

SECTION 10270 – RAISED ACCESS FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:

- 1. Raised access flooring panels, understructure and floor panel coverings.

- B. Related Sections include the following:

- 1. Division 16 Section "Grounding and Bonding" for connection to ground of access flooring understructure.
 - 2. Division 16 Section "Cable Trays" for coordination with understructure.
 - 3. Division 16 Section "Voice and Data Communication Cabling" for voice and data cabling for service outlets and for coordination with understructure pedestals.

- C. Quantity Allowances: Provide the following as specified in Division 1 Section "Allowances":

- 1. Cutouts in floor panels.

1.3 UNIT PRICES

- A. Unit Prices: The Contract Sum will be adjusted for changes in quantity from that indicated in allowances for cutouts in floor panels based on amounts stipulated in the Form of Agreement and complying with Division 1 Section "Unit Prices." Changes to quantities and to the Contract Sum will be made by Change Order.

1.4 DEFINITION

- A. ESD: Electrostatic discharge. The transfer of electric charge between bodies at different potentials.

1.5 SYSTEM DESCRIPTION

- A. Raised Access Flooring System: Assemblies composed of modular floor panels on pedestals without stringers.

1.6 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide access flooring systems capable of withstanding the following loads and stresses within limits and under conditions indicated, as determined by testing manufacturer's current standard products according to referenced procedures in CISCA A/F, "Recommended Test Procedures for Access Floors":
1. Concentrated Loads: Provide floor panels, including those with cutouts, capable of withstanding a concentrated design load of 1000 lbf (4448 N), with a top-surface deflection under load and a permanent set not to exceed, respectively, 0.10 and 0.010 inch (2.54 and 0.25 mm) according to CISCA A/F, Section I, "Concentrated Loads."
 2. Ultimate Loads: Provide access flooring systems capable of withstanding a minimum ultimate concentrated load of 2000 lbf (8896 N), without failing, according to CISCA A/F, Section II, "Ultimate Loading."
 3. Pedestal Axial Load Test: Provide pedestal assemblies, without panels or other supports in place, capable of withstanding a 5000 lbf (22 240 N) axial load per pedestal, according to CISCA A/F, Section V, "Pedestal Axial Load Test."
- B. ESD-Control Properties: Provide floor coverings with ESD-control properties indicated as determined by testing identical products per test method indicated by an independent testing and inspecting agency.
1. Antistatic Floor Covering Properties:
 - a. Electrical Resistance: Test per ESD STM 7.1.
 - 1) Average greater than 50,000 ohms and less than 1,000 megohm when test specimens and installed floor coverings are tested surface to surface (point to point).
 - b. Static Generation: Less than 100 V when tested per AATCC-134 at 40 percent relative humidity with conductive footwear.

1.7 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Include layout of access flooring system and relationship to adjoining Work based on field-verified dimensions.

1. Details and sections with descriptive notes indicating materials, finishes, fasteners, typical and special edge conditions, accessories, and understructure.
 2. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- C. Samples for Initial Selection: For each type of flooring material and exposed finish indicated.
- D. Samples for Verification: For each type of flooring material and exposed finish indicated.
1. One complete full-size floor panel and pedestal understructure unit for each type of access flooring system required.
- E. Product Certificates: For each type of access flooring system, signed by product manufacturer.
- F. Qualification Data: For Installer.
- G. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, or performed by access flooring manufacturer and witnessed by a qualified testing agency, for each type of flooring material and exposed finish.

1.8 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by manufacturer.
- B. Source Limitations: Obtain access flooring system through one source from a single manufacturer.
- C. Regulatory Requirements: Fabricate and install access flooring to comply with NFPA 75 requirements for raised flooring.
- D. Provide floor panels that are clearly and permanently marked on their underside with panel type and concentrated-load rating.
- E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."
1. Review connection with mechanical and electrical systems.
 2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

1.9 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install access flooring until spaces are enclosed, ambient temperature is between 40 and 90 deg F (4 and 32 deg C), and relative humidity is not more than 70 percent.

