SECTION 12 2413
ROLLER WINDOW SHADES

PART 1 – GENERAL

1.01 SUMMARY
A. Section includes
   1. Manually operated roller shades
   2. Motor operated roller shades with double rollers

1.02 REFERENCES
A. National Fire Protection Association (NFPA) 701

1.03 SUBMITTALS
A. Product Data: Manufacturer’s data sheets shall be submitted for each product specified, including:
   1. Preparation instructions and recommendations
   2. Finishes, material descriptions, dimensions of individual components
   3. Construction and installation instructions
   4. Manufacturer's recommendations for maintenance and cleaning
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 Verification: For each type of roller shade.
   1. Shadeband Material: Not less than 3 inches square. Mark inside face of material if applicable.
D. Roller-Shade Schedule: Use same designations indicated on Drawings.
E. Electric shade motors shall comply with UL standards. Copy of compliance available for submission upon request.

1.04 QUALITY ASSURANCE
A. Supplier: Manufacturer, subsidiary or licensed agent shall be approved to supply the products specified, and to honor any claims against product presented in accordance with warranty.
B. Installer: Installer or agent shall be qualified to install specified products by prior experience, demonstrated performance and acceptance of requirements of manufacturer, subsidiary, or licensed agent. Installer shall be responsible for an acceptable installation.
C. Uniformity: Provide Manual & Motorized Roller Shades of only one manufacturer for entire project.

1.05 DELIVERY, STORAGE AND HANDLING
A. Product shall be delivered to site in manufacturer’s original packaging.
B. Product shall be handled and stored to prevent damage to materials, finishes and operating mechanisms.

1.06 JOB CONDITIONS
A. Prior to shade installation, building shall be enclosed.
B. Interior temperature shall be maintained between 60° F. and 90° F. during and after installation; relative humidity shall not exceed 80%. Wet work shall be complete and dry.
C. 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.
D. Field Measurements: Where roller shades are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate
measurements on Shop Drawings. Allow clearances for operating hardware of operable glazed units through entire operating range. Notify Architect of installation conditions that vary from Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.07 WARRANTY

A. Warranty: Provide manufacturer's standard warranties, including the following:
   2. Electronic Roller Shade EDU’s and EDU Control Systems: Manufacturer's standard non-depreciating five (5) year warranty.
   3. Roller Shade Installation: One (1) year from date of Substantial Completion.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

A. Hunter Douglas Architectural: 13915 Danielson St., Ste.100, Poway, CA 92064; Justin Pratt – Southwest Regional Manager; Phone: 214-499-5513; Website: www.HDarchitectural.com, or architect approved equivalent.

B. MechoSystems

C. Lutron Shading Systems

D. Source Limitations: Obtain rollers from single source from single manufacture.

2.02 MANUAL ROLLER SHADES


B. Materials:
   1. Fabrics: Inherently anti-static, flame retardant, fade and stain resistant, light filtering, room darkening, & blackout fabrics providing 0% - 14% openness factors. Fabric weights to range between 6.00 oz/sq.yd. – 20.70 oz/sq.yd., containing fiberglass, PVC, polyester, acrylic, vinyl laminates, cotton, & vinyl coatings. Finish selected by architect from manufacturer's available contract colors.
   2. Control Systems:
      a. Clutch Operated: Engineered heavy duty chain drive pulley operating system consisting of metal clutch housing and locking plug containing minimum 6 ribs and inserted at minimum of 2-1/4” into roller tube. Lift torque enhancement provided by Counter Balance System with integrated spring support module. Utilization of adjustment-free continuous qualified T304 stainless steel ball chain with 110 lbs breaking strength for precise control, smooth operation and ensuring a uniform look. Chain tensioner to be compliant with WCMA safety standard A100.1-2010 and must prevent the clutch system from moving the roller shade through lowering and raising if not properly installed as specified in ANSI Standard Section 6.5.2. Components will be maintenance free from adjustments or lubrication for trouble-free operation.
   3. Dual Roller Shades: Universal mount steel brackets with 2 separate solar and room darkening blackout roller shades operating independently of each other.
   4. Roller Tube: Circular-shaped aluminum tube extruded from alloy and temper 6063 T-6. 2”outside diameter extruded tube to have a .063” wall thickness (2.5” outside diameter to have a .079” wall thickness). Heavily reinforced with minimum six internal ribs providing additional tensile strength and allows for secure placement of clutch & end plug.
   5. Heavy Duty Tube Bearing Plug: Die cast metal and reinforced idler assembly containing spring loaded end plug with positive locking wheel allows for up to 7/8” adjustment and provides for a secure installation and removal of shade. Locking tube bearing plug contains minimum 6 ribs and inserted a minimum of 2-3/8” into roller tube.
   6. Bottom Bar: Extruded aluminum weight in a Sealed Pocket Hem Bar, or RB Bottom Bar for fabrics that are not seamable. Bottom bar is for tracking adjustments and provides uniform look.
7. Mounting Hardware: Manufacturer’s standard heavy duty bracket constructed of hardened 1/8” thick steel to support full weight of shade with bracket & screw hole covers to provide uniform look. Integrated leveling device for enhanced level adjustment of overall shade. Locking mechanism on bracket adapter provides for a secure installation and removal of the shade.

