

ACCESS FLOOR SPECIFICATION
SECTION 10270

10270-1.1 GENERAL DESCRIPTION

A. General: The work covered by this section of the specifications includes the furnishing of all labor, supervision, materials (unless specified as owner-furnished), tools, equipment, appliances, and services necessary for the installation of an elevated floor system as specified herein. The access floor is a system which provides an underfloor clearance which can be used as a raceway for piping, conduit, communication cables, etc. It can also be used as a plenum for air conditioning.

B. Work included:

1.

C. Related work specified elsewhere:

1.

10270-1.2 QUALITY ASSURANCE

A. Acceptable manufacturer and product:

Computer Environments, Inc. of Dallas, Texas.
Model Number: 30GGS12-GR112-HPL12Z201B.

B. Substitutions:

Substitutions will be considered provided that they meet all performance, materials, and construction requirements as specified herein. Acceptance of substitutions is at the sole discretion of the architect. Any deviations from these specifications may result in rejection of the product.

C. Installer qualifications:

1. Approved by manufacturer of access floor materials and assemblies.
2. Provide list of at least three other complete access floor installations of equal scope to this project.

D. Requirements of regulatory agencies:

1. National Fire Protection Association (NFPA): Standard #75-83, "Electronic Computer Systems", paragraph 2500, "Raised Floors."
2. American Society of Testing Materials (ASTM) E 84-76a: "Test for Surface Burning Characteristics of Building Materials", equivalent to ANS #2.5, NFPA #255, UL #723, UBC #42-1, ASTM E-84-75.
 - a. Fuel contribution factor: Ten (10) or less.
 - b. Flame spread: Ten (10) or less.
 - c. Smoke density factor: Zero (0).

E. Design Criteria:

1. System Performance:
 - a. System shall resist a minimum ten (10) pound per square foot horizontal force (induced by move-in, equipment, carts, etc.), or the appropriate seismic load, whichever is greater.
 - b. System shall resist point rolling loads over the entire floor area of 600 pounds.

2. Panels:

- a. Concentrated load of 1,200 pounds on one square inch in center of floor panel surface, maximum deflection of 0.080 inches.
- b. Uniform live load of 300 psf, maximum deflection of 0.040 inches.
- c. Maximum permanent deflection of 0.010 inches at design loading.
- d. Maximum rolling load without edge support: 600 pounds.
- e. Ultimate load-carrying capacity: Not less than three times the uniform loading design strength
- f. Thermal conductivity: No greater than 1.2 Btu/hr ft² oF/in.
- g. Air leakage at 0.5" SWG between subfloor plenum and panel surface: No greater than 0.067 CFM/lin.ft.

3. Perforated air panels:

- a. Concentrated load of 800 pounds on one square inch in center of floor panel surface, maximum deflection of 0.080 inches.
- b. Uniform live load of 250 psf, maximum deflection of 0.040 inches.
- c. Maximum permanent deflection of 0.010 inches at design loading.
- d. Maximum rolling load without edge support: 400 pounds.
- e. Ultimate load-carrying capacity: Not less than three times the uniform loading design strength.

4. Pedestals: 10 000 lbs. axial loading.

5. Stringers: 90 lbs. applied at center of span with no more than 0.010" permanent set.

10270-1.3 SUBMITTALS

A. Product data: Submit manufacturer's technical data for each type of access flooring required.

B. Shop drawings: Submit shop drawings as required to show complete layout of access flooring, including dimensional relationships to adjoining work. Include details, with descriptive notes indicating materials, finishes, fasteners, typical and special edge conditions, accessories, understructure, and other data to permit a full evaluation of entire access flooring system.

C. Certificates: Furnish certificates from manufacturer of access flooring showing that products comply with specification requirements. (Not required if submitting specified floor system.)

D. Installation instructions: Furnish manufacturer's recommended installation instructions.

E. Documentation: Submit certified copies of test reports from an approved testing laboratory, attesting that the proposed floor system components meet the Quality Assurance requirements herein. (Not required if submitting specified floor system.)

F. Design Calculations: Submit design calculations which demonstrate that the proposed floor system meets the requirements for seismic and lateral loading. (Not required if submitting specified floor system.)

G. Warranty: Furnish sample copy of manufacturer's and installer's warranty to show complete compliance with warranty conditions and period as specified.

10270-1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials in manufacturer's original, unopened packaging.
- B. Storage: Store materials in original protective packaging to prevent soiling, physical damage, or wetting.
- C. Handling: Prevent soiling of floor panels during handling.

10270-2 PRODUCTS

10270-2.1 MATERIALS

A. Floor panels:

1. Laminated panel:

- a. Core: Resin fiber core CS236-66, equal to one inch in thickness.
- b. Top, bottom and edge surfacing: Galvanized steel not less than 22 gauge bonded to the core material using hot spray contact adhesive.
- c. Panel flatness: Within +/- 0.003.
- d. Panel tolerance: Within $-0.0015 + 0.000$ within the 24" x 24" dimensions.
- e. Panel squareness: The difference between panel diagonals shall not exceed 0.015.
- f. Panel trim edge is to be mechanically locked into panel to prevent any possibility of loss of trim edge. Top sheet of panel inserts into trim to prevent vertical movement. Overlapping bottom panel prevents lateral movement. Trim edge snapped or glued on is not acceptable.
- g. Core material to be completely encased in steel.

