**Section 12 24 13**

**PART I GENERAL**

**1.01 General Provisions**

 A. Drawings and General Provisions of the Contract, including General and

 Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

 B. Carefully review and examine all other Contract Documents for requirements therein

 affecting the work of this Section. Furthermore, coordinate and sequence the work of

 this Section with all other trades affected.

**1.02 Summary**

 A. Furnish and install:

 1. Fabric roller shades.

 2. Operating and installation hardware.

 3. New manually-operated fabric roller shades at all designated locations.

**1.03 Related Work**

 A. Examine Contract Documents for requirements that affect the work of this Section.

 Other Specifications Sections that directly relate to work in this Section include, but

 are not limited to:

 1. Division 6 Section Rough Carpentry.

 2. Division 6 Section Finish Carpentry.

 3. Division 8 Sections Doors & Windows.

 4. Division 9 Sections Gypsum Board & Acoustical Ceilings

**1.04 References**

* + 1. ASTM A 228 - Standard Specification for Steel Wire, Music Spring Quality.
		2. ASTM A 666 Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
		3. ASTM A 1008 - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardened.
		4. ASTM A 1010 - Standard Specification for Higher-Strength Martensitic Stainless Steel Plate, Sheet and Strip.
		5. ASTM G 21- Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
		6. ASTM G 22 - Standard Practice for Determining Resistance of Plastics to Bacteria.
		7. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.
		8. California Administrative Code Title 19
		9. New York State Uniform Fire Prevention and Building Code
		10. Greengard Certified Low Emitting Interior Products.
		11. ANSI/WCMA A100.1-2012 - American National Standard for Safety of Corded Window Covering Products.
		12. Cradle to Cradle Eligible Shade Fabrics 3.1

**1.05 Submittals**

 A. Fabricator / Dealer to submit under provisions of Division 1 Section “Submittal

 Procedures”:

 1. Product Data

 2. Mounting details and installation methods

 3. Approval drawings

 4. Window Treatment Schedule

 5. Shade cloth selection samples

 6. Maintenance data

**1.06 Quality Assurance**

 A. Manufacturer Qualifications: Obtain roller shades through one source from a single

 manufacturer with a minimum of ten (10) years’ experience in manufacturing products

 comparable to those specified in this Section.

 B. Installer Qualifications: Installer certified by the manufacturer with a minimum

 of five (5) years’ experience in installing products comparable to those specified

 in this Section.

**1.07 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**.08 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.

**1.09 Warranty**

 A. Lifetime Limited Warranty on hardware. Fabrics warranted for 10 years minimum.

 Specific product warranties available from manufacturer or its authorized fabricator /

 dealer.

**PART II PRODUCTS**

**2.01 Manufacturer**

 A. Subject to compliance with the requirements specified herein, the following

 manufacturer offering component products is to be incorporated into the work:

1. Shades by Matiss 1148 US 22 Mountainside NJ 07092 T.800.493.2040 info@shadesbymatiss.com, www.shadesbymatiss.com
2. Elena Vengland, Business Development
3. Email: elena@shadesbymatiss.com

 2. Substitutions – No substitutions allowed.

**2.02 Roller Shade Components**

A. Control System: Pulley clutch operating system of self-lubricating, uv stabilized

 fiberglass reinforced nylon construction and tempered high carbon steel internal

 springs, designed for smooth, trouble-free operation, precise control, and uniform

 aesthetics. Adjustment-free continuous #10 qualified stainless steel ball bead chain,

 or nickel-plated brass ball bead chain~~.~~

 For motorized spec, see “Rollease Acmeda S45 Motorized Roller Window Shades”.

 B. Spring-loaded pin end: Uv stabilized, self-lubricating nylon outside sleeve and center

 spring-loaded shaft providing bearing surfaces on which the roller tube rides ensuring smooth,

 wear-resistant operation and ease of installation. 100-pound capacity.

 C. Mounting Hardware: Manufacturer’s standard zinc plated or powder-coated, cold-rolled

 steel universal brackets. UniversalDual shade brackets available for two-shade applications.

