**Manual Roller Shades**

Section 12494 – Roller Shades

Last Revised: 4/1/2021



Crown Shade Company | PO Box 9689 Baltimore, MD 21237 | 800.445.5557 | [www.crownshadeco.com](http://www.crownshadeco.com)

PART 1 GENERAL

* 1. Section Includes
1. Clutch/Chain “manually” operated, roll-up fabric interior window shades
2. Electrically operated, roll-up fabric interior window shades
	1. Related Sections
3. Section 06 10 00 – Rough Carpentry: Mounting support for shades.
4. Section 09 21 16 – Gypsum Board Shaft Wall Assemblies: Mounting shades in ceiling pockets.
5. Section 09 51 23 – Acoustical Tile Ceilings: Mounting recessed ceiling shades in pockets that integrate with ceiling tile grid systems.
6. Division 16 – Electrical: Electric service for motors and controls
	1. References
7. NFPA 701-99 Fire Tests for Flame-Resistant Textiles and Films.
8. GREENGUARD Environmental Institute Children & Schools.
9. US Green Building Council.
10. NFPA 70 – National Electrical Code.
	1. Submittals
11. Submit under provisions of Section 01 33 00.
12. Product Data: Manufacturer’s data sheets on each product to be used, including:
	* + 1. Preparation instructions and recommendations.
			2. Installation and maintenance instructions.
			3. Styles, material descriptions, dimensions of individual components, profiles, features, finishes and operating instructions.
			4. Storage and handling requirements and recommendations.
			5. Mounting details and installation methods

 C. Shop Drawings: Plans, elevations, sections, product details, installation details, operational clearances and relationship to adjacent work.

 D. Window Treatment Schedule: For all roller shades. Use same room designations as indicated on the Drawings, field verified window dimensions, quantities, type of shade, controls, fabric, and color, and include opening sizes and key to typical mounting details.

 E. Selection Samples: For each finish product specified, two complete sets of shade cloth options and aluminum finish color samples representing manufacturer's full range of available colors and patterns.

 G. Verification Samples: For each finish product specified, two complete sets of shade components, unassembled, demonstrating compliance with specified requirements. Shade fabric sample and aluminum finish sample as selected, representing actual product, color, and patterns. Mark face of material to indicate interior faces.

 H. Maintenance Data: Methods for maintaining roller shades, precautions regarding cleaning materials and methods, instructions for operating hardware and controls.

1.5 Quality Assurance

 A. Manufacturer Qualifications: Obtain roller shades through one source from a single manufacturer with a minimum of twenty years experience in manufacturing products comparable to those specified in this section

 B. NFPA Flame-Test: Passes NFPA 701. Materials tested shall be identical to products proposed for use.

C. Mock-Up: Provide a mock-up (manual shades only) of one roller shade assembly for evaluation of mounting, appearance and accessories.

1. Locate mock-up in window designated by Architect.

2. Do not proceed with remaining work until, mock-up is accepted by Architect.

* 1. Delivery, Storage & Handling
1. Window shades are not to be delivered to site until building is enclosed and respective rooms are substantially complete.
2. Store products in manufacturer’s unopened packaging until ready for installation.
	1. Project Conditions
3. Site environmental limitations: Install roller shades only after finishing work such as painting is complete.
	1. Warranty
4. Shade Fabric & Components: Manufacturers non depreciating limited lifetime warranty.
5. Shade Installation: One year from date of Substantial Completion.

PART 2 PRODUCTS

* 1. Manufacturers

A. Acceptable Manufacturer: Crown Shade Company: PO Box 9689, Baltimore, Maryland 21237. Tel: 800-445-5557 Fax: 410-686-6015 Website: [www.crownshadeco.com](http://www.crownshadeco.com)

