

SECTION 12490.2  
MANUAL ROLLER SHADES

PART 1 GENERAL

2.1 SUMMARY

**!!! SPECIFIER NOTE: COORDINATE SHADE TYPE INFORMATION WITH DRAWINGS AND SCHEDULES. SELECT APPROPRIATE SHADE TYPE AND EDIT SCOPE INFORMATION ACCORDING TO PROJECT REQUIREMENTS!!!**

A. Section Includes:

1. Shade Type 1: Manually operated interior roller-screen solar shades in all exterior window openings [uno – see drawings] or as indicated in schedule at end of section.

**AND / OR**

2. Shade Type 2: Manually operated interior roller-screen room darkening shades in all exterior window openings [uno – see drawings] or as indicated in schedule at end of section.

**!!! SPECIFIER NOTE: COORDINATE THESE ITEMS WITH APPROPRIATE SPECIFICATIONS ELSEWHERE IN PROJECT MANUAL!!!**

B. Products Supplied But Not Installed Under This Section:

1. Metal shade pockets or housings recessed into ceiling system or assembly.
2. Extruded aluminum ceiling pocket trim (closure) assemblies.

C. Related Sections:

1. Section 06100-- Rough Carpentry; blocking for support of window shade brackets or pocket assemblies.
2. Section 09250-- Gypsum Drywall; substrate for window shade systems and installation of shade pockets, pocket closure and/ or accessories supplied only under this section.
3. Section 09510-- Acoustical Ceilings; installations of shade pockets, pocket closure and or accessories supplied only under this section.

2.2 PERFORMANCE REQUIREMENTS

A. Fire: Provide shade fabrics tested in accordance with:

- .1 1989 NFPA 701 small scale Vertical Burn Test and rated "PASS."
- .2 1996 NFPA 701 small scale Vertical Burn (telephone booth test) and rated "PASS."

B. Toxicity: Provide shade fabrics tested in accordance with University of Pittsburgh Toxicity Protocol including LC50 analysis and toxicity characteristics.

C. Anti-microbial:

1. ASTM G-22-80 results for ATCC6538 (*Staphylocaoccus aureus*) and ATCC13388 (*Psuedomonas aeroginosa*) indicating minimum 5mm (0.197 inches) 'No Growth Contact Area'.
2. ASTM G-21-85 results for ATCC9642, ATCC9644, ATCC9348 and ATCC9645 indicating 'No Growth'.

2.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets, performance data, and installation instructions for each item required.

B. Shop Drawings:

1. Interior Elevations at 1:32 [ $3/8'' = 1'-0''$ ] (1:32) scale min indicating shade layout, seam / batten locations and coordination with surrounding conditions.
2. Floor plans or reflected ceiling plans showing overall arrangement of shades and control locations.
3. Head, Jamb and sill details as necessary to coordinate work with surrounding conditions and construction.
4. Shade schedule coordinating room number, window type, opening size(s), quantities and key to details.

C. Samples:

1. Selection samples:
  - a 3" X 5" (76 mm x 127 mm) shade cloth fabric swatches for initial fabric color selection from manufacturer's full range of available fabrics.
  - b Standard aluminum finish color samples from manufacturer's range of standard colors.
2. Verification samples:
  - a One fully operational window shade sample of each type required 30" X 30" (760 mm x 760 mm) complete with selected shade cloth including sample of seam / batten when applicable. Disassemble sample to demonstrating compliance with PART 2.
  - b One complete set of all shade components, unassembled, demonstrating compliance with PART 2.

D. Design Data, Test Reports, Certificates: Current reports from independent testing laboratories demonstrating compliance with article 1.2.

E. Manufacturers' Instructions: Manufacturer's standard installation instructions.

## 2.4 QUALITY ASSURANCE

### A. Qualifications:

1. Manufacturer: 20 years minimum experience manufacturing products comparable to those specified in this section.
2. Installer: 5 years minimum experience installing products comparable to those specified in this section.

B. Field Samples: Install large size sample of selected fabric for final verification of color, weave and density, in opening as directed by design professional.

C. Do not fabricate shades without obtaining field dimensions for each opening. Coordinate construction of surrounding conditions to allow for timely field dimension verification.