 “SafetyHold3” or “Chainhold” chain tensioner as specified to comply with

 ANSI/WCMA.A100.1.

 D. Roller Tube: Extruded aluminum shade roller tube of uniform diameter and varying

 wall thickness required (for uniform aesthetic) to support shade fabric without excessive

 deflection, with engineered wall & ribs to lock the clutch and idle end plug into place, providing

 strength & durability. Extruded tube parameters to be determined by fabricator for

 each shade’s size, weight, and fabric requirement.

 E. Fabric Attachment to Tube: Provide for positive mechanical attachment of fabric to

 roller tube via **either**:

 LSE (Low Stress Energy) double-sided adhesive tape to secure the fabric without having

 to remove shade roller from shade brackets. Adhesive attachment affords minor lateral

 adjustments to edge clearance dimensions. Fabric wrap of 2 ½ to 3 times the circumference

 of the roller tube required for proper tension of fabric-to-tube.

 Or, Spline attachment - shall consist of a PVC spline heat-welded to the shade fabric and

 inserted into a channel on the roller tube. The spline system allows for adjustability on-site

 and ease in changing fabric panels in the field.

 Or, Hook Tube attachment – Must allow for easy removal of shade band without removing

 roller tube. System must allow top of shade panel to drop below the shade tube/ fascia

 bottom/ Cassette bottom for easy removal of shade band. (Hook style roller tube required).

 F. Hem Pockets and Hem Weights:

 1. Fabric hem pocket with RF-welded seams (including welded ends) and extruded

 aluminum concealed hem weight. Hem weights shall be of appropriate size and

 weight for shade band and shall be continuous inside the sealed hem pocket.

 Hem pocket construction and hem weight per foot shall be consistent for all shades

 within one room.

1. Exposed aluminum extruded hem bar, of manufacturer’s standard configurations, with coordinating end caps. Color / finish as selected by Architect.

Specify Standard oval, Round, F56, D30, or F4115 Heavy Duty. F56, D30, and F4115 have bottom extrusion feature to add light blocking brush or bubble seal for blocking

light against the sill., D30 has optional rear feature for back bumper to protect

window surfaces from rubbing.

 G. Enclosures:

 1. Fascia – “L”-shaped snap-on aluminum extrusion, if required, to conceal

 brackets, roller tube, fabric, and operating system. Bracket end covers available

 for exposed mounting brackets.

 Finish color as selected by architect from manufacturer’s full range.

1. Aluminum Pocket – three-sided aluminum extrusion to conceal brackets, roller

 tube, fabric, and operating system, if required, above ceiling line or for recessed

 installation. Removable extruded aluminum bottom closure panel available.

 Finish color as selected by architect from manufacturer’s full range.

1. Construction Pocket – “I” Clip or “L” clip to be used for attaching bottom closure to

pockets that are an integral part of the building. “L” clip provides overlapping border

for drop ceilings.

 H. Blackout Channels: For maximum light blockage and energy savings, Extruded aluminum

 channels for use with blackout fabrics, if required, to eliminate light infiltration at fabric

 side or bottom clearances to jambs and/or sills.

I. Wire Guided Mount. Top and bottom anchors for 1.2mm steel wire guide cables. Must have tension adjustment and integral wire guides in hem bar end caps. Must be zinc plated or stainless brackets to resist corrosion.

J. Shade Cloth Fabric: Inherently anti-static, flame retardant, fade and stain resistant, light filtering, room darkening, or blackout fabrics as selected by the architect from Rollease Acmeda, Texstyle USA, Verosol, or Almedahls Solar Control and Shade Color from available contract colors. <http://www.rolleaseacmeda.com/us/products/fabrics>

1. **Alkenz 3000 Net Solar Control Fabric distributed by Texstyle USA**
	1. Translucent
	2. Solar Reflection: 5% to 67% - color dependent –Charcoal to White
	3. 25% polyester, 75% PVC – odor free.
	4. Openness factor 1% to 10%.
	5. Weight 11.36 to 16.7 oz. per sq. yd.
2. **Alkenz 4000 Net Solar Control Fabric distributed by Texstyle USA**
	1. Translucent
	2. Solar Reflection: 5% to 67% - color dependent –Charcoal to White
	3. 25% polyester, 75% PVC – odor free.
	4. Openness factor 1% to 10%.
	5. Weight 11.36 to 16.7 oz. per sq. yd.