1.10 COORDINATION

- A. Coordinate location of mechanical and electrical work in underfloor cavity to prevent interference with access flooring pedestals.
- B. Mark pedestal locations on subfloor by use of a grid, with a module equal to width of five floor panels in both directions, to enable mechanical and electrical work to proceed without interfering with access flooring pedestals.
- C. Proceed with installation only after completion of other construction within affected spaces.

1.11 EXTRA MATERIALS

- A. Furnish extra materials described in subparagraphs below that match products installed and that are packaged with protective coverings for storage and identified with labels describing contents.
 - 1. Flooring Panels: 5
 - 2. Pedestals: 5
 - 3. Stringers: 5 (if applicable)

PART 2 - PRODUCTS

2.1 FLOOR PANELS AND UNDERSTRUCTURE

- A. Basis-of-Design Product: Subject to compliance with requirements, provide a raised access floor system or comparable product by the following:
 - 1. Bergvik North America, Inc., 212 West Main Street, Suite 202B, Salisbury, Maryland 21801 Phone: (410) 548-1449 Fax: (410) 548-2630
 - 2. Product: "Tech Floor", an engineered wood-core panel system with metal backside.
- B. Floor Panels, General: Provide modular panels complying with the following requirements that one person, using a portable lifting device, can interchange with other field panels without disturbing adjacent panels or understructure:

1. Nominal Panel Size: 600 by 600 mm.
 2. Fabrication Tolerances: Fabricate panels to the following tolerances with squareness tolerances expressed as the difference between diagonal measurements from corner to corner:
 - a. Size and Squareness: Plus or minus 0.015 inch (0.38 mm) of required size, with a squareness tolerance of plus or minus 0.015 inch (0.38 mm), unless tolerances are otherwise indicated for a specific panel type.
 - b. Flatness: Plus or minus 0.020 inch (0.50 mm), measured on a diagonal on top of panel.
 3. Panel Attachment to Understructure: By gravity.
- C. Wood-Core Panels with metal backside: Fabricate from 38 mm (1.5-inch) thick, E1 particleboard core, made with less than 10 ppm urea formaldehyde laminated to bottom aluminum face sheet with a direct laminate process using heat and pressure, and with a flame-spread index of 25 or less per ASTM E84. Provide tapered core edges including direct laminated surface finish of H817 Alder décor. All panel edges should be enclosed with 0.5 mm (0.02-inch) glued perimeter ABS edge trim. Edge trim to match surface finish and shall be applied so it covers the entire tapered panel edges.
- D. Pedestals: Assembly consisting of base, column with provisions for height adjustment, and head (cap); made of steel.
1. Base: Square or circular base with not less than 12.5 sq. in. (81 sq. cm) of bearing area.
 2. Column: Of height required to bring finished floor to elevations indicated. Weld to base plate.
 3. Provide vibration-proof leveling mechanism for making and holding fine adjustments in height over a range of not less than +/- 1 inches (25 mm) and for locking at a selected height, so deliberate action is required to change height setting and vibratory displacement is prevented.
 4. Head: Designed to support understructure system indicated.
 - a. Provide sound-deadening pads or gaskets at contact points between heads and panels.

2.2 FLOOR PANEL COVERINGS

- A. General: Provide factory-applied direct laminated laminate by raised access flooring manufacturer to top surface of floor panels.
- B. Standard Direct Laminate:

1. Manufactured from phenolic and melamine resin impregnated papers, using a high-wear type melamine overlay.
 - a. Wear resistant to >6000 cycles according to EN 438-2:6 1991.
 2. Fabricate to cover each panel face prior to applying edge trim.
 3. Colors and Decors: H817 Alder.
- C. Basis-of-Design Product: Subject to compliance with requirements, provide the product, or a comparable product by one of the following:
1. Coveright
 2. _____