## 2.5 DELIVERY, STORAGE, AND HANDLING

### A. Storage and Protection:

B. Do not deliver items to the project until all concrete, masonry, plaster, painting and other wet work has been completed and is dry.

C. Deliver shades to project in labeled protective packaging. Uniquely labeled to identify each shade for each opening. Schedule delivery to prevent delays to completion of work but to minimize on site storage time.

D. Store materials in a dry secure place. Protect from weather, surface contaminants, corrosion, construction traffic and all other potential damage.

## 2.6 WARRANTY

### A. Special Warranty:

1. Manual Operating Components: Provide Manufacturer's warranty under provisions of Division 1 - General Requirements. Warranty period to be 10 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 shadecloth, except for the bead chain which is not covered by the warranty and is deemed to be a maintenance / service item.
2. Installation: Provide Contractor's warranty under provisions of Division 1 - General Requirements that installation shall be free from defects for a period of not less than 1 year.
3. In the event of a warranted product failure, the Shade Contractor will, at no cost to owner, facilitate acquisition and delivery of all necessary components to the owner.

## 2.7 MAINTENANCE

### A. Extra Materials:

1. Provide as a separate bid amount the cost to supply additional spare materials for storage by owner as follows:
  - a 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.
  - b Provide additional 5% of each type of shade mounting hardware or brackets, but not less than one pair of each type.
  - c Provide a quantity of replacement shadebands completely fabricated and ready to attach to roller tubes equal to 5% of the total number of shadebands of each fabric and each color in the largest size required for each of those fabrics.
2. Clearly label all spare components and supply to Owner upon completion in original packaging for storage on site by Owner.

- ### B. Maintenance Service: Provide as a separate bid amount the cost for annual maintenance contract providing service 'on demand' for repair and maintenance as may be generally anticipated for the conditions of this project.

## PART 2 PRODUCTS

**!!!SPECIFIER NOTE: THIS SPECIFICATION IS WRITTEN AS A DESCRIPTIVE, OPEN PROPRIETARY SPEC – IT IS INTENDED TO ALLOW THE CONTRACTOR TO SUBMIT OTHER MANUFACTURER’S TO YOU FOR PRIOR APPROVAL IN THE EVENT THAT MULTIPLE MANUFACTURER’S ARE DESIRED IN EFFORTS TO PROMOTE COMPETITIVE BID SITUATIONS – PLEASE BE AWARE THAT MANUFACTURERS NOT MEETING THESE REQUIREMENTS SHOULD ONLY BE APPROVED AS VOLUNTARY ALTERNATES AND NOT AS ‘EQUAL TO’ OR ‘EQUIVALENT’ MANUFACTURERS. APPROVAL OF NON-COMPLIANT MANUFACTURERS AS EQUALS PUTS MECHOSHADE’S QUALITY PRODUCTS AT A COMPETITIVE DISADVANTAGE AND HAS THE REVERSE EFFECT ON BIDS FROM OTHER MANUFACTURERS!!! IF NON-COMPLIANT MANUFACTURERS BIDS ARE ACCEPTED, ALL BIDDERS SHALL HAVE THE RIGHT TO PROVIDE THE VOLUNTARY ALTERNATE BID AND MUST BE SO NOTIFIED.**

### 2.1 MANUFACTURERS

A. Manufacturer: To establish a standard of quality, design and function desired, drawings and specifications are based on products by MechoShade Systems, Inc., Long Island City, NY., USA, Phone: 718-729-2020, Fax: 718-729-2941. Alternate products complying with the performance criteria detailed in Section 2.2. must be approved by the Design Professional not less than ten days prior to bid date. Non-compliant alternates may be considered as Voluntary Alternate Deducts to Base Bid only and are subject to acceptance by the Design Professional. All proposed alternates (clearly delineated as such) must be submitted in writing for approval by the Design Professional a minimum of 10 days prior to bid date and must be made available to all bidders. See section 01630 for instructions regarding submittal requirements for alternate or substitute products. If voluntary alternates are accepted, each bidder shall submit a base bid on the specified product and an alternate bid on an equivalent to the voluntary alternate.

