

## SECTION 115213 - PROJECTION SCREENS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

- 1. **Electrically** operated projection screens.

- B. Related Sections:

- 1. Division 05 Section "Cold-formed Metal Framing" for concealed slotted channel framing supporting projection screens surface-mounted at juncture with ceilings.
  - 2. **Division 16 sections for electrical service and connections including device boxes for switches and conduit.**

#### 1.3 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.

#### 1.4 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:

- a. **Location of screen centerline relative to ends of screen case.**
- b. **Location of wiring connections for electrically operated units.**
- c. **Locations 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.

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

## 1.5 QUALITY ASSURANCE

- A. Source Limitations for Projection Screens: Obtain projection screens from single manufacturer. Obtain accessories, including necessary mounting hardware, from screen manufacturer.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Environmental Limitations: Do not deliver or install projection screens until spaces are enclosed and weathertight, 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.

## 1.7 COORDINATION

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

## PART 2 - PRODUCTS

### 2.1 **ELECTRICALLY OPERATED PROJECTION SCREENS**

- A. General: **Manufacturer's standard units consisting of case, screen, motor, 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.**

1. **Controls:** Remote, 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 control switches where indicated on drawings.
    - b. Provide power supply for low-voltage systems if required.
    - c. Provide locking cover plates for switches.
    - d. Provide infrared or radio-frequency remote control consisting of battery-powered transmitter and receiver.
    - e. Provide video interface control for connecting to projector. Projector provides signal to raise or lower screen.
  2. **Motor in Roller:** Instant-reversing 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. Mount motor inside roller with vibration isolators to reduce noise transmission.
  3. **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.
  4. **Screen Mounting:** Top edge securely anchored to a 3-inch- (75-mm-) diameter, rigid steel roller; bottom edge formed into a pocket holding a tubular metal slat, with ends of slat protected by plastic caps, and with a saddle and pull attached to slat by screws.
- B. **Surface-Mounted, Metal-Encased, Electrically Operated Screens:** **Motor-in-roller or end-mounted motor** units designed and fabricated for surface mounting at juncture with ceilings, fabricated from formed-steel sheet not less than 0.027 inch (0.7 mm) thick or from aluminum extrusions; with flat back design and vinyl covering or baked-enamel finish. Provide units with matching end caps and concealed mounting.
1. **Products:** Subject to compliance with requirements, one of the following:
    - a. **Motor in Roller:**
      - 1) **BEI Audio-Visual Products; Laminar XL.**
      - 2) **Da-Lite Screen Company; Cosmopolitan Electrol.**
      - 3) **Draper Inc.; Premier, Silhouette/Series E, Silhouette/Series V, or Targa.**
      - 4) **Stewart Filmscreen Corporation; Model A ElectriScreen.**
    - b. **End-Mounted Motor:**
      - 1) **Bretford, Inc.; Series 700.**

## 2.2 FRONT-PROJECTION SCREEN MATERIAL

- A. Matte-White Viewing Surface: Peak gain not less than 0.9, and gain not less than 0.8 at an angle of 50 degrees from the axis of the screen surface.
  - 1. Products: Subject to compliance with requirements, provide one of the following:
    - a. BEI Audio-Visual Products; Matte White.
    - b. Bretford, Inc.; Matte White.
    - c. Da-Lite Screen Company; Da-Mat, Matte White.
    - d. Draper Inc.; Fiberglass Matte White, Panamax, AT1200, M1300.
- B. Material: Vinyl-coated, glass-fiber fabric, (non-tensioned, reinforced screens).
- C. Mildew-Resistance Rating: 0 or 1 when tested according to ASTM G 21.
- D. Flame Resistance: Passes NFPA 701.
- E. Seamless Construction: Provide screens, in sizes indicated, without seams.
- F. Edge Treatment: Black masking borders.
- G. Size of Viewing Surface: 70 by 70 inches (1778 by 1778 mm), where indicated on the Drawings.
- H. Provide extra drop length of dimensions and at locations indicated.
  - 1. Color: Same as viewing surface.

## 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-projections screens from concealed supporting slotted channel apparatus designed or recommended by screen manufacturer.
- C. 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.

END OF SECTION 115213