8. Fascia: L shape removable aluminum extrusion valance that attaches to brackets and conceals roller shade.

9. Roller Shade Pocket: Extruded aluminum alloy U shape housing for recessed mounting in acoustical tile or drywall ceilings. 5.25” (or 9”) in diameter with aluminum closure mount.


11. Additional Available Options: RB500 Bottom Bar, Reverse Roll, Detachable Spline, Internal Auto Stop Mechanism, Coupled and Banded

2.03 MOTORIZED ROLLER SHADES

A. Product: Hunter Douglas Architectural “RB 500 Motorized Roller Shades”

B. Materials:

1. Fabrics: Inherently anti-static, flame retardant, fade and stain resistant, light filtering, room darkening, & blackout fabrics providing 0% - 14% openness factors. Fabric weights to range between 6.00 oz/sq.yd. – 20.70 oz/sq.yd., containing fiberglass, PVC, polyester, acrylic, vinyl laminates, cotton, & vinyl coatings. Finish selected by architect from manufacturer’s available contract colors.

2. Roller Shade Motors: Design of shade motors is based on the Whisper HDC100RQ and HDC200RQ control system manufactured by Hunter Douglas Contract Window Coverings or Somfy systems.

3. Motors:
   a. Tubular, asynchronous (non-synchronous) motors with a 3 conductor keyed AC power plug at the motor head that can be detached at the motor head assembly directly. Concealed inside roller shade tube. Quiet operation of up to 44dBA within 3’.
   b. Intelligent AC motor 115 VAC, 50-60 Hz, thermally protected, lifetime lubricated, equipped with an internal thermal overload protector. Maximum current draw not to exceed 0.9 amps when operating up to an overall width of 156”, or a maximum current of 1.8 amps when operating 156”+ overall width.
   c. Provide the ability to set limit stop positioning (maximum up/down limits) through 3 clear buttons with internal LED’s.
   d. Use motors rated at the same nominal speed for all rollershades in the same room.
   e. Total hanging weight of shade band shall not exceed 80 percent of the rated lifting capacity of 6Nm when operating up to 156” overall width, and 12Nm when operating 156”+ overall width.
   f. Motors must include an embedded Motor Control System without requiring any external motor logic control system outside of the motor assembly unit itself.

4. Keypad/Local User Override:
   a. Allow for keypad switch control for up to 24 buttons connected directly to the Whisper RQ motor assembly to allocate for individual and group control, with up to four intermediate stop positions. When utilizing intermediate stop positions, all shades in the same room must be able to perfectly align with each other along those programmed intermediate stops.
   b. Connect local wall switches/keypads directly to the motor assembly itself via a low voltage (DC) CAT5/RJ25 cable. A low voltage (DC) splitter is used to connect the keypad to the motor, and to allow for communication/direct connection to adjacent motors in the same network.
   c. Controls shall be Master and Subgroup switching for all three elevations, as indicated in Contract Documents.

5. Control Systems:
a. Design of motor control system is based on the Whisper RQ control system manufactured by Hunter Douglas Contract Window Coverings, or equal.
b. Motor Control System:
   1) Must be integrated into the motor unit itself. External motor control systems that require “home run” 110v line voltage will not be accepted.
   2) Motor Control System must provide bidirectional feedback, allowing for two-way communication between the motor with embedded internal motor control system and it’s point of communication.
   3) Motor control system allows for backward compatibility to allow for the add-on of building automation system integration, audio-visual systems, third party light control systems, light sensors, Radio Frequency and Infrared Remote operation, all through means of plugging into the splitter via a low voltage (DC) CAT6/RJ25 plug-in.
   4) Allow for up to 100 Whisper RQ Motors to be networked together to allow for master group controlling or integration with third-party light control and building automation systems.
   5) Allow for up to four intermediate stop positioning via the keypad/local-user override, or up to 98 intermediate stop positioning if accepting commands via serial input (computer, third party light control systems, or automation systems)
   6) Allow for operation of all motors via a computer on the GUI PRO system.
   7) Reconfiguration of switch shall not require rewiring of the hardwired line voltage motor power supply wiring, or the low voltage control wiring. Reconfiguration of switch groups shall be accomplished within the motor control device (Whisper RQ with embedded internal motor control system)
c. Operating Features:
   1) Group switching with integrated switch control; single faceplate for multiple switch cutouts.
   2) Capable of interface with audiovisual control system at rooms wither overhead projectors are located
6. Only one width of motor and/or roller shade is permitted at north window of room LC230 between column grids two and three. Ganging, multiple units or motors for this width are not allowed. This span must be one continuous roller shade unit (applies to light filtering and blackout shade motors and/or rollers).