#### B. AUTHORIZED LICENSED DEALER

Brambier's South Florida  
1616 NE 205 Terrace  
Miami, FL 33179  
Phone: 305.653.1712  
Fax: 305.653.1714

Email: [bob@brambiers.com](mailto:bob@brambiers.com)

[www.brambiers.com](http://www.brambiers.com)

Brambier’s North Florida  
1648 Taylor Road PMB 240  
Daytona Beach, FL. 32128  
Phone: 386.756.0101  
Fax: 305.513.5866  
Georgia Fax: 770.234.5505  
Email: [lyle@brambiers.com](mailto:lyle@brambiers.com)

### 2.2 COMPONENTS

**!!!SPECIFIER NOTE:**

**THIS SECTION MUST BE EDITED TO MATCH PROJECT REQUIREMENTS. MAKE NOTE OF ‘OR’ CHOICES AND DELETE ALL INAPPROPRIATE ITEMS. WHEN COMBINATIONS OF FABRIC OR COMPONENTS ARE BEING SPECIFIED ie MOTORIZED ROOM DARKENING SHADES AND MANUAL SOLAR SHADES PLEASE TAKE CARE TO COORDINATE COMPONENT SPECS FOR**

APPROPRIATE SHADE TYPE – YOUR MECHOSHADE SALES PROFESSIONAL MAY BE OF ASSISTANCE IN EDITING THIS DOCUMENT FOR YOU!!!

**!!!SPECIFIER NOTE:**

PLEASE REVIEW SHADECLOTH SELECTION GUIDELINES [attached and on disk] CAREFULLY PRIOR TO SELECTING FABRIC. MECHOSHADE SYSTEMS WILL BE PLEASED TO OFFER OUR PROJECT SPECIFIC SHADECLOTH RECOMMENDATIONS WHEN PROVIDED THE NECESSARY GLAZING INFORMATION. . Shadecloth selection shall be compatible with glazing characteristics, visible light transmittance and solar orientation, and intended occupancy characteristics requirements. Recommended shadecloth densities based on visible light (daylight) transmittance of glass: 60-90% visible light, 0-2% Openness; 35-50% visible light transmittance, 3-6% Openness; 22-30% visible light transmittance, 5-10% Openness; less than 20% transmittance, 10-15% Openness.

- A. Shadebands: Construction of shadeband includes the fabric, the hembar and hempocket, and the attachment of the shadeband to the roller tube:
1. Visually Transparent Single-Fabric Shadecloth: MechoShade Systems, Inc., ThermoVeil group, single thickness non-raveling 0.030-inch (.762 mm) thick vinyl fabric, woven from .018-inch (.457 mm) diameter extruded vinyl yarn comprising of 21% polyester and 79% reinforced vinyl, in colors selected from manufacturer's available range.
    - a Open Linear Weave: "1800 series", 15% open, linear-weave pattern.  
**OR**
    - b Medium Linear Weave: "1600 series", 6% open, medium linear-weave pattern.  
**OR**
    - c Dense Linear Weave: "1000 series", 3% open, dense linear-weave pattern.  
**OR**
    - d Extra - Dense Linear Weave "0900 series", 0-1% visually translucent linear weave pattern.  
**OR**
    - e Open Basket Weave: "2100 series", 10% open, 2 x 2 open basket-weave pattern.  
**OR**
    - f Dense Basket Weave: "1300 series", 5% open, 2 x 2 dense basket-weave pattern.  
**OR**
    - g Dense Satin Twill Weave: 2% open at 90-degree view and 6% open at 45-degree view. "3000 series" Satin Texture group, "3200 series" Diamond Pastel group, and "3300 series" Diamond Earthtone group; 2% open in the 90-degree-view zone with higher 6% visible light transmittance in the 45-degree-view zone. Multi-color construction has a two-color effect with one color dominating on each side.  
**OR**

2. Visually Transparent Single-Fabric Shadecloth: MechoShade Systems, Inc., EuroVeil "5300" Series: .010 diameter (0.254 mm) non-raveling vinyl/polyester yarn. Fabric thickness .025 inches (0.635 mm)

**OR**

3. Visually Transparent Single-Fabric Shadecloth: "0600 Series", Insulating-film Shadecloth: MechoShade Systems, Inc., Microfilm group, 0.005-inch-thick (.127 mm) transparent and laminated mylar film and weighing 0.13 pounds per square yard (59 grams), in tints with reflective-low-"E" coatings selected from manufacturer's available range.

