**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. 5-year Warranty on shade hardware. Fabrics warranted for 10 years minimum.

 AC and DC wired motors and electronic accessories to be free from defects in materials and

 workmanship for 7 years, and warrants battery powered DC motors to be free from defects

 in materials and workmanship for 5 years when installed properly and operated under

 normal use from the date stamped or affixed label on each device.

 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
4. Substitutions – No substitutions allowed.

**2.02 Motorized Skylight Roller Shade Components**

A. Control System: AUTOMATE™ MOTOR SYSTEM
Shade Motor and Control System – All line and low voltage wiring rough in and termination by others.

\*\* NOTE TO SPECIFIER \*\* Select one of the following motor options **(paragraphs a through h below)**, and delete the ones not required. General descriptions of each Motor and Control system are included with each option below. Contact Rollease Acmeda for more information concerning motor applications.

1. **Radio Technology, 12V DC QUIET motor with built-in re-chargeable lithium ion battery and radio transceiver. \*\* Note to Specifier\*\* Suitable for shades up to 14’x14’**

Tubular motor concealed inside each shade roller tube.

No line voltage, Low Voltage or communication wiring to motor location required.

Motor Operating sound level <44dB

IP Rating = IP44

Plug in charger fully charges motor in 6 hours.

Motor operates >300 cycles on fully charged battery

Charger may be permanently installed, allowing battery to serve as an emergency backup feature in a power outage.

Motor provides position reporting and “move to” position control via 2-way radio commands when operating from Mobile Device APP or connected to Automation systems.

Charging Options –

1. Plug in 12v Charger

1 per motor-OR-

1 for every 10 motors-OR-

1 per tenant space-OR-

1. per room
	* + 1. Solar Panel Trickle charger. (see Rollease Acmeda Solar Panel Configurator to calculate panel requirements)

1 per motor-OR-

1. per motor (Y-Harness required)

Control Options –

 \*\* Note to Specifier\*\* Choose any combination of control options required, from the list below.

* + - Single channel wireless wall switch for radio motor control -White.
		- Two channel wireless wall switch for radio motor control -White.
		- 15 channel wireless LCD wall switch for radio motor control -White.
		- 5 Channel Flush Mount wall switch – No need to cut into drywall – White.
		- Single channel wireless handheld transmitter with concealed magnetic wall mounting clip -White.
		- 15-Channel wireless handheld LCD transmitter with concealed magnetic wall mounting clip and “Levelling Control” feature, allowing shade(s) to be operated to 10 aligned positions -White.
		- Single Channel Dry Contact Interface – Allows for full control of radio motor shade via dry contact interface. (external 12v or 24v power source required).
		- ARC Repeater – Nearly doubles the range of a standard hub.
		- Wi-Fi / Serial Automation Interface.
			* Allows for full control, with feedback, of radio motor shade via RS485 serial data connection.
			* Supports Mobile Device Control through iOS or Android APPs via Wi-Fi

connection.

1. **Radio Technology, 12V DC QUIET motor with built-in radio transceiver.**

**\*\* Note to Specifier\*\* Suitable for shades up to 14’x14’**

Tubular motor concealed inside each shade roller tube.

No line voltage or communication wiring to motor location required.

Motor Operating sound level <43dB

IP Rating = IP44

Motor provides position reporting and “move to” position control via 2-way radio commands when operating from Mobile Device APP or connected to Automation systems.

Power Options –

1. Plug in 12v DC power supply

1 per motor-

 Control Options –

 \*\* Note to Specifier\*\* Choose any combination of control options required, from the list below.

* + - Single channel wireless wall switch for radio motor control -White.
		- Two channel wireless wall switch for radio motor control -White.
		- 15 channel wireless LCD wall switch for radio motor control -White.
		- 5 Channel Flush Mount wall switch – No need to cut into drywall – White.
		- Single channel wireless handheld transmitter with concealed magnetic wall mounting clip -White.
		- 15-Channel wireless handheld LCD transmitter with concealed magnetic wall mounting clip and “Levelling Control” feature, allowing shade(s) to be operated to 10 aligned positions -White.
		- Single Channel Dry Contact Interface – Allows for full control of radio motor shade via dry contact interface. (external 12v or 24v power source required).
		- ARC Repeater – Nearly doubles the range of a standard hub.
		- Wi-Fi / Serial Automation Interface.
			* Allows for full control, with feedback, of radio motor shade via RS485 serial data connection.
			* Supports Mobile Device Control through iOS or Android APPs via Wi-Fi

connection.

