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Preparing Activity: NASA Superseding  
NASA-12490S (December 2005)  
NASA-12495 (June 2004)

## UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are NOT in agreement with UMRL dated 01 April 2006

Revised throughout - changes not indicated by CHG tags

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04/06

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### SECTION 12 20 00.00 40

#### WINDOW TREATMENT 04/06

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NOTE: This guide specification covers the requirements for window blinds, shades, and curtain hardware.

Comments and suggestions on this guide specification are welcome and should be directed to the technical proponent of the specification. A listing of technical proponents, including their organization designation and telephone number, is on the Internet.

Recommended changes to a UFGS should be submitted as a Criteria Change Request (CCR).

Use of electronic communication is encouraged.

Brackets are used in the text to indicate designer choices or locations where text must be supplied by the designer.

## PART 1    GENERAL

### 1.1    REFERENCES

\*\*\*\*\*

NOTE: This paragraph is used to list the publications cited in the text of the guide specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.

Use the Reference Wizard's Check Reference feature when you add a RID outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature to update the issue dates.

References not used in the text will automatically be deleted from this section of the project specification when you choose to reconcile references in the publish print process.

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The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 701 (2004) Fire Tests for Flame Propagation of Textiles and Films

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FS AA-V-00200 (Rev B) Venetian Blinds

## 1.2 SUBMITTALS

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NOTE: Review Submittal Description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list to reflect only the submittals required for the project. Submittals should be kept to the minimum required for adequate quality control.

A "G" following a submittal item indicates that the submittal requires Government approval. Some submittals are already marked with a "G". Only delete an existing "G" if the submittal item is not complex and can be reviewed through the Contractor's Quality Control system. Only add a "G" if the submittal is sufficiently important or complex in context of the project.

For submittals requiring Government approval on Army projects, a code of up to three characters within the submittal tags may be used following the "G" designation to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy, Air Force, and NASA projects.

Choose the first bracketed item for Navy, Air Force and NASA projects, or choose the second bracketed item for Army projects.

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Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are [for Contractor Quality Control approval.][for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for

the Government.] Submit the following in accordance with Section 01 33 00  
SUBMITTAL PROCEDURES:

#### SD-02 Shop Drawings

Drapery Hardware[; G][; G, [\_\_\_\_\_]]

Drawings showing fabrication and installation details. Drawings shall show layout and locations of track, direction of draw, mounting heights, and details.

#### SD-03 Product Data

Window Blinds[; G][; G, [\_\_\_\_\_]]  
Window Shades[; G][; G, [\_\_\_\_\_]]  
Drapery Hardware[; G][; G, [\_\_\_\_\_]]

Manufacturer's data composed of catalog cuts, brochures, product information, and maintenance instructions.

#### SD-04 Samples

Window Blinds[; G][; G, [\_\_\_\_\_]]  
Window Shades[; G][; G, [\_\_\_\_\_]]  
Drapery Hardware[; G][; G, [\_\_\_\_\_]]

Samples of each type and color of window treatment. Blind slats or louvers must be 150 mm 6 inch in length for each color. Track must be 150 mm 6 inch in length. Shade material must be minimum 150 by 150 mm 6 by 6 inch in size.

\*\*\*\*\*  
NOTE: Coordinate with the drapery hardware  
specified for the project.  
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#### SD-06 Test Reports

Window Shades

Fire resistance

#### SD-08 Manufacturer's Instructions

Window Blinds[; G][; G, [\_\_\_\_\_]]  
Window Shades[; G][; G, [\_\_\_\_\_]]  
Drapery Hardware[; G][; G, [\_\_\_\_\_]]

#### SD-10 Operation and Maintenance Data

Window Blinds[; G][; G, [\_\_\_\_\_]]  
Window Shades[; G][; G, [\_\_\_\_\_]]  
Drapery Hardware[; G][; G, [\_\_\_\_\_]]

### 1.3 GENERAL

Window treatment must be provided, complete with necessary brackets, fittings, and hardware. Each window treatment type must be a complete unit provided in accordance with paragraph WINDOW TREATMENT PLACEMENT SCHEDULE.

Equipment must be mounted and operated as per manufacturer's instructions. Windows to receive a treatment must be completely covered. The Contractor must take measurements at the building and must be responsible for the proper fitting and hanging of the equipment.

#### 1.4 DELIVERY, STORAGE, AND HANDLING

Components must be delivered to the jobsite in the manufacturer's original packaging with the brand or company name, item identification, and project reference clearly marked. Components must be stored in a dry location that is adequately ventilated and free from dust, water, or other contaminants and must have easy access for inspection and handling. Materials must be stored flat in a clean dry area with temperature maintained above 10 degrees C 50 degrees F. Do not open containers until needed for installation unless verification inspection is required.