**OR**

4. Vinyl Room darkening Shadecloth (single-fabric): MechoShade Systems, Inc., "0700 series", Blackout material, washable and colorfast laminated and embossed vinyl coated fabric, .012 inches thick (.30 mm) blackout material and weighing .81 lbs., (368.18 grams) per square yard, with a minimum of 62 threads per square inch in colors selected from manufacturer's available range.

**AND/OR**

5. Lined Insulated Shades: MechoShade Systems, Inc., Dual Shade System. Dual Shade: Two fabrics (shadecloths) on one roller with an insulating air space. Allows for two selected fabrics for aesthetic and functional effect.
  - a Face fabric: [Cut and paste in fabric selection from above in this location.]
  - b Film Liner: ThermoVeil Mirrofilm "0600 series"; transparent laminated polyester film, in tints selected from manufacturer's available range.

**OR**

- c Blackout Liner: ThermoVeil "0700 series"; vinyl-coated fabric in colors selected from manufacturer's available range.
6. Hembars and hempockets:
  - a Fabric hempocket with RF - welded seams (including welded ends) and concealed hemweights. Hemweights must be of appropriate size and weight for shadeband and must be continuous inside a sealed hempocket. Match hempocket construction for all shades in same rooms.

**OR**

- b Exposed (Blackout) Hembar: 3/8 x 1-1/2 inches (9.5 mm x 38.1 mm) with vinyl seal and concealed attachment to shadecloth. Bevel top and bottom of hembar to smoothly travel up and down inside side channels. Extend shadeband and hembar into side channel as a single element where side channels are required.

**B. Manually Operated Hardware and Shade Brackets:**

1. Provide for regular and offset drive capacity (chain fall at front or rear of bracket) on all shade drive end brackets.
2. Provide shade hardware system that allows for removal of shade roller tube from brackets without removing hardware from opening.
3. Provide shade hardware that allows for removal and re-mounting of the shade band without having to remove shade tube, drive or operating support brackets.

4. Provide hardware for installation of a removable fascia, regular or reverse roll, which shall be installed without exposed fastening devices of any kind.
5. Provide shade hardware system that allows for a removable regular and / or reverse roll fascia(s) to be mounted continuously across two or more shade bands without requiring exposed fasteners of any kind;
6. Provide shade hardware system that allows for operation of multiple shadebands by a single chain (Multi-banded shades) operator subject to manufacturer's design criteria. Connectors shall be offset to assure alignment from the first to the last shade band.
7. Provide shade hardware system that allows multi-banded manually operated shades to be capable of smooth operation when the axis is offset a maximum of 6° on each side of the plane perpendicular to the radial line of the curve (12° total offset).
8. Provide positive mechanical engagement of drive mechanism to shade roller tube. Friction fit connections for drive mechanism to shade roller tube shall not be accepted.
9. Provide shade hardware constructed of minimum 1/8" (3.18 mm) thick cadmium plated steel or heavier as required to support 150% of the full weight of each shade.
10. Provide only Delrin engineered plastics by DuPont for all plastic components of the shade hardware. Styrene polyester and ABS based plastics are not acceptable.
11. Drive Bracket/Brake Assembly:
  - a. MechoShade Drive Bracket model 5 shall be fully integrated with all MechoShade Wide accessories and brackets, including but not limited to Fascia, Black Out channels center supports and connectors for multi-band shade operation etc.
  - b. M5 bracket shall use the standard 1/8 inch (3.175mm) steel plate for mounting and support of the assembly. The drive sprocket and brake assembly shall rotate and be supported on a welded 3/8 inch steel pin (9.525mm).
  - c. The brake means shall be an over running clutch design which shall disengage to 90% during the raising and lowering of a shade. The brake shall withstand a pull force of 50 lbs. (22kg) in the stopped position.
  - d. The braking (patent pending) means shall be applied to a oil impregnated hub on to which the brake system is mounted. The oil impregnated hub design includes an articulated brake assembly which assures smooth, non-jerky operation in raising and lowering the shades. The brake assembly is warranted for the life of the system, which is in itself warranted to be fit for the use intended for 10 years.
  - e. The entire MechoShade 5 assembly shall be fully mounted on the steel support bracket, and fully independent of the shade tube assembly, which may be removed and reinstalled with out effecting the roller shade limit adjustments.