2. Perforated air panels:

- a. Perforated air panels shall be flush to match surrounding floor panels.
- b. Shall have 139 square inches of open area per panel via the use of 5/16" holes.
- c. Shall be made entirely of galvanized steel, except for covering material and trim edge.

3. Electrical resistance: No greater than one (1) ohm with covering material removed.

4. Size: 24" x 24" face dimensions.

5. Edging material: Extruded vinyl plastic, manufacturer's standard shape, black.

6. Floor covering material:

- a. Manufacturer's standard high pressure laminate to meet or exceed NEMA LD3-1985 standards.
- b. Surface electrical resistance (per NFPA 56) to be between $5.0E5$ and $2.0E10$ ohms.

- c. Size: Single piece, nominal 23 5/8" x 23 5/8" to fit panel.
- d. Thickness: Nominal 1/8".
- e. Color: To be selected from manufacturer's Standard Patterns.

B. Pedestals:

- 1. Steel tube: Not less than 7/8" square, threaded inner stud not less than 3/4" outside diameter.
- 2. Vertical adjustment of shaft: Not less than +/-1-1/2", with vibration-proof locking arrangement.
- 3. Base:
 - a. Material: Galvanized steel, 1/8" in thickness.
 - b. Size: Not less than 16 inches of effective bearing area.
 - c. Shall be prepunched for use of optional mechanical fasteners.
- 4. Head:
 - a. Die cut and punched head shaped to receive stringers.
 - b. Head to have tabs for panel alignment and to prevent panel from moving off of head when adjacent panels are removed.
- 5. Attachment: Manufacturer's standard adhesive.
- 6. Provide conductive PVC pad on pedestal cap to prevent metal to metal contact between panel and understructure.

C. Stringers:

- 1. Die blanked, punched and formed steel, not less than 17 gauge, hot dipped galvanized finish.
- 2. Rigid grid: Connecting edges formed for interlocking to pedestal cap.
- 3. Grid to be screwed to pedestal cap using a 6/32" x 1/2" FHPH self-tapping screw which is removable from the top with an ordinary screwdriver.

D. Accessories:

- 1. Panel lifters: One for each area, or a total of 2, manufacturer's standard appropriate for covering material used. Provide and install wall mounted lifter bracket for each lifter.
- 2. Ramps and Steps: Provide and install manufacturer's standard ramps and steps as shown on plans. Ramps and steps to comply with the same performance specifications as surrounding access flooring system.
- 3. Railing: Provide and install manufacturer's standard anodized aluminum railing as shown on plans. Railing to resist a horizontal force of 200 pounds applied at the top of the railing without visible permanent damage.
- 4. Perforated air panels: Provide air panels as shown on plans, or one per ton of air conditioning.

10270-3 EXECUTION

10270-3.1 INSPECTION

A. Building floor:

1. Examine floor slab for unevenness, irregularities, and dampness that would affect the quality and execution of the work.
2. Do not proceed with installation of pedestal floor system until structural floor surfaces are clean, dry and ready to receive access flooring pedestals.

B. Layout:

1. Measure the room to check for squareness. Set up string lines to ensure that the floor panels are installed within $+1/16"$ of true square.
2. Start full panels as indicated on approved shop drawings. If not indicated, begin the installation at the intersection of the two longest, least obstructed walls to ensure the most full, interchangeable panels possible.

10270-3.2 INSTALLATION

A. Pedestals:

1. Arrange pedestal assemblies to meet grid spacing required.
2. Bond pedestal base plates to structural floor with adhesives, sufficient to withstand a lateral force of 1 000 inch pounds.
3. Install additional pedestal assemblies where grid pattern is disturbed by columns, walls, ramps and steps and at cutouts that impair panel strength.
4. Level pedestal assemblies with laser or similar instrument, capable of accuracy within $\pm 1/8"$ over 150' diameter.

B. Floor panels:

1. Set panels in place with sides abutting, bearing uniformly on supports.
2. Cut panels to within $+.030"$ of columns, walls, and where other room conditions require.
3. Make cable cutouts in the field at time of raised flooring installation.

10270-3.3 ADJUST AND CLEAN

A. Debris: Remove all construction debris as work progresses, maintaining areas under finished panels in a clean condition.

B. Cleaning: Clean soiled or discolored surfaces installation.

10270-3.4 FINISHED FLOOR SYSTEM

A. To be free of rocking panels, squeaks, rattles or ridges between panels.

B. Panel lines will be straight with no visible cracks between panels.

C. All panels to be interchangeable with each other (except those which have been cut to fit around columns, walls, or other obstructions) such that the above requirements are met.

D. Panels which have been cut around columns or walls, will fit snugly such that no greater than a 0.030" gap exists between panel and abutted surface.

E. Floor shall be level within +/- 0.125" over the entire area and within +/- 0.063" in a 10' direction.

10270-3.5 GUARANTEE

The installing contractor shall guarantee against defective materials and workmanship for a period of one year from the date of installation.