 Email: sales@crownshadeco.com

1. Substitutions: Not Permitted.
2. Requests for substitutions will be considered in accordance with provisions of Section 01600.
	1. Mechanically Operated Roller Shades
3. General roller shade: Fabric window shades that roll up vertically, with components necessary for a complete installation.
	1. Roller Shade Design:
		1. Shade Type 1: Single roller shade system
		2. Shade Type 2: Double “Dual” roller shade system
	2. Lift System:
		1. Manually Operated – Bead chain clutch system that lowers and raises shade band and stops when chain is released. Bead limit stop balls are installed to prevent over travel of shade fabric.
			1. Bead chain loop: Stainless Steel
			2. Bead chain loop: Nickel Plated
			3. Bead chain loop: Poly [Plastic] – white, bronze or black
		2. Motorized Operation -- Electrically operating system that lowers, raises and stops shade band. Motor is concealed inside shade tube, is instantly reversible, lifetime lubrication system and equipped with an internal thermal overload protector, electric brake and pre-set accessible limit stops. [See section 2.3 for all options]
	3. Shade Mounting:
		1. Standard universal inside jamb or outside jamb mounting brackets.
		2. Fascia system with color coordinated end caps.
		3. Fascia system with top back cover with color coordinated end caps.
		4. Cassette system with coordinated fabric inserted and end caps.
		5. Ceiling or wall mount 3 sided pocket with closure panel.
		6. Recessed 3 sided ceiling pocket with tile support and closure panel.
		7. Wall clip hanger with closure panel: For site constructed recesses or pockets.
	4. Roller Tube:
		1. Manually operated shades:
			1. Formed steel roller tube, diameter to be selected by manufacturer based on shade size.
			2. Extruded aluminum roller tube with a minimum diameter of 1.0”. Diameter to be selected by manufacturer based on shade size.
		2. Motorized shades:
			1. Extruded aluminum roller tube with a minimum diameter of 1.5”. Diameter to be selected by manufacturer based on shade size.
4. Top Treatment Design Options:
	1. Fascia System: Encloses roller shade fabric roller, idler and drive for aesthetics and protection; L-shaped extruded aluminum.
		1. Finish: Silver powder coat or clear anodized.
		2. Finish: White powder coat
		3. Finish: Bronze powder coat
		4. Finish: Vanilla powder coat
		5. Finish: Black powder coat
		6. Finish: Custom powder coat as selected by Architect
	2. Top-Back Cover: An optional accessory for the fascia system, provides a completely concealed roller enclosure from all sides; L-shaped extruded aluminum.
		1. Finish: Silver powder coat or clear anodized.
		2. Finish: White powder coat
		3. Finish: Bronze powder coat
		4. Finish: Vanilla powder coat
		5. Finish: Black powder coat
		6. Finish: Custom powder coat as selected by Architect
	3. Ceiling or wall mount 3 sided pocket with closure panel: Extruded aluminum pocket sized to accomodate shade type and size. Removable closure panel to provide access to shades to be provided.
		1. Finish: Silver powder coat or clear anodized.
		2. Finish: White powder coat
		3. Finish: Bronze powder coat
		4. Finish: Black powder coat
		5. Finish: Custom powder coat as selected by Architect
	4. Recessed 3 sided ceiling pocket with tile support lip and closure panel. Extruded aluminum pocket sized to accommodate shade type and size. Removable closure panel across bottom of pocket to provide access to shades.
		1. Finish: Silver powder coat or clear anodized.
		2. Finish: White powder coat
		3. Finish: Bronze powder coat
		4. Finish: Black powder coat
		5. Finish: Custom powder coat as selected by Architect
	5. Wall clip hanger with closure panel: For site constructed recesses or pockets. Extruded aluminum removable closure panel to provide access to shade. Provide continous wall clip for closure panel to snap into.
		1. Finish: Silver powder coat or clear anodized.
		2. Finish: White powder coat
		3. Finish: Bronze powder coat
		4. Finish: Black powder coat
		5. Finish: Custom powder coat as selected by Architect
	6. Cassette system is a curved extruded aluminum valance with fabric matching the shade inserted into the front. Color coordinated plastic end caps are provided.
		1. Finish: Silver powder coat or clear anodized.
		2. Finish: White powder coat
		3. Finish: Bronze powder coat
		4. Finish: Vanilla powder coat
		5. Finish: Black powder coat
		6. Finish: Custom powder coat as selected by Architect
5. Side and Sill Design Options:
	1. For total black-out shades, side and sill channels to be extruded aluminum. Side channels to be of a single piece C-shaped design with black wool brush inserted. Sill Channel to be of an L-shaped design.
		1. Finish: Silver powder coat
		2. Finish: White powder coat
		3. Finish: Bronze powder coat
		4. Finish: Black powder coat
		5. Finish: Custom powder coat as selected by Architect
6. Fabric Band Hem/Weight Bar:
	1. Internal hem bar: RF or Impulse heat-sealed pocket concealing a 3/16” thick x 1” mill finish aluminum weight bar. Vertical sides of pocket to be sealed to completely trap weight bar in place.
	2. External hem bar: Extruded aluminum rectangular or curved profile with color coordinating plastic end caps. T-slot at bottom edge to accept optional bulb gasket or light blocking brush.
		1. Finish: Silver powder coat
		2. Finish: White powder coat
		3. Finish: Bronze powder coat
		4. Finish: Black powder coat
		5. Finish: Custom powder coat as selected by Architect
7. Fabric Band Roll Direction:
	1. Fabric to roll off back of roller tube (fabric hangs closer to glazing), Regular Roll
	2. Fabric to roll of front of roller tube (fabric hangs further from glazing), Reverse Roll
	3. Motor Control Systems:
	4. Quiet Standard 110 vac Motor:
		1. Individual Control: Wall Switch, Rocker/Toggle Style, 3 Position Maintained
		2. Multiple Shade Controller: Wall Switch, 6 button low voltage can operate up to 4 intermediate window presets
		3. Group Control: Relay UL component: Operate up to 12 motors on one low voltage or line voltage switch.
		4. RS-232/Dry Contact Interface: Allows shade motors to be controlled by integrated controllers.
	5. Quiet Radio Frequency Controlled Motors [Line Voltage AC, Low Voltage DC or Lith-Ion Rechargeable Battery Motors]
		1. Single channel radio frequency hand held remote
		2. Single channel radio frequency wireless wall station
		3. Multi-channel radio frequency hand held remote
		4. Multi-channel radio frequency wireless wall station
		5. Radio frequency interface to allow motors to be controlled via third party av equipment