C. Shade roller and shadecloth attachment:

1. Provide an extruded aluminum shade roller tube of diameter and wall thickness required to support shade fabric without (excessive) deflection. Roller tubes less than 1.55" in diameter are not acceptable. Tube shall have two asymmetrical channels for mounting of the shade band spline.
2. Provide for positive mechanical engagement with drive / brake mechanism.
3. Provide for positive mechanical attachment of shade band to roller tube without the use of adhesives, adhesive tape, staples or rivets. Two sided pressure sensitive adhesive tape shall not be acceptable. Shade bands stapled to roller tubes shall not be acceptable. A mounting method that does not readily allow the shade band to be removed from the shade tube while installed shall not be acceptable.
4. Attach shadebands to tube in such a way that removal and replacement of a shadeband can be accomplished without removing either the tube from the brackets or without removing shade brackets. Shadebands must be replaceable on site without removing shade tube or brackets.

D. Drive Chain: #10 Qualified stainless steel chain rated to 90 pound (41 kg) minimum breaking strength.

## ACCESSORIES

E. Regular Roll Fascia:

1. Continuous removable extruded aluminum fascia (Design Professional to select color from manufacturer's standards) that attaches to shade mounting brackets without the use of adhesives, magnetic strips or exposed fasteners.
2. Fascia shall be able to be installed across two or more shadebands in one piece.
3. Fully conceal brackets, shade roller and fabric on the tube.
4. Chain drive shall fall behind the bottom return edge of the fascia without requiring notching of the fascia.

**OR**

F. Regular Roll Fascia:

1. Provide continuous regular roll fascia fully concealing brackets, shade roller and fabric on the tube. Fit fascia tight to room darkening side channels when present. Chain drive to fall through slotted holes in the bottom return edge of the fascia. [Required for room darkening shades with side channels.]

**AND / OR**

G. Reverse Roll Fascia:

1. Provide continuous reverse roll fascia fully concealing shade roller and fabric on the tube.

**OR**

H. Shade Pockets for recessed mounting in Acoustical, Plaster or Drywall Ceilings:

**!!!SPECIFIER NOTE: COORDINATE INSTALLATION OF MATERIAL SUPPLIED UNDER THIS SECTION WITH APPROPRIATE SECTION ELSEWHERE IN PROJECT MANUAL!!!**

1. Provide extruded aluminum shade pocket with exposed flush mounted extruded aluminum removable closure panel to provide access to shades and an exposed flush mounted tile support(MechoShade 4123 pocket supplied in

manufacturer's standard painted finish) for acoustical tile or dry wall soffits and ceilings

**OR**

2. Provide extruded aluminum shade pocket with exposed flush mounted extruded aluminum removable closure panel to provide access to shades (MechoShade 4133 pocket supplied in manufacturer's standard painted finish).

**OR**

3. Provide formed steel shade pocket (sized to accommodate shades) with exposed flush mounted extruded aluminum removable closure panel (supplied in manufacturer's standard painted finish) to provide access to shades and an exposed tile support for acoustical tile or dry wall soffits and ceilings.

**OR**

4. Provide formed steel shade pocket (sized to accommodate shades) with exposed flush mounted extruded aluminum removable closure panel (supplied in manufacturer's standard painted finish) to provide access to shades, and an exposed flush mounted tile support for acoustical tile or drywall soffits or ceilings.

**OR**

5. Provide extruded aluminum pocket closure assembly(ies) for use with Drywall or other framed shade pocket construction as shown in the drawings. Closure panel shall be 2" wide **OR** 3" wide **OR** 5" wide **OR** custom width as indicated in the drawings.
- I. Room darkening light resistant side and / or sill channels: Extruded aluminum channels with polybond edge seals (Design Professional to select color from manufacturer's standards). Side and / or sill channels shall be mounted with concealed fasteners.

