

**SECTION 122513
WINDOW ROLLER SHADES**

**** NOTE TO SPECIFIER ** MECHO; INTERIOR MANUALLY-OPERATED AND ELECTRICALLY-OPERATED ROLLER SHADES AND CONTROL SYSTEMS.**

PART 1 GENERAL

2.01 SECTION INCLUDES

- A. Roller shades, manual operation and accessories.
- B. Shade fabric.

2.02 REFERENCE STANDARDS

- A. ANSI - American National Standards Institute; N/A.
- B. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 2015, with Editorial Revision (2021).
- C. C2C (DIR) - C2C Certified Products Registry; Cradle to Cradle Products Innovation Institute; Current Edition.
- D. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films; 2023, with Errata.
- E. UL (GGG) - GREENGUARD Gold Certified Products; Current Edition.
- F. WCMA A100.1 - Standard for Safety of Window Covering Products; 2022.

2.03 RELATED SECTIONS

- A. Section 06100 - Rough Carpentry: Wood blocking and grounds for mounting roller shades and accessories.
- B. Section 09260 - Gypsum Board Assemblies: Coordination with gypsum board assemblies for installation of shade pockets, closures and related accessories.
- C. Section 09510 - Acoustical Ceilings: Coordination with acoustical ceiling systems for installation of shade pockets, closures and related accessories.

2.04 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM G21 and E 2180 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
- B. Cradle to Cradle Products Innovation Institute (C2C):
 - 1. C2C (DIR)- C2C Certified Products Registry.
- C. National Fire Protection Association (NFPA):
 - 1. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.
- D. Window Covering Manufacturers Association (WCMA):
 - 1. ANSI/WCMA A100.1-2022- Safety of Window Covering Products; 2022.

2.05 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: One week prior to commencing work related to this section. Require attendance of all affected installers.
- B. Sequencing:
 - 1. Do not fabricate shades until field dimensions for each opening have been taken with finished conditions in place. "Hold to" dimensions are not acceptable.
 - 2. Do not install shades until final surface finishes and painting are complete.

2.06 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

- B. Bid Submittal: Information Required with Submittal of Bid: In order to evaluate proposals for integrated lighting control and window shade systems, the Architect requires the following information be submitted prior to the award of the system.
 - 1. Bid proposal shall be accompanied with a document that notes all deviations from these specifications on a line-by-line basis.
- C. Product Data: Manufacturer's catalog pages and data sheets for products specified including materials, finishes, dimensions, profiles, mountings, and accessories.
 - 1. Preparation instructions and recommendations.
 - 2. Styles, material descriptions, dimensions of individual components, profiles, features, finishes, accessories, and operating instructions.
 - 3. Storage and handling requirements and recommendations.
 - 4. Mounting details and installation methods.
 - 5. Manufacturer's Instructions: Include storage, handling, protection, examination, preparation, and installation.
 - 6. Project Record Documents: Record actual locations of control system components and show interconnecting wiring.
 - 7. Operation and Maintenance Data: Component list with part numbers, and operation and maintenance instructions.
- D. Shop Drawings: Plans, elevations, sections, product details, installation details, operational clearances, and relationship to adjacent work.
 - 1. Prepare shop drawings on AutoCad or MicroStation format using base sheets provided electronically by the Architect.
 - 2. Provide location plan showing all manual shade control locations. Cross-reference furniture plans for optimal positioning of chains.
 - 3. Provide elevation drawings showing shade band layout. Indicate any necessary seam or batten locations, and align with horizontal mullions where possible.
- E. Window Treatment Schedule: For all roller shades. Use same room designations as indicated on the Drawings and include opening sizes and key to typical mounting details.
- F. Verification Samples: For each finish product specified, one complete set of shade components, unassembled, demonstrating compliance with specified requirements.
 - 1. Shadecloth Sample: Mark face of material to indicate interior faces.
 - a. Test reports indicating compliance with specified fabric properties.
 - b. Verification Samples: 6 inches (150 mm) square, representing actual materials, color and pattern.
- G. Maintenance Data: Bill of materials for all components with part numbers. Methods for maintaining roller shades, precautions regarding cleaning materials and methods, instructions for operating hardware and controls.
- H. Warranty: Provide manufacturer's warranty documents as specified in this Section.

