

SECTION 12490 - INTERIOR ROLLER SHADES - MANUAL

PART 1 GENERAL

1.1 SUMMARY

A. SCOPE

- 1.) The following specifications detail the minimum performance and related criteria for a manually operated shade control system proposed for this project. Any deviations from this specification must be submitted in the format defined in section 2.1.
- 2.) Provide all manual and electronic shading systems, controls, and materials as specified in locations indicated on architectural plans including:
 - a.) Shade Fabric
 - b.) Mounting Conditions
 - c.) Control Operator
 - d.) Top Treatments and Extruded Aluminum or Steel Accessories
- 3.) Furnish and install all window shades, accessories, controls, and attaching hardware.

B. RELATED SECTIONS AND DOCUMENTS

- 1.) Section 06100-- Rough Carpentry; blocking for support of window shade brackets or pocket assemblies.
- 2.) Section 09256-- Substrate for window shade systems and installation of shade pockets, pocket closure, and/ or accessories supplied only under this section.
- 3.) Section 09511-- Acoustical Ceilings; installations of shade pockets, pocket closure, and/or accessories supplied only under this section.
- 4.) Drawings and general provision of the Contract, including General Conditions apply to this Section.

1.2 REFERENCES

A. MANUFACTURER

- 1.) Underwriters Laboratories Inc.
- 2.) Canadian Standards Association
- 3.) NOM Certification Mark
- 4.) American National Standards Institute
- 5.) Institute of Electrical and Electronic Engineers

B. FABRICS

- 1.) Flame-retardant fabrics must meet or exceed requirements of NFPA test #701.
- 2.) Fire – Provide shade fabrics tested in accordance with:
 - a.) 1989 NFPA 701 small scale Vertical Burn Test and rated "PASS."
 - b.) 1996 NFPA 701 small scale Vertical Burn (telephone booth test) and rated "PASS."

C. RESPONSIBILITY FOR WINDOW-TREATMENT SYSTEM

- 1.) The responsibility for the design, engineering, installation, and performance of window shade systems specified in this Section shall be assigned to a single manufacturer and their authorized dealers/installers.
- 2.) The General Contractor shall coordinate installation of the following items with the Window Shade contractor for all window treatment systems:
 - a.) Metal shade pockets or housings recessed into ceiling system or assembly.

1.3 SYSTEM DESCRIPTION

- A. Manual roller shade system shall provide manual control of window treatments.

1.4 SUBMITTALS

A. PRODUCT DATA

- 1.) Submit manufacturer's descriptive literature for each product type specified. Details shall include product brochures and technical documents indicating materials, finishes, construction, and mounting requirements. Also include installation, wiring, and operating instructions.

B. SHOP DRAWINGS

- 1.) Indicate structural mounting requirements and installation methods as well as relevant dimensions for each product type and mounting condition.
- 2.) Provide shade schedule coordinating room number, opening size(s), quantities and key to details.
- 3.) Provide the following project-specific information:
 - a.) Drawings indicating seam/ batten locations to aid Base Building contractor to coordinate work.
 - b.) Head, jamb, and sill details to aid general contractor to coordinate work.

C. SAMPLES

- 1.) Selection Samples:

a.) 8" X 10" (200 mm x 252mm) shade fabric swatches for initial fabric color selection from manufacturer's full range of available fabrics.

b.) Material samples for color and finish selection of controls.

D. TEST REPORTS, CERTIFICATES, AND DEMONSTRATION

- 1.) Current reports demonstrating compliance with references listed in Section 1.2 (References) are available upon request to verify specification requirements.
- 2.) Manufacturer shall make available to project design team and project owner a tour of manufacturing operations to evaluate manufacturing processes as identified in Source Quality Control Section of Part 2.
- 3.) For projects where onsite demonstration of verification samples and custom designs is impractical due to building construction schedule or shade fabric size, manufacturer shall make available requested verification samples at the manufacturing facility.

E. MANUFACTURER'S INSTRUCTIONS

- 1.) Installation, Programming, and Maintenance instructions to be included in product packaging.
- 2.) Installation, Programming, and Maintenance Instructions must be available on manufacturer's website.
- 3.) 24-Hour / 7-Day Technical support shall be available to aid with unforeseen installation difficulties.

1.5 QUALITY ASSURANCE

A. QUALIFICATIONS

- 1.) Manufacturer shall have component quality program in place to reduce defective levels to less than 100 PPM and provide documentation on request.
- 2.) Manufacturer shall have 15 years minimum experience manufacturing products comparable to those specified in this section.
- 3.) Manufacturer shall furnish all shading systems and electrical control equipment for a complete installation and single source responsibility of shading and lighting control where applicable.
- 4.) The manufacturer, subsidiary, or licensed agent shall be approved to supply the products specified and to honor any claims against the product presented in accordance with the warranty.
- 5.) Installer shall be qualified to install the specified products by prior experience, demonstrated performance, and acceptance of any requirement of the manufacturer, subsidiary of the manufacturer, or licensed agent.
- 6.) 24-Hour / 7-Day Technical support shall be available to troubleshoot system wiring and aid in system programming.

