

## SECTION 12 24 13

### ROLLER SHADES

#### PART 1 - GENERAL

##### 1.01 SUMMARY

- A. Section Includes:
  - 1. Manually operated roller shades with double rollers.
- B. Related Requirements:
  - 1. Section 07 92 00 "Joint Sealants" for sealing the perimeters of installation accessories for light-blocking shades with a sealant.

##### 1.02 REFERENCE STANDARDS

- A. Conform to current adopted reference standards by date of issue of the current code cycle and the date of the Contract Documents.
- B. ANSI - American National Standards Institute WCMA - Window Covering Manufacturers Association
  - 1. A100.1 - Safety of Corded Window Covering Products
- C. CEC - 2016 California Electrical Code, 24 CCR Part 3.
- D. NEMA - National Electrical Manufacturers Association
  - 1. ICS 6 - Industrial Control and Systems: Enclosures
- E. NFPA - National Fire Protection Association
  - 1. 701 - Flame Propagation of Textiles and Films
- F. UL - Underwriters Laboratories
  - 1. 325 - Door, Drapery, Gate, Louver, and Window Operators and Systems

##### 1.03 COORDINATION

- A. Verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

##### 1.04 SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include styles, material descriptions, construction details, dimensions of individual components and profiles, features, finishes, and operating instructions for roller shades.

- B. Shop Drawings: Show fabrication and installation details for roller shades, including shadeband materials, their orientation to rollers, and their seam and batten locations.
  - 1. Motor-Operated Shades: Include details of installation and diagrams for power, signal, and control wiring.
- C. Samples: For each type of roller shade.
  - 1. Shadeband Material: Not less than 10 inches square. Mark inside face of material if applicable.
  - 2. Installation Accessories: Full-size unit, not less than 10 inches long, for each color and finish proposed.
- D. Roller-Shade Schedule: Use same designations indicated on Drawings.
- E. Product Test Reports: For each type of shadeband material, for tests performed by a qualified testing agency.
- F. Closeout Submittals
  - 1. Maintenance Data: For roller shades to include in maintenance manuals.

#### 1.05 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Roller Shades: Full-size units equal to 5 percent of quantity installed for each size, color, and shadeband material indicated, but no fewer than two units.
  - 2. Provide additional 5% of the total length of qualified stainless steel chain required on the project, not to exceed the quantity of one 500' spool.
  - 3. Provide additional 5% of each type of shade mounting hardware or brackets, but not less than one pair of each type.
  - 4. Provide additional 5% of each motor type used on project, but not less than quantity of one each.
  - 5. Clearly label all spare components and supply to Owner upon completion in original packaging for storage on site by Owner.

#### 1.06 QUALITY ASSURANCE

- A. Qualifications:
  - 1. Manufacturer: 10 years minimum experience manufacturing products comparable to those specified in this section.
  - 2. Installer: 3 years minimum experience installing products comparable to those specified in this section.
- B. Mock-ups: Build mock-ups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
  - 1. Approval of mock-ups does not constitute approval of deviations from the Contract Documents contained in mock-ups unless Architect specifically approves such deviations in writing.
  - 2. Subject to compliance with requirements, approved mock-ups may become part of the completed Work if undisturbed at time of Substantial Completion.

## 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roller shades in factory packages, marked with manufacturer, product name, and location of installation using same designations indicated on Drawings.

## 1.08 FIELD CONDITIONS

- A. Environmental Limitations: Do not install roller shades until construction and finish work in spaces, including painting, is complete and dry and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

## 1.09 WARRANTIES

- A. Operating Components: 5 years from Date of Substantial Completion and contain provisions that installation is to remain operational without fault for the warranty period and include all operating parts, including shade-cloth.

## PART 2 - PRODUCTS

### 2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, acceptable manufacturers include, but are not limited to, the following:
  - 1. MechoShade Systems Inc, Long Island City, NY.
  - 2. Roll-A-Shade, Lake Elsinore, CA.
  - 3. Skyco Shading Systems Inc, Santa Ana, CA.
  - 4. Solar Shading Systems, Costa Mesa, CA.
  - 5. Or equal, as approved in accordance with Division 01 requirements for Substitutions.
- B. Source Limitations: Obtain roller shades from single source from single manufacturer.

### 2.02 MANUALLY OPERATED SHADES WITH DOUBLE ROLLERS

- A. Chain-and-Clutch Operating Mechanisms: With continuous-loop bead chain and clutch that stops shade movement when bead chain is released; permanently adjusted and lubricated.
  - 1. Bead Chains: Stainless steel.
    - a. Loop Length: Full length of roller shade.
    - b. Limit Stops: Provide upper and lower ball stops.
    - c. Chain-Retainer Type: Chain tensioner, jamb or sill mounted.
  - 2. Spring Lift-Assist Mechanisms: Manufacturer's standard for balancing roller-shade weight and lifting heavy roller shades.

