

SECTION 11133 - PROJECTION SCREENS**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. Section Includes:**

- 1. Manually operated projection screens.
- 2. Electrically operated projection screens and controls.

B. Related Sections:

- 1. Division 5 Section "Metal Fabrications" for metal support framing for projection screens.
- 2. Division 6 Section "Miscellaneous Carpentry" for wood backing for screen installation.
- 3. Division 16 Sections for electrical service and connections including device boxes for switches.

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 manually operated projection screens:
 - a. Drop lengths.
 - b. Anchorage details.
 - c. Accessories.
 - 2. 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.

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.

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.

1.6 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 MANUALLY OPERATED PROJECTION SCREENS

A. General: Manufacturer's standard spring-roller-operated units, consisting of case, screen, mounting accessories, and other components necessary for a complete installation.

1. 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.
2. 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. Bracket-Mounted or Ceiling-Suspended, Metal-Encased, Manually Operated Screens: Units designed and fabricated for suspending from wall brackets or ceiling, fabricated from formed-

steel sheet not less than 0.027 inch (0.7 mm) thick or from aluminum extrusions; with vinyl covering or baked-enamel finish and matching end caps. Provide mounting brackets unless otherwise indicated.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Bretford, Inc.; Series 65.
 - b. Da-Lite Screen Company; Model B.
 - c. Draper Inc.; Luma.

2.2 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.

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 two control switches for each screen.
 - b. Provide locking cover plates for switches.
 - c. Provide infrared remote control consisting of battery-powered transmitter and receiver.
 - d. 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. 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 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: Motor-in-roller 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, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Motor in Roller:

- 1) Da-Lite Screen Company; Boardroom Electrol.
 - 2) Draper Inc.; Envoy.
 - 3) Stewart Filmscreen Corporation; Model ABT-4.
2. Provide metal or metal-lined wiring compartment on units with motor in roller.
 3. Screen Case: Made from metal.
 4. Provide screen case with trim flange to receive ceiling finish.
 5. Finish on Exposed Surfaces: Vinyl covering or baked enamel.

2.3 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. Basis-of-Design Products: Subject to compliance with requirements, provide "Da-Mat" or "Matte White" as manufactured by Da-Lite Screen Company, or approved equal.
- B. Material: Vinyl-coated, glass-fiber fabric or vinyl sheet.
- 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: Black masking borders.
- H. Size of Viewing Surface: 72 by 96 inches (1828 by 2438 mm).
- I. Provide extra drop length of dimensions and at locations indicated. 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-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. Test electrically operated units to verify that screen controls, limit switches, closures, and other operating components are in optimum functioning condition.
 2. Test manually operated units to verify that screen-operating components are in optimum functioning condition.

END OF SECTION 11133