 **3. Alkenz HT Solar Control Fabric** **distributed by Texstyle USA**

 a. Translucent

 b. Solar Reflection: 5% to 67% - color dependent –Charcoal to White

 c. 25% polyester, 75% PVC – odor free.

 d. Openness factor 1% to 10%.

 e. Weight 11.36 to 16.7 oz. per sq. yd.

 **4. Alkenz RR Solar Control Fabric distributed by Texstyle USA**

 a. Translucent

 b. Solar Reflection: 5% to 67% - color dependent –Charcoal to White

 c. 25% polyester, 75% PVC – odor free.

 d. Openness factor 1% to 10%.

 e. Weight 11.36 to 16.7 oz. per sq. yd.

 **5. SilverScreen Solar Control Fabric by Verosol**

 a. Fully aluminized backing

 b. Solar reflection: 76% to 82%

 c. PVC-coated fiberglass

 d. Openness factor: 2% or 4%

 e. Light transmission: 3% to 6%

 f. Weight: 11.8 oz. per sq. yd.

 **6. EnviroScreen Solar Control Fabric by Verosol**

 a. Fully aluminized backing

 b. Solar reflection: 74%

 c. 100% polyester, PVC free, Cradle to Cradle certified (3.1)

 d. Openness Factor: 2%

 e. Light transmission: 2% to 4%

 f. Weight: 7.4 Oz. per sq. yd.

 **7. Omnia Solar Control Fabric by Verosol**

a. Fully aluminized backing

 b. Solar reflection: 72-74%

 c. PVC coated polyester: 25% fiberglass and 75% PVC

 d. Openness Factor: 3%

 e. Light transmission: 5% to 6%

 f. Weight: 15.1 Oz. per sq. yd.

 **8. Mesa Opaque Blackout Fabric distributed by Texstyle USA**

 a. Light Blocking

 b. 100% Polyester with acrylic backing

 c. Weight: 11.8 oz. / sq. yd.

 **9. Tempe Opaque Blackout Fabric distributed by Texstyle USA**

 a. Light Blocking

 b. 100% Polyester with acrylic backing

 c. Weight: 11.8 oz. / sq. yd.

 **10. Ambient PVC Free Fabric distributed by Texstyle USA**

 a. Openness factor: 5%

 b. 100% polyester

 c. C2C eligible fabric

 **11. Anzio Translucent Light Filtering Fabric by Almedahls**

 a. Translucent

 b. 100% polyester

 c. Weight: ~ 11 oz. / sq. yd.

**PART III EXECUTION**

**3.01 Examination**

 A. Do not begin installation until substrates have been properly prepared.

 B. If substrate preparation is the responsibility of another trade, notify Contractor /

 Architect of unsatisfactory preparation before proceeding.

**3.02 Preparation**

 A. Clean surfaces thoroughly prior to installation.

 B. Prepare surfaces using the methods recommended by the fabricator / dealer for

 achieving the best result for the substrate under the project conditions.

**3.03 Installation**

 A. Install roller shades square, plumb, level and true according to manufacturer’s written

 instructions. Allow proper clearances for window operation hardware.

 B. Secure in place with flush countersunk fasteners.

 C. Installation Tolerances:

 1. Maximum Variation of Gap at Window Opening Perimeter: 1/4 inch.

 2. Maximum Offset from Level: 1/16 inch.

**3.04 Adjustment**

 A. Adjust and balance roller shades to operate smoothly, easily, safely, and free from

 binding or malfunction throughout entire operational range.

**3.05 Cleaning**

 A. Clean roller shade surfaces after installation, according to manufacturer’s written

 instructions.

**3.06 Protection**

 A. Protect installed products until completion of project.

 B. Touch-up or repair damaged products, or replace products damaged by other trades,

 before Substantial Completion.

**END OF SECTION**