## 2.2 FABRICATION

- A. Fabricate units to completely fill existing openings from head to sill and jamb to jamb, unless specifically indicated otherwise. Comply with Manufacturer's edge clearance standards and recommendations.
- B. Fabricate shadecloth to hang flat without buckling or distortion. Fabricate with heat-sealed trimmed edges to hang straight without curling or raveling. Fabricate unguided shadecloth to roll true and straight without shifting sideways more than 1/8 inch in either direction per 8 feet of shade height due to warp distortion or weave design.
- C. Provide battens in non-railroaded shades as required by the Manufacturer to assure proper tracking and uniform rolling of the shadebands, in accordance with the manufacturer's published width x height shade fabrication guide and standards.
- D. For railroaded shadebands, provide seams or battens in railroaded multi-width shadebands as required by Manufacturer to meet Width:Height ratios and size requirements. Unless specified elsewhere, manufacturer's standard seam / batten placements are acceptable to Design Professional. If custom placement of seams / battens is required, coordinate these locations with design requirements.

**!!!SPECIFIER NOTE: PLEASE SPECIFY NON-STANDARD BATTEN PLACEMENT REQUIREMENTS HERE...ie: "Horizontal battens to align with horizontal window mullions."!!!**

- E. Provide batten pockets utilizing self-colored fabric front and back, RF welded into the shadecloth. Provide a self-colored opaque liner front and back to eliminate any see through of the batten pocket and shall not exceed 1-1/2 inches (38 mm) high and be totally opaque. A see-through moiré effect which occurs with multiple layers of transparent fabrics are not acceptable. Reinforce batten pockets using coil coated, roll formed spring steel to insure flatness of shadebands in accordance with manufacturer's standards. Concave formed profile of batten stiffeners to be compatible with diameter of shade roller tube.

### 2.3 FINISHES

- A. Aluminum Components: Design Professional shall select from Manufacturer's standard [PPG Duracron baked enamel colors] **OR** [Anodized aluminum finish in selected colors] **OR** [Powder coat in Manufacturer's standard RAL approved finishes].
- B. Steel Components: Cadmium-plated, satin-finished, or bonderized prior to painting with Manufacturer's standard baked-enamel finish.

## PART 3 EXECUTION

### 3.1. EXAMINATION

- A. Examine substrate and conditions for installation. Do not commence installation until conditions are satisfactory. Commencement of installation indicates acceptance of site conditions by Contractor. Notify the Design Professional upon inspection when the project conditions are unacceptable for shade installation. "Beginning of installation" means acceptance of substrate and project conditions.

### 3.2. INSTALLATION

- A. Install units to comply with the Manufacturer's instructions for the type of mounting and operation required. Provide units plumb, true, and securely anchored in place with recommended hardware and accessories to provide smooth operation without binding.
- B. Install units within the following tolerances:
  - 1. Maximum variation of gap at window opening perimeter: 1/4 inch, per 8 feet (+/- 1/8 inch) of shade height. [6.35 mm, per 2438 mm, +/- 3.2 mm]
  - 2. Maximum offset from level: 1/16 inch per 5 feet of shade width. [1.587 mm per 1524 mm]

### 3.3. ADJUSTING

- A. Adjust drive / brake mechanism of units for smooth operation. Adjust shade and shadecloth to hang flat without buckling or distortion. Replace any units or components which do not hang properly or operate smoothly.

### 3.4. CLEANING

- A. Touch up damaged finishes and repair minor damage in order to eliminate evidence of repair. Remove and replace work that cannot be satisfactorily repaired.
- B. Clean exposed surfaces, including metal and shadecloth, using non-abrasive materials and methods recommended by the Shadecloth Manufacturer. Remove and replace work which cannot be satisfactorily cleaned.

### 3.5. DEMONSTRATION

- A. Demonstrate operation method and instruct Owner's personnel in the proper operation and maintenance of the window shade systems.
- 3.6. SCHEDULES

END OF SECTION