2.07 QUALITY ASSURANCE

- A. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.
- B. Manufacturer Qualifications: Obtain roller shades system through one source from a single manufacturer with a minimum of ten years experience and minimum of five projects of similar scope and size in manufacturing products comparable to those specified in this section.
- C. Installer for Roller Shade System - Qualifications: Installer trained and certified by the manufacturer with a minimum of ten years experience in installing products comparable to those specified in this section.
 - 1. Requirements for Roller Shade Installer/Contractor:
 - a. Roller Shade Hardware, shade fabric and all related controls shall be furnished and installed as a complete assembly.

- D. Product Listing Organization Qualifications: Organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.
- E. Fire-Test-Response Characteristics: Passes NFPA 701 small and large-scale vertical burn. Materials tested shall be identical to products proposed for use.
- F. ShadeCloth Anti-Microbial Characteristics: 'No Growth' per ASTM G21 results for fungi ATCC9642, ATCC9644 and ATCC9645, and E2180.
- G. ShadeCloth Cleanability and Disinfecting: ShadeCloth must meet cleanability and disinfecting requirements via 3rd party testing to comply with ((BIFMA HCF ((8)).1))-2014 standards using chemical solutions compliant with EPA guidelines for use against COVID-19.
- H. Environmental Certification: Submit written certification from the manufacturer, including third party evaluation, recycling characteristics, and perpetual use certification as specified. Initial submittals, which do not include the Environmental Certification will be rejected. Materials that are simply 'PVC free' without identifying their inputs shall not qualify as meeting the intent of this specification and shall be rejected.
- I. Third Party Evaluation: Provide documentation stating the shade cloth has undergone third party evaluation for all chemical inputs, down to a scale of 100 parts per million, that have been evaluated for human and environmental safety. Identify any and all inputs, which are known to be carcinogenic, mutagenic, teratogenic, reproductively toxic, or endocrine disrupting. Also identify items that are toxic to aquatic systems, contain heavy metals, or organohalogens. The material shall contain no inputs that are known problems to human or environmental health per the above major criteria, except for an input that is required to meet local fire codes.
- J. Recycling Characteristics: Provide documentation that the shade cloth can, and is part of a closed loop of perpetual use and not be required to be down cycled, incinerated or otherwise thrown away. Scrap material can be sent back to the mill for reprocessing and recycling into the same quality yarn and woven into new material, without down cycling. Certify that this process is currently underway and will be utilized for this project.
- K. Perpetual Use Certification: Certify that at the end of the useful life of the shade cloth, that the material can be sent back to the manufacturer for recapture as part of a closed loop of perpetual use and that the material can and will be reconstituted into new yarn, for weaving into new shade cloth. Provide information on each shade band indicating that the shade band can be sent back to the manufacturer for this purpose.

2.08 MOCK-UP

- A. Provide a mock-up of one roller shade assembly for evaluation of mounting, appearance and accessories.
 - 1. Locate mock-up in window designated by Architect.
 - 2. Mockup Size: Full size.
 - 3. Mockup Size (WxH): 3 x 3 feet (0.94 x 0.94 m) minimum.
 - 4. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
 - 5. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
 - 6. Do not proceed with remaining work until, mock-up is accepted by Architect.
 - 7. Retain mock-up during construction as a standard for comparison with completed work.
 - 8. Do not alter or remove mock-up until work is completed or removal is authorized.
 - 9. Full-sized mock-up may become part of the final installation.
 - 10. Full-sized mock-up will become the property of the Owner to be used for spare parts.

2.09 DELIVERY, STORAGE, AND HANDLING

- A. Deliver in factory-labeled packages, marked with manufacturer and product name, fire-test-response characteristics, and location of installation using same room designations indicated on Drawings and in Window Treatment Schedule.
- B. Store and handle products per manufacturer's recommendations.

2.10 PROJECT CONDITIONS

- A. Environmental Limitations: Install roller shades after finish work including painting is complete and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

2.11 WARRANTY

- A. Roller Shade Hardware and Chain Warranty: Manufacturer's standard non-depreciating, transferrable warranty for interior shading.
 - 1. Shade Hardware – 10 years unless otherwise indicated:
 - a. Mecho/5 and Mecho/5x with ThermoVeil, EuroTwill, Soho, Equinox, Midnite, Chelsea, or Classic Blackout shade fabric: 25-years.
 - 2. Standard Shadecloth: Manufacturer's standard 25-year warranty.
 - 3. Roller Shade Installation: One year from date of Substantial Completion, not including scaffolding, lifts or other means to reach inaccessible areas, which are deemed owners responsibility.