B. FIELD SAMPLES

- 1.) Install large size sample of selected fabric for final verification of color, weave, and density in window opening as directed by design professional.

1.6 DELIVERY, STORAGE, AND HANDLING

A. STORAGE AND PROTECTION

- 1.) Do not deliver items to the project until all concrete, masonry, plaster, painting and other wet work has been completed and is dry.
- 2.) Deliver shades to project in 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.
- 3.) Store materials in a dry, secure place. Protect from weather, surface contaminants, corrosion, construction traffic, and all other potential damage.

1.7 SCHEDULING

- A. Do not fabricate shades without obtaining field dimensions for each opening.
- B. Coordinate construction of surrounding conditions to allow for timely field dimension verification.
- C. Manufacturer's standard lead times apply. Reference submittal and schedule accordingly for project timeline.
- D. If required, manufacturer's field services require 10 business-days notice. The contractor shall provide the manufacturer with 10 business-days notice of the scheduled commissioning date.
- E. Pre-installation Meetings:
 - 1.) Before starting installation, conduct conference at Project Site. Comply with requirements in General Conditions.

1.8 WARRANTY

- A. Manufacturer to provide written limited warranty of not less than 8 years.
 - 1.) The limited warranty shall cover 100% of the parts and manufacturer's labor costs required over the first two years.
 - 2.) The limited warranty shall also entitle the end user to a credit against the purchase price upon return of defective goods for 8 years.
 - a.) 100% for years 1 and 2
 - b.) 50% for years 3, 4, and 5
 - c.) 25% for years 6, 7, and 8

- B. Warranty coverage shall begin on the date that the equipment is energized.
- C. In the event of a warranted product failure, the shade contractor will facilitate acquisition and delivery of all necessary components and services to the owner.

1.9 MAINTENANCE

A. EXTRA MATERIALS

- 1.) The manufacturer shall make available to the end user a method of ordering new equipment for expansions, replacement, or parts to be used as spares twenty-four hours a day, seven days a week.
- 2.) The manufacturer must make available new or remanufactured parts for a minimum period of ten years from the final date of substantial completion.

B. MAINTENANCE SERVICE

- 1.) The manufacturer shall offer to make available to the end user a method of ordering factory service, new or remanufactured replacement parts, and a service contract that extends the factory-limited warranty from two years to five years.
- 2.) Manufacturer shall allow end user to purchase extended warranty services on an annual basis for a minimum period of ten years from the date of final completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. To establish the standard of quality, design, and function desired, drawings and specifications are based on products by:

Lutron Shading Solutions by VIMCO or approved equal.
11520 Sun Shade Lane
Ashland, Virginia 23005
United States of America

Telephone 1:	1 (800) 446-1503
Telephone 2:	1 (804) 752-3300
Fax:	1 (804) 752-3366
24/7 Technical Support:	1 (800) 523-9466
Website:	http://www.vimco.com

2.2 MANUAL SHADE SYSTEMS

A. DRIVE MECHANISM / OPERATOR

1.) GEAR ASSEMBLY MANUAL SHADE SYSTEM

a.) General

- i. Gear Operator Roller Shades shall consist of hardened steel worm and wheel gears.
- ii. Gears shall be permanently lubricated and sealed in a waterproof Zamac die cast housing to produce a 5:1 rotation ratio and a shade lift capacity of approximately 21 pounds. Gear shall never need adjustment.
- iii. Gear shall be activated by a removable pole (gear crankshaft) with collapsible hand crank.
- iv. Gear shall be bidirectional and must be able to be mounted at either end of the roller.
- v. Adjustable mounting and pass-through drive shaft shall allow easy positioning of the gear as well as the attachment of the square shaft for the drive.

b.) Gear Crankshaft

- i. Shall be a plastic-coated extruded aluminum tubing with a collapsible chrome plated brass hinged handle at the bottom, and a bell shaped slotted nylon connector housing at the top in order to interlocks with the gear drive shaft.
- ii. A nylon crankshaft clip is available to hold the crankshaft to the wall.

c.) Gear Roller Tube

- i. Shall be 1.75" diameter .04" galvanized steel tubing.
- ii. Fabric shall be connected to tube with double-sided adhesive strip applied for exact and firm mounting of the fabric and for easy adjustment of fabric to prevent telescoping.
 - a. A minimum of one turn of fabric will be placed on the roller before the working section of fabric starts to protect the fabric and smooth out the starting seam.

d.) Gear Idle End and Drive Caps

- i. Shall be injection-molded nylon.
- ii. Shall have a steel pin in the idler end.
- iii. Shall have a square cavity to receive the steel drive shaft at the gear end.

e.) Gear Mounting Brackets

- i. Shall be .125" thick aluminum.