2.3 ACCESSORIES

- A. Adhesives: Manufacturer's standard adhesive for bonding pedestal bases to subfloor.
- B. Cutouts: Provide cutouts in floor panels for cable penetrations and service outlets. Provide reinforcement or additional support, if needed, to make panels with cutouts comply with standard performance requirements.
1. Number, Size, Shape, and Location: Allow for a minimum of 40 circular penetrations in the floor of 2 inch (minimum) in diameter. Coordinate locations with console furniture and electrical drawings.
 2. Fit cutouts with manufacturer's standard grommets in sizes indicated or, if size of cutouts exceeds maximum grommet size available, trim edge of cutouts with manufacturer's standard plastic molding having tapered top flange. Furnish removable covers for grommets.
- C. Ramps: Manufacturer's standard ramp construction of width and slope indicated but not steeper than 1:12, with floor covering to match floor panel finish, and of same materials, performance, and construction requirements as access flooring.
1. Apply non-slip tape strips to ramp surface.
- D. Railings: Standard extruded-aluminum railings, at ramps and open-sided perimeter of access flooring where indicated. Include handrail, intermediate rails, posts, brackets, end caps, wall returns, wall and floor flanges, plates, and anchorages where required.
- E. Panel Lifting Device: Manufacturer's standard portable lifting device of type required for specified panels. Provide one lifting devices per room of each type required.

- F. Perimeter Support: Where indicated, provide manufacturer's standard method for supporting panel edges and forming transition between access flooring and adjoining floor coverings with floor covering to match floor panel finish at the same level as access.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer and manufacturer's representative present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
 - 1. Verify that substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, foreign deposits, and debris that might interfere with adhesive attachment of pedestals. Verify that concrete slab subfloor has been sealed.
 - 2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Lay out floor panel installation to keep the number of cut panels at floor perimeter to a minimum. Avoid using panels cut to less than 300 mm (11-7/8 inches).
- B. Locate each pedestal, complete any necessary subfloor preparation, and vacuum clean subfloor to remove dust, dirt, and construction debris before beginning installation.

3.3 INSTALLATION

- A. Install access flooring system and accessories under supervision of access flooring manufacturer's authorized representative to produce a rigid, firm installation that complies with performance requirements and is free of instability, rocking, rattles, and squeaks.
- B. Set pedestals in adhesive as recommended in writing by access flooring manufacturer to provide full bearing of pedestal base on subfloor.
- C. Adjust pedestals to permit top of installed panels to be set flat, level, and to proper height.
- D. Install flooring panels securely in place, properly seated with panel edges flush. Do not force panels into place.

- E. Scribe perimeter panels to provide a close fit with adjoining construction with no voids greater than 1/8 inch (3 mm) where panels abut vertical surfaces.
- F. Cut and trim access flooring and perform other dirt-or-debris-producing activities at a remote location or as required to prevent contamination of subfloor under access flooring already installed.
- G. Ground flooring system as recommended by manufacturer and as needed to comply with performance requirements for electrical resistance of floor coverings.
- H. Clean dust, dirt, and construction debris caused by floor installation, and vacuum subfloor area, as installation of floor panels proceeds.
- I. Install access flooring without change in elevation between adjacent panels and within the following tolerances:
 - 1. Plus or minus 1/16 inch (1.5 mm) in any 10-foot (3-m) distance.
 - 2. Plus or minus 1/8 inch (3 mm) from a level plane over entire access flooring area.

3.4 ADJUSTING, CLEANING, AND PROTECTION

- A. Prohibit traffic on access flooring for 24 hours and removal of floor panels for 72 hours after installation to allow pedestal adhesive to set.
- B. After completing installation, vacuum clean access flooring and cover with continuous sheets of reinforced paper or plastic. Maintain protective covering until time of Substantial Completion.
- C. Replace access flooring panels that are stained, scratched, or otherwise damaged or that do not comply with specified requirements.

END OF SECTION 10270