- a. Provide for shadebands that weigh more than 10 lb or for shades as recommended by manufacturer, whichever criteria are more stringent.
- B. Rollers: Corrosion-resistant steel or extruded-aluminum tubes of diameters and wall thicknesses required to accommodate operating mechanisms and weights and widths of shadebands indicated without deflection. Provide with permanently lubricated drive-end assemblies and idle-end assemblies designed to facilitate removal of shadebands for service.
  - 1. Double-Roller Mounting Configuration: Offset, outside roller over and inside roller under.
  - 2. Inside Roller:
    - a. Roller Drive-End Location: Right side of inside face of shade.
    - b. Direction of Shadeband Roll: Regular, from back of roller.
  - 3. Outside Roller:
    - a. Roller Drive-End Location: Left side of inside face of shade.
    - b. Direction of Shadeband Roll: Regular, from back of roller.
  - 4. Shadeband-to-Roller Attachment: Removable spline fitting integral channel in tube.
- C. Mounting Hardware: Brackets or endcaps, corrosion resistant and compatible with roller mounting configuration, roller assemblies, operating mechanisms, installation accessories, and installation locations and conditions indicated.
- D. Inside Shadebands: Light-filtering fabric.
  - 1. Shadeband Bottom (Hem) Bar: Steel or extruded aluminum, enclosed in sealed pocket of shadeband material.
- E. Outside Shadebands: Light-blocking fabric.
  - 1. Shadeband Bottom (Hem) Bar: Steel or extruded aluminum, enclosed in sealed pocket of shadeband material.

## 2.03 SHADEBAND MATERIALS

- A. Shadeband Material Flame-Resistance Rating: Comply with NFPA 701. Testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- B. Light-Blocking Fabric: per drawings
- C. Light-Filtering Fabric: per drawings

## 2.04 INSTALLATION ACCESSORIES:

- A. Surface-mounted type Headbox: Rectangular, extruded-aluminum enclosure including front fascia, top and back covers, endcaps, and removable bottom closure.
  - 1. Shape: L-shape
  - 2. Height: Manufacturer's standard height required to enclose roller and shadeband when shade is fully open, but not less than 3 inches.
  - 3. Provide where face-of-wall mounting is indicated.
- B. Endcap Covers: To cover exposed endcaps.
- C. Closure Panel and Wall Clip: Removable aluminum panel designed for installation at bottom of site-constructed ceiling recess or pocket and for snap-in attachment to wall clip without fasteners.
  - 1. Closure-Panel Width: 2 inches.
- D. Side Channels: With light seals and designed to eliminate light gaps at sides of shades as shades are drawn down. Provide side channels with shadeband guides or other means of aligning shadebands with channels at tops.
  - 1. Provide where light-blocking fabric is indicated.
- E. Installation Accessories Color and Finish: per drawings

## 2.05 ROLLER-SHADE FABRICATION

- A. Product Safety Standard: Fabricate roller shades to comply with ANSI/WCMA A100.1, including requirements for flexible, chain-loop devices; lead content of components; and warning labels.
- B. Unit Sizes: Fabricate units in sizes to fill window and other openings as follows, measured at 74 deg F:
  - 1. Between (Inside) Jamb Installation: Width equal to jamb-to-jamb dimension of opening in which shade is installed less 1/4 inch per side or 1/2-inch total, plus or minus 1/8 inch. Length equal to head-to-sill or -floor dimension of opening in which shade is installed less 1/4 inch, plus or minus 1/8 inch.
  - 2. Outside of Jamb Installation: Width and length as indicated, with terminations between shades of end-to-end installations at centerlines of mullion or other defined vertical separations between openings.
- C. Shadeband Fabrication: Fabricate shadebands without battens or seams to extent possible except as follows:
  - 1. Where width-to-length ratio of shadeband is equal to or greater than 1:4, provide battens and seams at uniform spacings along shadeband length to ensure shadeband tracking and alignment through its full range of movement without distortion of the material.

2. Railroaded Materials: Railroad material where material roll width is less than the required width of shadeband and where indicated. Provide battens and seams as required by railroaded material to produce shadebands with full roll-width panel(s) plus, if required, one partial roll-width panel located at top of shadeband.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with installer present, for compliance with requirements for installation tolerances, operational clearances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.02 ROLLER-SHADE INSTALLATION

- A. Install roller shades level, plumb, and aligned with adjacent units according to manufacturer's written instructions.
  1. Opaque Shadebands: Located so shadeband is not closer than 2 inches to interior face of glass. Allow clearances for window operation hardware.

### 3.03 ADJUSTING

- A. Adjust and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.

### 3.04 CLEANING AND PROTECTION

- A. Clean roller-shade surfaces after installation, according to manufacturer's written instructions.
- B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and installer, that ensure that roller shades are without damage or deterioration at time of Substantial Completion.
- C. Replace damaged roller shades that cannot be repaired, in a manner approved by Architect, before time of Substantial Completion.

### 3.05 INSTRUCTIONS/TRAINING TO OWNER'S PERSONNEL

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain motor-operated roller shades
- B. Instruct Owner's personnel in proper operation and maintenance of all systems, equipment and similar items which were provided as part of Work.
- C. Contractor shall provide schedule to Owner for approval for each of instruction periods required. Total hours of training, not less than 1 hour for each individual equipment specified or scheduled.

- D. Instruction sessions will be held in Owner designated area on project site and at Owner's convenience.
- E. Instructors shall be qualified by product manufacturer in subject matter presented at training session.

**END OF SECTION**