush with the cover plates. Optional vinyl tile trim is available that extends above the trench level to accommodate 1/8-inch (3.2 mm) vinyl tile floor finish.
		10. Compartment Dividers: Fully adjustable compartment dividers consist of factory installed adjustment screws, nominal 14-gauge (1.9 mm) sheet metal angle, extruded top rail with minimum 3/4 inch (19 mm) wide shelf at top covered with 7/8 inch (22.2 mm) wide factory installed vinyl gasket for longitudinal bearing of cover plate.
		11. Field Modification: Trench shall be fabricated to permit disassembly by removal of screws only. Disassembly shall allow for field modification of individual components and reassembly using the same components without welding.
		12. Fittings: Provide all tees, horizontal elbows, and x-unit fittings as required. When necessary, said fittings shall be provided with tunneling to maintain separation of services. Provide other fittings as required to conform to the layout drawings.
		13. Accessories: Provide trench raceway with the necessary accessories as required to make a complete installation. Accessories shall include but not be limited to:
			1. Coupling mechanisms.
			2. End closures.
			3. Void closures.
			4. Trench header egress fittings.
			5. Grommets.
			6. Cover plate lifting devices.
	1. PRESET OUTLET BOX ACTIVATION ASSEMBLIES
		1. Activation kits shall be the TAPMATE 6 Series as manufactured by CORDECK.
		2. Provide activation kits with UL Listed and Classified multiple service access.
		3. Activation kits shall be capable of flush or recessed mounting.
		4. Point of Use Activation kits shall provide for receptacle boxes and faceplates to accommodate duplex receptacles and communication device mounting brackets.
		5. Partition Feed Activation kits shall provide barrier brackets to separate power and communication wires through partition feed cover.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two optional activation kit paragraphs and delete the paragraph not required.

* + 1. Point of Use Center Power– One, two, three or four 15- or 20-amp duplex receptacles, plus one or two single or double duplex data plate shall be furnished.
			1. Cover assemblies shall be flush design KED-NAC Lexan or KED-MC die-cast aluminum.
			2. KED-NAC Lexan Cover Assembly shall consist of flange ring and separated cover with egress shield. This shield shall be designed to contain multiple grommeted individual ports to separate, shield and protect wires against crimping. Lexan cover assemblies shall be factory finished (multiple color selections are available).
			3. KED-MC Aluminum Cover Assembly – Shall consist of a flange ring and cover with wire egress ports. Covers shall be self-abandoning with aluminum blocks stored on the underside of the activation lid with Velcro tabs during activation. Aluminum assemblies shall be factory finished (multiple color selections are available).
		2. Point of Use Side Power – Two 15- or 20-amp duplex receptacles, plus one single or double duplex data plate shall be furnished.
			1. Cover assemblies shall be flush design KED-NAC Lexan or KED-MC die-cast aluminum.
			2. KED-NAC Lexan Cover Assembly shall consist of flange ring and separated cover with egress shield. This shield shall be designed to contain multiple grommeted individual ports to separate, shield and protect wires against crimping. Lexan cover assemblies shall be factory finished (multiple color selections are available).
			3. KED-MC Aluminum Cover Assembly – Shall consist of a flange ring and cover with wire egress ports. Covers shall be self-abandoning with aluminum blocks stored on the underside of the activation lid with Velcro tabs during activation. Aluminum assemblies shall be factory finished (multiple color selections are available).
		3. Partition Feed Center Power – Two power / data isolator plates to maintain separation of power from low voltage.
			1. Cover assemblies shall be flush design KEC-PC-5/6 Lexan or concealed KED-SC8 mill finish aluminum.
			2. KEC-PC-5/6 Lexan Cover Assembly - shall consist of a three-piece assembly with wire egress through field installed conduit openings. Lexan cover assemblies are available in a variety of factory colors.
			3. KED-SC8 Concealed Cover Assembly - shall consist of a three-piece assembly with wire egress through field installed conduit openings. The cover assembly shall be concealed by the carpet to blend aesthetically with surroundings; only the conduit fittings shall be exposed.
		4. Partition Feed Side Power – Four power / data isolator plates to maintain separation of power from low voltage.
			1. Cover assemblies shall be flush design KEC-PC-5/6 Lexan or concealed KED-SC8 mill finish aluminum.
			2. KEC-PC-5/6 Lexan Cover Assembly - shall consist of a three-piece assembly with wire egress through field installed conduit openings. Lexan cover assemblies are available in a variety of factory colors.
			3. KED-SC8 Concealed Cover Assembly - shall consist of a three-piece assembly with wire egress through field installed conduit openings. The cover assembly shall be concealed by the carpet to blend aesthetically with surroundings; only the conduit fittings shall be exposed
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly prepared.
		2. Verify building framing components are ready to receive work.
		3. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
	2. INSTALLATION
		1. Install in accordance with manufacturer's instructions.
		2. Comply with AWS D1.1 requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used in correcting weld work.
		3. Touch up welded surfaces with galvanized repair paint specified immediately after welding.
		4. Keep the interiors of cells that will be used as raceways free of welds having sharp points or edges.
		5. Construction Loading: Protect composite floor deck system from concentrated construction loading and traffic as required. Use planking as necessary to prevent profile damage to the cellular raceway, trench and presets. Profile damage is defined as indentations or bucking of webs and flanges resulting in the reduction of the sectional properties.
		6. Prepare surfaces to receive concrete as required.
			1. Seal System: Before concrete placement, make a final inspection of the entire cellular raceway system. Seal any gaps in the system to prevent concrete from entering.
			2. Clean surfaces of all dirt, debris, oil, or other foreign matter to ensue intended mechanical interlock between concrete and steel.
			3. Supports for screeds shall be located over permanent or temporary floor deck supports.
		7. Concrete Placement: Provide and place concrete in accordance with Section 03310. Conform to the ACI 318 Building Code.
	3. FIELD QUALITY CONTROL
		1. Provide cast-in-place concrete as indicated on the drawings and as specified under Section 03310. No concrete containing chlorides from any source shall be placed over or in contact with the floor deck system.
		2. Reinforced concrete shall be in accordance with American Concrete Institute Specifications for Structural Concrete Buildings (ACI 301-72) and ACI Building Code Requirements for Reinforced Concrete (ACI 318-83).
		3. Concrete placement shall follow proper and accepted industry practice and be in accordance with ACI Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete (ACI 304-73).
		4. Concrete must be vibrated at all headers and raceways to ensure that the concrete completely fills all voids. Care must be taken not to over vibrate. Over vibration will cause segregation of materials in the concrete mix, which in turn leads to weakening of concrete strength.
		5. Shrinkage and temperature reinforcement above the floor system shall be in accordance with (ACI 318-83). Care shall be taken during concrete placement and, in particular, during concrete vibration, to prevent rising of top reinforcement within the slab.
		6. Concrete shall be carefully hand finished to a minimum of 24 inches (610 mm) adjacent to trench header sides or header duct access openings so that the top of finished concrete and trench cover plates are flush.

PROTECTION

* + 1. Protect installed products until completion of project.
		2. Do not move or transport equipment or heavy traffic over system during construction period, without first installing ramps. Ramps shall be designed so that imposed loads are not transferred to system components.
		3. Components of the system, which are damaged during construction, shall be replaced before Substantial Completion.
		4. Touch-up, repair or replace damaged products.

END OF SECTION