- ii. Shall be universally applicable for mounting inside, outside or to the ceiling of the opening.
- iii. Shall allow the gear to mount on either the right or left side of the roller.

B. FABRICS

1.) GENERAL

- a.) Where applicable, shade fabric will be ultrasonically cut and friction sealed to minimize fraying.
 - b.) Woven yarn fabrics will be interlocking and heat-treated so that all material is securely bonded.
 - c.) All material options to be offered in a variety of colors.
- 2.) Basis of Design Product: the design for the fabric is based on the product named on the drawings.

C. TRIM

1.) TOP TREATMENTS

- a.) Fascia Panel shall be installed to conceal the roller tube and mounting hardware. Fascia shall hook onto the top of the bracket and snap in place, remaining firmly attached. Either three or four inch high fascia panel shall be made of .075" extruded aluminum and shall be painted with a high quality baked enamel finish. 3" fascia may only be used with V8 or V16 shades.
 - i. Fascia Mounting Brackets shall support both the roller tube and the fascia panel and be capable of mounting inside, outside or to the ceiling, with the operator on either the right or left side of the roller. All fascia brackets will be made of .075" zinc coated steel.
 - a. Brackets are designed to snap into the Top/Back Cover
 - ii. Top/Back Cover shall be .085" extruded aluminum with baked enamel finish that fits over fascia brackets and completely covers the top and back sides of the roller shade. 4" Top/Back cover has a channel, which allows the fascia interlock.
- b.) For systems requiring 1-Shade Pocket, the shade Pocket shall be 4.75" wide by 5" deep, 0.120" extruded aluminum U-shaped enclosure with a 3" wide access flap for use when the shade is to be recessed into the ceiling or completely concealed.
 - i. Pocket to be available in custom colors. Color to be selected by Architect.

- ii. Custom shade pocket sizes shall be available in bent aluminum with wall thickness of 0.62.”

2.) SIDE TREATMENTS

- a.) Side Channels shall be one piece 2.5" deep by 1.032" wide, .062" extruded aluminum with "T" slots to receive wool-pile light seal on both leading edges. Side channels shall be back paneled to interlock for mulled shades.

3.) BOTTOM TREATMENTS

- a.) Hem Bar

- i. Standard Hem Bar shall be a 1" wide by .1875" thick extruded aluminum bar enclosed in a thermally-sealed pocket across the bottom of the shading fabric.

2.3 FABRICATION

- A. Critical shade measurements shall be accurate to within $\pm 1/16$ " of specified measurements.

2.4 FINISHES

A. METAL FINISHES

- 1.) Colors and Finishes: as selected by Architect.
- 2.) Aluminum extrusions to be custom colors as selected by Architect.

2.5 SOURCE QUALITY CONTROL

- A. Shade Fabric panels shall be 100% visually inspected for defects using a light box integrated into the manufacturing line.
- B. 100% visual inspections shall be performed on each shade seam and hem bar welds and compared to strict aesthetic standards.
- C. Shade seam weld strength process shall be tested on a daily basis to ensure controlled consistency of weld quality.
- D. Shade panels shall be 100% checked for square ($\pm 1/16$ "
- E. Shade panels shall be 100% visually inspected to ensure there are no frayed edges or defects in the cut.
- F. Finished products shall be 100% End of Line tested to ensure quality and performance of finished product.
- G. All lineals shall be 100% visually inspected and measure checked after the cutting operation.
- H. 100% outgoing audits shall be performed to ensure:

- 1.) All shade hardware kits contain correct content.
- 2.) Each shade is manufactured with correct components.
- 3.) The system is packaged properly.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Refuse delivery of any damaged packaging.
- B. Ensure all parts match specified bill of materials and purchase order.

3.2 INSTALLATION

- A. Install shades in windows level and plumb to provide smooth operation.
- B. Install in accordance with manufacturer's product data and approved shop drawings.
- C. Field measurement and installation shall be performed by a Factory-Trained technician.

3.3 FIELD QUALITY CONTROL

A. SITE TESTS / INSPECTION

- 1.) 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.

B. MANUFACTURERS' TECHNICAL SUPPORT SERVICES

- 1.) Manufacturer shall maintain a 24-hour, 7 days a week technical support center.
- 2.) Manufacturer's website shall contain product data sheets, installation, programming, and maintenance instructions.

3.4 ADJUSTING

- A. Adjust fabric on tube using shims to prevent telescoping of fabric over time.

3.5 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 shade fabric, using non-abrasive materials and methods recommended by the Shade Fabric Manufacturer. Remove and replace work that cannot be satisfactorily cleaned.

3.6 DEMONSTRATION

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

3.7 SCHEDULES

- A. As indicated on the Drawings

END OF SECTION 12490