C. Quiet Intelligent Motors, [Line Voltage AC or Low Voltage DC Motors].

1. Individual or Group Control:

a. Bus cable wall switch with up to 5 preset limit settings.

b. Wireless transmitter: Handheld Radio Freq. remote control to operate motors.

c. RS-232/Dry Contact Interface: Allows shade motors to be controlled by integrated controllers.

* 1. Fabric

A. Light-Filtering fabrics:

1. Sheerweave Infinity by Phifer: Composed of 30% ThermoPlastic Oletin (TPO) fiberyarn and 70% TPO coating on TPO yarn. Made of 100% recycled post-industrial products. Recyclable, lead free, PVC free. Greenguard Children & Schools certified as a low emitting fabric. FR rating: NFPA-701-1999TM#1 (small scale). Microbial and fungal resistant.

a. 3 percent openness factor.

b. 5 percent openness factor.

2. Sheerweave SW2000 by Phifer: VOC Emissions: GREENGUARD Children & Schools certified as a low emitting fabric. Fiberglass, vinyl coated and woven into a 2 by 2 basket weave. Fire rating: NFPA 701-1999TM#1 (small scale), NFPA 101 (Class A Rating), UBC (Class 1).. Bacteria and Fungal Resistance: ASTM G 21 and ASTM G 22. 14.26 oz/sq yd, .019 inches thick. Series SW2000 average 5 percent open.

3. SheerWeave Series SW2100 by Phifer: VOC Emissions: GREENGUARD Children & Schools certified as a low emitting fabric. Fiberglass, vinyl coated and woven into a 2 by 2 basket weave. Fire rating: NFPA 701-1999TM#1 (small scale), NFPA 101 (Class A Rating), UBC (Class 1).. Bacteria and Fungal Resistance: ASTM G 21 and ASTM G 22. 14.26 oz/sq yd, .019 inches thick. Series SW2100 average 10 percent open.