1. **Radio Technology, 110-120V AC QUIET motor with built-in radio transceiver.**

**\*\* Note to Specifier\*\* Suitable for shades up to 14’x14’**

Tubular motor concealed inside each shade roller tube.

No communication wiring to motor location required.

Motor Operating sound level <42dB

IP Rating = IP44

Motor provides position reporting and “move to” position control via 2-way radio commands when operating from Mobile Device APP or connected to Automation systems.

Power Options –

1. 110-120 VAC line voltage, .85 amps or 1.0 amps (dependent on motor size)

 Control Options –

 \*\* Note to Specifier\*\* Choose any combination of control options required, from the list below.

* + - Single channel wireless wall switch for radio motor control -White.
		- Two channel wireless wall switch for radio motor control -White.
		- 15 channel wireless LCD wall switch for radio motor control -White.
		- Single channel wireless handheld transmitter with concealed magnetic wall mounting clip -White.
		- 5 Channel Flush Mount wall switch – No need to cut into drywall – White.
		- 15-Channel wireless handheld LCD transmitter with concealed magnetic wall mounting clip and “Levelling Control” feature, allowing shade(s) to be operated to 10 aligned positions -White.
		- Single Channel Dry Contact Interface – Allows for full control of radio motor shade via dry contact interface. (external 12v or 24v power source required).
		- ARC Repeater – Nearly doubles the range of a standard hub.
		- Wi-Fi / Serial Automation Interface.
			* Allows for full control, with feedback, of radio motor shade via RS485 serial data connection.
			* Supports Mobile Device Control through iOS or Android APPs via Wi-Fi

connection.

1. **Mechanical Limit, 110-120V AC QUIET motor.**

**\*\* Note to Specifier\*\* Suitable for shades up to 14’x14’**

Tubular motor concealed inside each shade roller tube.

Line voltage to motor location required.

Motor Operating sound level <44dB

IP Rating = IP44

Power Options –

1. 110-120 VAC line voltage, < 1.0 amps (dependent on motor size)

 Control Options –

 External switches and/or controls required. Supplied by others.

 Wiring guide

 White - Neutral

 Black – Direction 1

 Red – Direction 2

 Green – Ground

 B. Enclosure: Full Fascia or Semi Fascia – Square front aluminum extrusion to conceal brackets,

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

 Optional top and back cover available. Finish color as selected by architect from manufacturer’s

 exterior grade Black or White powder coated painted finish. Two sizes depending on

 tube size requirement.

 C. Mounting Hardware: Manufacturer’s standard powder-coated, cold-rolled steel brackets

 designed for easy installation and removal of shade unit.

 D. Roller Tube: Extruded aluminum shade roller tube of 60mm or 80mm diameter

 to support shade fabric without excessive deflection, with engineered wall & ribs to lock the

 motor stop mechanism into place, providing strength & durability.

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

 roller tube via Spline attachment - shall consist of a PVC spline heat-welded to the shade fabric

 and inserted into a channel on the roller tube.

 F. Zipscreen Side Channel Option: Manufacturer’s patented two-piece side channel system, made

 from extruded aluminum with powder-coated finish to resist exterior elements, and capable

 of retaining a 16’ wide shade with solid fabric in up to 23 mph wind, or a 12’ wide shade

 in up to 30 mph wind. Fabric guides and bottom caps for fabric protection and finished

 look. Provides positive mechanical attachment of fabric to side channels via patented zip

 system - shall consist of a number 6 zip heat-welded to the shade fabric and inserted into a

 channel on a two-piece side channel.

 G. Wire Guide Support Option: Top and bottom anchors for 3.2mm stainless-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.

 H. Hem Bar: Exposed extruded aluminum heavy duty hem bar, of manufacturer’s standard

 configuration with black end caps. Color / finish as selected by Architect from manufacturer’s

 exterior grade Black or White powder coated finish. Heavy Duty hem bar has bottom extrusion

 feature to add light blocking brush or bubble seal for blocking light against the bottom

 enclosure extrusion.

 I. Tension system: Tension is maintained in the fabric via positive attachment to bottom tube via

 6mm lift tape or 1.5mm abrasion resistant cord. Tension is provided by a patented modular

 spring mechanism for constant tension.

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, or Verosol 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

**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**