PART 2 PRODUCTS**3.01 MANUFACTURERS**

- A. Acceptable Manufacturer for Window Shade Control System as basis of design, performance and warranty: Mecho, which is located at: 42-03 35th St.; Long Island City, NY 11101; ASD Tel: 718-729-2020; Fax: 718-729-2941; Email: marketing@mechoshade.com; Web: www.mechoshade.com. For your local Mecho rep: <https://www.mechoshade.com/find-a-rep/>
- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

3.02 APPLICATIONS/SCOPE

- A. Roller Shade Schedule:
 - 1. Shade Type 1: Manual operating, chain drive, sunscreen single roller shades and related mounting systems and accessories as indicated on drawings.
 - 2. CPSC Compliance: All manually operated window coverings with accessible cords, chains, continuous loop cords, etc. shall meet all current Federally mandated CPSC (Consumer Products Safety Commission) safety standards at time of manufacturing. Depending on the product type, additional hardware components may be required and added to meet new regulatory compliant anti-ligature requirements.
 - 3. WCMA Compliance: Chain tensioning device complying with ANSI/WCMA A100.1-2022 manufacuted on every manual roller shade.
 - a. ROLLER SHADES, MANUAL OPERATION AND ACCESSORIES
- B. Shade System; General:
 - 1. Components capable of being removed or adjusted without removing mounted shade brackets, or cassette support channel.
 - 2. Smoothly operation raising or lowering shades.
 - 3. Cradle-to-Cradle certified and listed in C2C (DIR).
- C. Basis of Design: Mecho/5 System as manufactured by Mecho. (Shade Type 1)
 - 1. Description: Manually operated fabric window shades.
 - a. Shade Type: Single Roller.
 - b. Universal drive capability to offset drive chain for reverse or regular roll shades.
 - c. Drop Position: Regular roll.
 - d. Mounting: Srface Mount.
 - e. Fabric: As indicated under Shade Fabric article.
 - 2. Brackets and Mounting Hardware: As recommended by manufacturer for mounting indicated and to accommodate shade fabric roll-up size and weight.
 - a. Material: Steel, 1/8 inch (3 mm) thick.
 - 3. Roller Tubes:
 - a. Material: Extruded aluminum.

- b. Size: As recommended by manufacturer; selected for suitability for installation conditions, span, and weight of shades.
 - c. Fabric Attachment: Utilize extruded channel in tube to accept vinyl spline welded to fabric edge. Shade band to be removable and replaceable without removing roller tube from brackets or inserting spline from the side of the roller tube.
 - d. Roller tubes to be capable of being removed and reinstalled without affecting roller shade limit adjustments.
- 4. Hembars: Designed to maintain bottom of shade straight and flat.
 - a. Style: Full wrap fabric covered bottom bar, flat profile with heat sealed closed ends.
- 5. Clutch Operator: Manufacturer's standard material and design integrated with bracket/brake assembly.
 - a. Heavy-duty, 1/8" steel mounting bracket and integrated steel brake, clutch and sprocket assembly rigidly affix the shade support and user control to the building structure fully independent of the roller tube components.
 - b. Permanently lubricated maintenance-free brake assembly employs an oil-impregnated steel hub with wrapped spring clutch.
 - c. Brake must withstand minimum pull force of 50 pounds (22.7 kg) in the stopped position.
 - d. Direct drive clutch requires no interstitial gear stages or plastic parts between the building structure and clutch ensuring reliable operation across the full range of shade sizes.
 - e. Maximum shade hanging weight of 18 pounds (8.2 kg).
- 6. Drive Chain: Continuous loop stainless steel beaded ball chain, 100 pound (45 kg) minimum breaking strength. Provide upper and lower limit stops.
 - a. Chain Tensioner: Chain tensioning device complying with ANSI/WCMA A100.1-2022.
 - b. Limit stops: Bead stops affixed to the chain maintain consistent shadeband alignment at the top and bottom of shade travel across multiple shades, and help prevent shade damage resulting from unmanaged user control.
- 7. Accessories:
 - a. Fascia: Removable extruded aluminum fascia, size as required to conceal shade mounting, attachable to brackets without exposed fasteners.
 - 1) Finish: Baked enamel.
 - (a) Color: White.
 - 2) Can be installed across two or more shade bands in one piece.
 - 3) Single Fascia: Accommodate regular roll shades.
 - b. Room-Darkening Channels: Extruded aluminum side and center channels with brush pile edge seals, SnapLoc mounting base, and concealed fasteners. Channels to accept one-piece exposed blackout hembar to assure side light control and sill light control.