4. Sheerweave Series SW2360/2390/2410/2500 by Phifer: VOC Emissions: GREENGUARD Children & Schools certified as a low emitting fabric. Fiberglass, vinyl coated and woven into a 2 by 2 basket weave. Fire rating: NFPA 701-1999TM#1 (small scale), NFPA 101 (Class A Rating), UBC (Class 1).. Bacteria and Fungal Resistance: ASTM G 21 and ASTM G 22.

a. SW2500 – 1 percent openness factor, Mesh weight-16.1 oz/sq yrd, Thickness-.024

b. SW2410 – 3 percent openness factor, Mesh weight-13.9 oz/sq yrd, Thickness-.019

c. SW2390 – 5 percent openness factor, Mesh weight-11.9 oz/sq yrd. Thickness-.017

d. SW2360 – 10 percent openness factor, Mesh weight-10.5 oz/sq yrd. Thickness-.017

5. Sheerweave Series SW2700 by Phifer: VOC Emissions: GREENGUARD Children & Schools certified as a low emitting fabric. Fiberglass, vinyl coated duplex basket weave. Fire rating: NFPA 701-1999TM#1 (small scale), NFPA 101 (Class A Rating), UBC (Class 1).. Bacteria and Fungal Resistance: ASTM E 2180.

a. SW2701 – 1 percent openness factor, Mesh weight-14.6 oz/sq yrd, Thickness-.027

b. SW2703 – 3 percent openness factor, Mesh weight-14.0 oz/sq yrd, Thickness-.028

c. SW2705 – 5 percent openness factor, Mesh weight-11.8 oz/sq yrd. Thickness-.025

d. SW2710 – 10 percent openness factor, Mesh weight-10.4 oz/sq yrd. Thickness-.025

6. Sheerweave Series SW3000 by Phifer: Fiberglass, vinyl coated and woven into a 62 by 20 mesh. Fire rating: NFPA 701-1999TM#1 (small scale), NFPA 101 (Class A Rating), UBC (Class 1).. Bacteria and Fungal Resistance: ASTM G 21 and ASTM G 22. 13.46 oz/sq yd, .028 inches thick. Series SW3000 average 14 percent open.

7. Sheerweave Series SW4000/4100/4400 by Phifer: PVC on Polyester basket weave.

a. SW4400 – 3 percent openness factor, Mesh weight-20.7 oz/sq yrd. Thickness-.037

b. SW4000 – 5 percent openness factor, Mesh weight-19.2 oz/sq yrd, Thickness-.036

c. SW4100 – 10 percent openness factor, Mesh weight-17.5 oz/sq yrd, Thickness-.035

8. SheerWeave Series SW4500 by Phifer: Vinyl coated polyester yarn woven into basketweave pattern. Fire rating: NFPA 701 TM#1(small scale)/California U.S. title 19 (small scale)/British Standard 5867 Type B/ASTM E 84 (Class 1). Bacteria and Fungal Resistance: ASTM G 21 and ASTM G 22. Series PW4500, Average 5 percent open, 14.4 oz/sq yd, .024 inches thick.

9. SheerWeave Series PW4550 by Phifer: Vinyl coated polyester yarn woven into basketweave pattern. Fire rating: NFPA 701 TM#1(small scale)/California U.S. title 19 (small scale)/British Standard 5867 Type B/ASTM E 84 (Class 1). Bacteria and Fungal Resistance: ASTM G 21 and ASTM G 22. Series PW4550. Average 5 percent open, 12.5 oz/sq yd, .025 inches thick.

10. SheerWeave Series SW4600 by Phifer: Vinyl coated polyester yarn woven into basketweave pattern. Fire rating: NFPA 701 TM#1(small scale)/California U.S. title 19 (small scale)/British Standard 5867 Type B/ASTM E 84 (Class 1). Bacteria and Fungal Resistance: ASTM G 21 and ASTM G 22. Series PW4600, Average 3 percent open, 17.4 oz/sq yd, .030 inches thick.

11. SheerWeave Series SW4650 by Phifer: Vinyl coated polyester yarn woven into basketweave pattern. Fire rating: NFPA 701 TM#1(small scale)/California U.S. title 19 (small scale)/British Standard 5867 Type B/ASTM E 84 (Class 1). Bacteria and Fungal Resistance: ASTM G 21 and ASTM G 22. Series PW4650, Average. 3 percent open, 13.3 oz/sq yd, .026 inches thick.

