

## SECTION 11 52 13 - PROJECTION SCREENS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Electrically operated projection screens and controls.
- B. Related Requirements:
  - 1. Section 05 50 00 "Metal Fabrications" for metal support framing for projection screens.
  - 2. Section 06 10 00 "Rough Carpentry" for wood backing for screen installation.

#### 1.2 DEFINITIONS

- A. Gain of Front-Projection Screens: Ratio of light reflected from screen material to that reflected perpendicularly from a magnesium carbonate surface as determined per SMPTE RP 94.
- B. Half-Gain Angle: The angle, measured from the axis of the screen surface to the most central position on a perpendicular plane through the horizontal centerline of the screen where the gain is half of the peak gain.

#### 1.3 COORDINATION

- A. Coordinate layout and installation of projection screens with adjacent construction, including ceiling suspension systems, light fixtures, HVAC equipment, fire-alarm systems, and partitions.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For projection screens. Show layouts and types of projection screens. Include the following:
  - 1. For electrically operated projection screens and controls:
    - a. Location of screen centerline relative to ends of screen case.
    - b. Location of wiring connections for electrically operated units.
    - c. Location of seams in viewing surfaces.
    - d. Drop lengths.
    - e. Anchorage details, including connection to supporting structure for suspended units.
    - f. Details of juncture of exposed surfaces with adjacent finishes.
    - g. Accessories
    - h. Wiring diagrams.

- C. Samples for Initial Selection: For finishes of surface-mounted screen cases.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For projection screens to include in maintenance manuals.

#### 1.6 QUALITY ASSURANCE

- A. Source Limitations for Projection Screens: Obtain projection screens from single manufacturer. Obtain accessories, including necessary mounting hardware, from screen manufacturer.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Environmental Limitations: Do not deliver or install projection screens until spaces are enclosed and weather-tight, wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
- B. Store rear-projection screens in manufacturer's protective packaging and according to manufacturer's written instructions.

### PART 2 - PRODUCTS

#### 2.1 ELECTRICALLY OPERATED PROJECTION SCREENS

- A. General: Manufacturer's standard units consisting of case, screen, motor, controls, mounting accessories, and other components necessary for a complete installation. Provide units that are listed and labeled as an assembly by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
  - 1. Controls: Remote, key-operated, three-position control switch installed in recessed device box with flush cover plate matching other electrical device cover plates in room where switch is installed.
    - a. Provide two control switches for each screen.
    - b. Provide power supply for low-voltage systems if required.
    - c. Provide key-operated, power-supply switch.
  - 2. End-Mounted Motor: Instant-reversing, gear-drive motor of size and capacity recommended by screen manufacturer; with permanently lubricated ball bearings, automatic thermal-overload protection, preset limit switches to automatically stop screen in up and down positions, and positive-stop action to prevent coasting. Locate motor in its own compartment on right end of screen unless otherwise indicated.

3. Screen Mounting: Top edge securely anchored to rigid metal roller and bottom edge formed into a pocket holding a 3/8-inch- (9.5-mm-) diameter metal rod with ends of rod protected by plastic caps.
    - a. Roller for end-mounted motor supported by self-aligning bearings in brackets.
    - b. Roller for motor in roller supported by vibration- and noise-absorbing supports.
  4. Tab Tensioning: Provide units that have a durable low-stretch cord, such as braided polyester, on each side of screen connected to edge of screen by tabs to pull screen flat horizontally. In lieu of tab tensioning, screens may be constructed from vinyl-coated screen cloth that contains horizontal stiffening monofilaments to resist edge curling.
- B. Suspended, Electrically Operated Screens with Automatic Ceiling Closure: end-mounted motor units designed and fabricated for suspended mounting; with bottom of case composed of two panels, fully enclosing screen, motor, and wiring; one panel hinged and designed to open and close automatically when screen is lowered and fully raised, the other removable or openable for access to interior of case.
1. Products: Subject to compliance with requirements, provide one of the following:
    - a. End-Mounted Motor:
      - 1) Da-Lite Screen Company; Executive Electrol.
      - 2) Draper Inc.; Ambassador.
  2. Provide metal or metal-lined motor enclosure on units with end-mounted motor.
  3. Provide metal or metal-lined wiring compartment on units with motor in roller.
  4. Screen Case: Made from metal.
  5. Provide screen case with trim flange to receive ceiling finish.
  6. Finish on Exposed Surfaces: Prime painted.

## 2.2 FRONT-PROJECTION SCREEN MATERIAL

- A. High-Gain Reflective Viewing Surface: Peak gain not less than 2.5, and half-gain angle of at least 20 degrees from the axis of the screen surface.
  1. Products: Subject to compliance with requirements, provide one of the following:
    - a. Da-Lite Screen Company; Polarized Screen.
    - b. Stewart Filmscreen Corporation; Silver 3D.
- B. Material: Vinyl-coated, glass-fiber fabric.
- C. Mildew-Resistance Rating: 0 or 1 when tested according to ASTM G 21.
- D. Flame Resistance: Passes NFPA 701.
- E. Flame-Spread Index: Not greater than 75 when tested according to ASTM E 84.
- F. Seamless Construction: Provide screens, in sizes indicated, without seams.
- G. Edge Treatment: Without black masking borders.

- H. Size of Viewing Surface: 72 by 96 inches (1828 by 2438 mm).

### PART 3 - EXECUTION

#### 3.1 FRONT-PROJECTION SCREEN INSTALLATION

- A. Install front-projection screens at locations indicated to comply with screen manufacturer's written instructions.
- B. Install front-projection screens with screen cases in position and in relation to adjoining construction indicated. Securely anchor to supporting substrate in a manner that produces a smoothly operating screen with vertical edges plumb and viewing surface flat when screen is lowered.
  - 1. Install low-voltage controls according to NFPA 70 and complying with manufacturer's written instructions.
    - a. Wiring Method: Install wiring in raceway except in accessible ceiling spaces and in gypsum board partitions where unenclosed wiring method may be used. Use UL-listed plenum cable in environmental air spaces, including plenum ceilings. Conceal raceway and cables except in unfinished spaces.
  - 2. Test electrically operated units to verify that screen controls, limit switches, closures, and other operating components are in optimum functioning condition.
  - 3. Test manually operated units to verify that screen-operating components are in optimum functioning condition.

#### 3.2 PROJECTION SCREEN SCHEDULE

- A. PS-1, Electrically Operated, Front-Projection Screen Type: Suspended, with automatic ceiling closure.
  - 1. Motor Configuration: End-mounted motor on right end of screen.
  - 2. Screen Surface: Matte white.
  - 3. Viewing Surface Size: 72 by 96 inches (1828 by 2438 mm).

END OF SECTION