3.03 ROLLER SHADE FABRICATION

- A. Field measure finished openings prior to ordering or fabrication.
- B. Dimensional Tolerances: Fabricate shades to fit openings within specified tolerances.
 - 1. Vertical Dimensions: Fill Opening from Head to Sill: 1/2 inch (13 mm) space between bottom bar and window sill.
 - 2. Horizontal Dimensions: Outside mounting.
 - a. Cover window frames, trim, and casings completely.
- C. Openings Requiring Continuous Multiple Shade Units with Separate Rollers: Locate roller joints at window mullion centers; butt rollers end-to-end.

3.04 SHADE FABRIC

- A. Basis of Design: Shade fabric as manufactured by MechoShade Systems LLC.
 - 1. Solar Shadecloths:

- a. Fabric: Classic Blackout: 0700 series. Opaque. Vinyl coated fabric blackout material same color reverse side (for exterior).
 - 1) Low-Emitting Material Certification: Greenguard Gold certified and listed in UL (GGG).
 - 2) Environmental Product Declaration (EPD): Published disclosure of product's environmental impacts based on a full Life Cycle Assessment (LCA). Manufacturer must have EPD certification by independent 3rd party evaluation service.
- b. Color: Selected from manufacturer's standard colors.
2. Performance Requirements:
 - a. Flammability per NFPA 701: Pass. Large or small scale test.
 - b. Fungal Resistance: No growth when tested per ASTM G21.
 - c. Cleanability and Disinfecting: ShadeCloth must meet cleanability and disinfecting requirements via 3rd party testing to comply with ((BIFMA HCF ((8)).1))-2014 standards using chemical solutions compliant with EPA guidelines for use against COVID-19.
3. Fabrication:
 - a. Fabric Orientation: Railroaded, fabric is turned 90 degrees off the roll.
 - b. Battens: Manufacturer's standard material, full width of shade, and enclosed in welded shade fabric pocket; locate as indicated on drawings.
 - c. Seams for Railroaded Fabric: Manufacturer's standard seam; locate as indicated on drawings.
 - d. Welded Zipper Edge: Full height on both sides of fabric ensuring smooth operation within ShadeLoc channels.

PART 3 EXECUTION

4.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Start of installation shall be considered acceptance of substrates.

4.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using methods recommended by manufacturer for achieving best result for substrate under the project conditions.
- C. Coordinate with window installation and placement of concealed blocking to support shades.

4.03 INSTALLATION

- A. Contractor Furnish and Install Responsibilities:
 1. Window Covering Contractor (WC) shall provide an on site, Project Manager, and shall be present for all related jobsite scheduling meetings.
 2. WC shall supervise the roller shade installation, and setting of intermediate stops of all shades.
 3. WC shall be responsible for field inspection on an area-by- area and floor-by-floor basis during construction to confirm proper mounting conditions per approved shop drawings.
 4. Verification of Conditions: examine the areas to receive the work and the conditions under which the work would be performed and notify General Contractor and Owner of conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected. Commencement of installation shall constitute acceptance of substrate conditions by the installer.
 5. WC shall provide accurate to 0.0625" inch (1.5875mm); field measurements for custom shade fabrication on the Roller Shades manufacturers input forms.

6. WC Installer shall install roller shades level, plumb, square, and true according to manufacturer's written instructions, and as specified here in. Blocking for roller shades installed under the contract of the interior General Contractor shall be installed plumb, level, and fitted to window mullion as per interior architect's design documents and in accordance with industry standard tolerances. The horizontal surface of the shade pocket shall not be out-of-level more than 0.625" (15.875mm) over 20 linear feet (6.096 meters)
7. Shades shall be located so the shade band is not closer than 2 inches (50 mm) to the interior face of the glass. Allow proper clearances for window operation hardware.
8. Adjust, align and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.
9. Installer shall set Upper and Lower limits of all manual shade bands, and assure alignment in accordance with the above requirements.
10. Clean roller shade surfaces after installation, according to manufacturer's written instructions.
11. WC shall train Owner's maintenance personnel to adjust, operate and maintain roller shade systems.
 - a. Use operation and maintenance manual as a reference, supplemented with additional training materials as required.

4.04 PROTECTION AND CLEANING

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.
 1. Clean soiled shades and exposed components as recommended by manufacturer.
 2. Replace shades that cannot be cleaned to "like new" condition.

END OF SECTION