* 1. SheerWeave SW4700 by Phifer: Vinyl coated polyester with a unique 4x2 weave. Fire rating: NFPA 701-1999 TM#1(small scale)/California U.S. title 19 (small scale)/NFPA 101 (Class A Rating)/UBC (Class 1)/British Standard 5867. Bacteria and Fungal Resistance: ASTM E 2180 and ASTM G 22. Lead Free: US consumer product safety commission section 101 and ANSI/WCMA A100.1-2007. 5 percent openness factor. 16.4 oz/sq yd, .037 inches thick.
	2. SheerWeave SW4800 by Phifer: Vinyl coated polyester with maximum UV blockage. Fire rating: NFPA 701-1999 TM#1(small scale)/California U.S. title 19 (small scale)/NFPA 101 (Class A Rating)/UBC (Class 1)/British Standard 5867. Bacteria and Fungal Resistance: ASTM G 21 and ASTM G 22. 1 percent openness factor. 18.5 oz/sq yd, .030 inches thick.
	3. SheerWeave SW5000 by Phifer: Vinyl coated polyester. Fire rating: NFPA 101 (Class A Rating)/UBC (Class1). Bacteria and Fungal Resistance: ASTM E 2180 and ASTM G 22. Lead Free: US consumer product safety commission section 101 and ANSI/WCMA A100.1-2007. Openness factor, mesh weight and fabric thickness vary based on pattern chosen.
	4. E Screen 7501 by Mermet: 1% average openness. PVC coated fiberglass yarn woven 2x2 box weave. 36% Fiberglass, 64% Vinyl. Greenguard Children & Schools certified. Fire rating: NFPA 701-04 TM #1 California US Title 19. .020” thickness.
	5. E Screen 7503 by Mermet: 3% average openness. PVC coated fiberglass yarn woven 2x2 box weave. 36% Fiberglass, 64% Vinyl. Greenguard Children & Schools certified. Fire rating: NFPA 701-04 TM #1 California US Title 19. .020” thickness.
	6. E Screen 7505 by Mermet: 5% average openness. PVC coated fiberglass yarn woven 2x2 box weave. 36% Fiberglass, 64% Vinyl. Greenguard Children & Schools certified. Fire rating: NFPA 701-04 TM #1 California US Title 19. .020” thickness.
	7. E Screen 7510 by Mermet: 10% average openness. PVC coated fiberglass yarn woven 2x2 box weave. 36% Fiberglass, 64% Vinyl. Greenguard Children & Schools certified. Fire rating: NFPA 701-04 TM #1 California US Title 19. .020” thickness.
	8. M Screen 8503 by Mermet: 3% average openness. PVC coated fiberglass yarn woven 1x2 weave. 36% Fiberglass, 64% Vinyl. Greenguard Children & Schools certified. Fire rating: NFPA 701-04 TM #1 California US Title 19. .022” thickness.
	9. M Screen 8505 by Mermet: 5% average openness. PVC coated fiberglass yarn woven 1x2 weave. 36% Fiberglass, 64% Vinyl. Greenguard Children & Schools certified. Fire rating: NFPA 701-04 TM #1 California US Title 19. .022” thickness.
	10. T Screen 9601 by Mermet: 1% average openness. PVC coated fiberglass yarn woven mesh screen. 36% Fiberglass, 64% Vinyl. Greenguard Children & Schools certified. Fire rating: NFPA 701-04 TM #1 California US Title 19. .030” thickness.
	11. T Screen 9603 by Mermet: 3% average openness. PVC coated fiberglass yarn woven mesh screen. 36% Fiberglass, 64% Vinyl. Greenguard Children & Schools certified. Fire rating: NFPA 701-04 TM #1 California US Title 19. .030” thickness.
	12. Natte by Mermet: 10% average openness. PVC coated fiberglass yarn woven 2x2 box weave. 42% Fiberglass, 58% Vinyl. Greenguard Children & Schools certified. Fire rating: NFPA 701-04 TM #1 ASTM E 84-97a Class A, California US Title 19. .021” thickness. Natte is suitable for both interior and exterior applications.
	13. Satine by Mermet: 5% average openness. PVC coated fiberglass yarn woven 2x2 box weave. 42% Fiberglass, 58% Vinyl. Greenguard Children & Schools certified. Fire rating: NFPA 701-04 TM #1 ASTM E 84-97a Class A, California US Title 19. .030” thickness. Satine is suitable for both interior and exterior applications.
	14. Silverscreen by Mermet: 4% average openness. PVC coated fiberglass woven screen. 42% Fiberglass, 58% Vinyl. Greenguard certified. Fire rating: NFPA 701-04 TM #1 ISO 6941 and BS 5867 P2. .020” thickness. Silverscreen has a metallic silver backing on the outside face.
	15. Vela by Mermet: 3% average openness. PVC-Free, 100% polyester. Greenguard Children & Schools certified. Fire rating: NFPA 701-04 Small Scale, California US Title 19. .015” thickness.