2.04 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-Filtering Fabric: Woven fabric, stain and fade resistant.
   2. Type: GlacierScreen HD1005; 2x2 basketweave consisting of 22% polyester, 78% vinyl
   3. Greenguard Gold certified
   4. Silver nano sterilization - protection against bacteria, fungi, microbes and viruses
   5. Thickness: .026 inches
   7. Roll Width: As indicated on drawings.
   8. Orientation on Shadeband: Up the bolt.
   9. Openness Factor: 5 percent
   10. Color: TBD by Interior Designer
C. Blackout Fabric with Opaque Acrylic Backing: Stain and fade resistant.
   2. Type: Avila Twilight; PVC free consisting of 37.5% polyester, 62.5% acrylic foam backing
   3. Bacterial Resistance: ASTM G21
   4. Thickness: .02 inches
   5. Weight: 14.5 oz/sq. yd.
   6. Roll Width: As indicated on drawings.
7. Orientation on Shadeband: Up the bolt.
9. Color: TBD by Interior Designer

D. Only one section of fabric is permitted in room LC230 at north window between column grid lines two and three. No vertical gaps or seams allowed.

2.05 ACCESSORIES

A. Dual Roller Shades: Universal mount steel brackets with 2 separate solar and room darkening blackout roller shades operating independently of each other.

B. Roller Tube: Circular-shaped aluminum tube extruded from alloy and temper 6063 T-6. 2"outside diameter extruded tube to have a .063" wall thickness (2.5" outside diameter to have a .079" wall thickness). Heavily reinforced with minimum six internal ribs providing additional tensile strength and allows for secure placement of clutch & end plug.

C. Heavy Duty Tube Bearing Plug: Die cast metal and reinforced idler assembly containing spring loaded end plug with positive locking wheel allows for up to 7/8" adjustment and provides for a secure installation and removal of shade. Locking tube bearing plug contains minimum 6 ribs and inserted a minimum of 2-3/8" into roller tube.

D. Bottom Bar: Extruded aluminum weight in a Sealed Pocket Hem Bar, or RB Bottom Bar for fabrics that are not seamable. Bottom bar is for tracking adjustments and provides uniform look.

E. Mounting Hardware: Manufacturer’s standard heavy duty bracket constructed of hardened 1/8" thick steel to support full weight of shade with bracket & screw hole covers to provide uniform look. Integrated leveling device for enhanced level adjustment of overall shade. Locking mechanism on bracket adapter provides for a secure installation and removal of the shade.

F. Fascia: L shape removable aluminum extrusion valance that attaches to brackets and conceals roller shade.

G. Roller Shade Pocket: Extruded aluminum alloy U shape housing for recessed mounting in acoustical tile or drywall ceilings. 5.25" (or 9") in diameter with aluminum closure mount.

H. Blockout System: Extruded aluminum side channel with concealed mounting brackets. Bottom bar with nylon wool pile to prevent light leakage.

I. Additional Available Options: RB500 Bottom Bar, Reverse Roll, Detachable Spline, Internal Auto Stop Mechanism, Coupled and Banded

2.06 FABRICATION

A. Shade measurements shall be accurate to within + 1/8" or as recommended in writing by manufacturer.

B. Roller-shade fabrication:
   1. Product Safety Standard: Fabricate roller shades to comply with WCMA A 100.1, including requirements for flexible, chain-loop devices; lead content of components; and warning labels.
   2. Unit Sizes: Fabricate units in sizes to fill window and other openings as follows, measured at 74 deg F:
      a. 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.
   3. Shadeband Fabrication: Fabricate shadebands without battens or seams to extent possible except as follows:
      a. Vertical Shades: Where width-to-length ratio of shadeband is equal to or greater than 1.4, provide battens and seams at uniform spacings along shadeband lenght to ensure shadeband tracking and alignment through its full range of movement without distortion of the material.
PART 3 - EXECUTION

3.01 INSPECTION:
   A. Subcontractor shall be responsible for inspection on site, approval of mounting surfaces, installation conditions and field measurement for this work.
   B. Other interacting trades shall receive drawings of shade systems, dimensions, assembly and installation methods from subcontractor upon request.

3.02 INSTALLATION:
   A. Installation shall comply with manufacturer’s specifications, standards and procedures as detailed on contract drawings.
   B. Adequate clearance shall be provided to permit unencumbered operation of shade and hardware.
   C. Clean finish installation of dirt and finger marks. Leave work area clean and free of debris.
   D. Roller-Shade: Install roller shades level, plumb, and aligned with adjacent units according to manufacturer's written instructions.
   E. Electrical Connections: Connect motor-operated roller shades to build electrical system.

3.03 DEMONSTRATION:
   A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain motor-operated roller shades.

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

END OF SECTION