

**SECTION 12 24 21**  
**LIGHTPROOF SHADES**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

Provide lightproof shades where indicated.

**1.2 RELATED WORK**

SECTION 12 24 00, WINDOW SHADES.

**1.3 SUBMITTALS**

- A. In accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES, furnish the following:
- B. Manufacturers' Literature and Data: Showing details of construction and hardware for Lightproof Shades.

**1.4 APPLICABLE PUBLICATIONS**

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. Federal Specifications (Fed. Spec.):
  - A-A-59517 ..... Cloth, Coated or Laminated, Polyvinylchloride (Artificial Leather)

**PART 2 - PRODUCTS**

**2.1 MATERIALS**

- A. Shade Cloth: Fabricate for a crackproof and fadeproof material that will remain soft and pliable at all times under temperature changes. Shade cloth shall conform to fire resistant requirement of Fed. Spec. A-A-59517, and shall be same color on both sides.
- B. Cords for Shades: No. 4 braided nylon, or No. 4 1/2 braided cotton having not less than 80 Kg (175 pounds) breaking strength.
- C. Fastenings: Zinc-coated or cadmium plated metal, aluminum or stainless steel fastenings of proper length and type. Except as otherwise specified, fastenings for use with various structural materials shall be as follows:

Type of Fastening	Structural Material
Wood screw	Wood
Tap Screw	Metal
Case-hardened, self-tapping screw	Solid masonry Sheet metal
Toggle bolts	Hollow blocks, wallboard plaster

## 2.2 SHADES ENCLOSED IN WINDOWS

Shades inside of windows panes shall be used at Mental Health and Behavioral Nursing Units. There shall be no cords or ropes attached and curtains shall not be used. Hardware should be flush with the walls so that it can't be used to secure a nose. Hardware should also be tamper proof to prevent removal for use as a weapon or for self harm.

## 2.3 FABRICATION

- A. Lightproof shades shall be metal head housing, deep side guides, sill light lock members, continuous metal jamb and head anchor section, operating bars, and shall be complete with roller assembly, one piece lightproof shade cloth, and metal disappearing type horizontal braces (two each shade).
- B. Light traps shall be shop fabricated, and shall consist of a head box to house the shade roller, and steel channels U-shape in cross section to serve as guides for the shade along the sides, and to receive the bottom edge of the shade along the sill. Make light trap of sheet steel having a minimum thickness of 0.38 mm (0.015). Legs of the U-shaped channels shall be, not less than 45 mm (1-3/4 inches) long and separated by minimum distance that will permit free operation of the shade. Edges of light trap coming into contact with the shade cloth shall be rounded or beaded. Exposed face of the head box shall be hinged, or removable for access to the shade roller. Design entire assembly to prevent light from entering the room when the shade is drawn. Interior or unexposed surfaces of the light trap shall have a finish coat of flat black enamel. Exposed portions of the light trap shall have a factory applied pyroxylin lacquer, or baked on enamel finish in color to match adjoining wood or metal work.
- C. Rollers shall be of aluminum or stainless steel of sufficient diameter to support the shade, and provided with spindles, bearings and coil springs. Provide rollers with a groove and metal spline with aluminum,

or stainless steel machine screws spaced not over nine inches on centers, for attaching the shade cloth.

- D. Shades not finished with a selvage shall have vertical edges bound or hemmed to prevent raveling. Sewing shall be double or triple stitched, using a high-grade thread. Make needle holes lightproof by applying a suitable filler.
- E. Stiffen the shade by transverse steel bars of size and weight to hold the shade in the channel guides. Space bars approximately 450 mm (18 inches) on centers and conceal in pockets in the shade. Fit bottom edge of the shade with a steel operating bar designed to engage the sill channel of the light trap. Paint bars with flat black enamel.
- F. Cords: Fit operating bar with pull cord.

### **PART 3 - EXECUTION**

#### **3.1 INSTALLATION**

Install lightproof shades level at a height that will permit proper operation of the shades, and prevent outside light from infiltrating into the room. Light traps shall be closely fitted to the adjacent construction, and the connection shall be rigid and light-tight. Shades shall not be installed until after the room painting and finishing operations are complete.

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