B Room Darkening fabrics:

1. Translucent Fiberglass by Indiana Coated: 4 ply laminated fiberglass, washable. Meets federal spec, CCC-C-521-E and NAFPA 701/1999 small scale flame testing. Translucent.

2. Obion by Mermet: PVC-FREE polyester with acrylic backing. 42% Fiberglass/51% Acrylic/7% Cotton. Fire rating: NFPA 701 small and large scale tested, ASTM-E84 class A, California U.S. title 19. 020 - .018 inches thick, 10.03 oz/sq yd. Translucent.

3. Paradis by Mermet: PVC and Halogen-Free, 100% Woven Fiberglass/EVA coating. Fire rating: NFPA 701-04 TM#1, California U.S. title 19. .014” thickness, 7.67 oz/sq yd. Translucent.

4. Fiz by Mermet: PVC and Halogen-Free, 100% Woven Fiberglass/EVA coating. Fire rating: NFPA 701-04 TM#1, California U.S. title 19. .010” thickness, 4.72 oz/sq yd. Translucent.

C. Black-Out fabrics:

1. SheerWeave Series SW7000 by Phifer: PVC-FREE polyester with acrylic foamed backing. Fire rating: NFPA 701-1999 TM#1(small scale)/California U.S. title 19 (small scale)/NFPA 101 (Class A Rating)/UBC (Class 1)/British Standard 5867. .018 inches thick, 10 oz/sq yd. Opaque.

2. SheerWeave Series SW7100 by Phifer: PVC-coated Fiberglass laminated with a 2-ply PVC film. Fire rating: NFPA 701-1999 TM#1(small scale)/California U.S. title 19 (small scale)/NFPA 101 (Class A Rating)/UBC (Class 1)/British Standard 5867. 023 inches thick, 19.8 oz/sq yd. Opaque.

3. Avila Twilight by Mermet: PVC-Free, 100% Polyester with an acrylic coating. Fire rating: NFPA 701-1999 TM#/California U.S. title 19. 020 inches thick, 12.4 oz/sq yd. Opaque.

4. Flocke by Mermet: PVC-FREE polyester with acrylic backing. 42% Fiberglass/51% Acrylic/7% Cotton. Fire rating: NFPA 701 small and large scale tested, ASTM-E84 class A, California U.S. title 19. 020 - .022 inches thick, 12.3 oz/sq yd. Opaque.

5. Blackout XLite by Mermet: PVC-Free, 100% Polyester with a polyurethane finish. Fire rating: NFPA 701-04 small scale. Greenguard children & schools certified. .015” thick, 8.8 oz/sq yrd. Opaque.

6. Fiberglass by Indiana Coated: 4 ply laminated fiberglass, washable. Meets federal spec, CCC-C-521-E and NAFPA 701/1999 small scale flame testing.

 a. 12 oz/sq yrd. Opaque.

 b. 14 oz/sq yrd. Opaque.

Part 3 Execution

* 1. Examination
	2. Do not begin installation until substrates have been properly prepared.
	3. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation prior to proceeding.
	4. Preparation
	5. Coordinate requirements for blocking and structural supports to ensure adequate means for installation of window shades.
	6. Surfaces shall be cleaned thoroughly prior to installation.
	7. Installation
	8. It is crucial that roller shades are installed level, plumb & square to ensure fabric is tracking properly among other aspects. Allow proper clearances for any window hardware.
	9. It will be the roller shade installers responsibility to adjust and balance roller shades to operate properly and safely.
	10. Clean roller shades if needed to manufacturers instructions after installation.
	11. Protection
	12. Installer is to protect installed products until completion of project.
	13. Schedules
1. Refer to Drawings for shade types and locations.

END OF SECTION