#### 1.5 FIELD MEASUREMENTS

The Contractor shall become familiar with details of the work, verify dimensions in the field, and shall advise the Contracting Officer of any discrepancy before performing the work.

#### 1.6 WARRANTY

Provide manufacturer's standard performance guarantees or warranties that extend beyond a 1 year period.

### PART 2 PRODUCTS

#### 2.1 WINDOW BLINDS

Provide each blind, including hardware, accessory items, mounting brackets and fastenings, as a complete unit produced by one manufacturer. All parts must be one color unless otherwise indicated, and match the color of the blind slat. Treat steel features for corrosion resistance.

##### 2.1.1 Horizontal Blinds

\*\*\*\*\*  
NOTE: Typically horizontal blinds are fabricated to fill the openings from head-to-sill and jamb-to-jamb with inside mounted brackets. A clearance of 6 mm (1/4 inch) should be allowed at each jamb. This typical mounting procedure may not be appropriate under certain conditions for Type II slats and for windows in special frames, sliding glass doors, or windows in doors. Check specifications of glass manufacturer for recommended clearances when detailing the mounting  
\*\*\*\*\*

Horizontal blinds must conform to FS AA-V-00200, [Type I (50 mm two inch slats)] [Type II (25 mm one inch slats)], [\_\_\_\_\_] except as modified below. Blind units shall be capable of nominally 180 degree partial tilting operation and full-height raising. Blinds must be [inside] [outside] mount. Tapes for Type I slats must be longitudinal reinforced vinyl plastic in one-piece turn ladder construction. Tapes for Type II slats should be braided polyester or nylon.

#### 2.1.1.1 Head Channel and Slats

\*\*\*\*\*  
NOTE: For clarification purposes, 0.006 inch refers to 0.006 gauge and 0.008 refers to 0.008 gauge. For Type II venetian blinds, aluminum slats should be specified, unless justification exists for using steel. Steel slats have a tendency to cut the thin-line tape used with 25 mm one inch slats.  
\*\*\*\*\*

Head channel must be steel or aluminum with corrosion-resistant finish nominal [0.46 mm 0.018 inch for Type I] [0.61 mm 0.024 inch for Type II]. Slats shall be aluminum, not less than [0.203 mm] [0.152 mm] [0.008 inch] [0.006 inch] thick, and of sufficient strength to prevent sag or bow in the finished blind. A sufficient amount of slats must be provided to assure proper control, uniform spacing, and adequate overlap. All hardware must be enclosed in the headrail.

#### 2.1.1.2 Controls

The slats must be tilted by a transparent tilting wand, hung vertically by its own weight, and must swivel for easy operation. The tilter control must be of enclosed construction. Moving parts and mechanical drive must be made of compatible materials which do not require lubrication during normal expected life. The tilter must tilt the slats to any desired angle and hold them at that angle so that any vibration or movement of ladders and slats will not drive the tilter and change the angle of slats. A mechanism must be included to prevent over tightening. The wand must be of sufficient length to reach to within 1500 mm five feet of the floor.

#### 2.1.1.3 Intermediate Brackets

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NOTE: Appropriate spacing for placement of intermediate brackets at 1200 mm (48 inch) and 1500 mm .60 inch. are typical for Type II blinds and 2100 mm .84 inch. for Type I blinds.  
\*\*\*\*\*

Intermediate brackets must be provided for installation of blinds over [1200mm] [1500 mm] [2100 mm] [48 inch] [60 inch] [84 inch] wide and must be installed as recommended by the manufacturer.

#### 2.1.1.4 Bottom Rail

Bottom rail must be a minimum of steel, corrosion-resistant, with baked-on polyester paint, color coordinated with slats. The bottom rail must be formed with a double-lock seam into a closed oval shape for optimum strength. End caps must be provided and match the rail in color.

#### 2.1.1.5 Braided Ladders

Ladders must be braided of 100 percent polyester yarn of a color to match the slat color. Spacing of ladders must be a maximum of and a minimum 15.2 slats per foot of drop and spaced in order to provide a uniform overlap of the slats in a closed position.

#### 2.1.1.6 Hold-Down Brackets

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NOTE: Holddown brackets should not be specified for windows except where air movement may cause the blinds to sway excessively.  
\*\*\*\*\*

Universal type hold-down brackets for sill or jamb mount must be provided were indicated on placement list.

#### 2.1.1.7 Audio Visual Blinds

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NOTE: Audio visual blinds are special purpose blinds to be used only when a greater than ordinary exclusion of light is required. Manufacturers recommendations for color selection should be used or careful selection of the color for optical properties must be considered in audio visual applications.  
\*\*\*\*\*

In addition to requirements for blinds, each unit must include light traps at sides, and sill. Privacy blinds must provide light enhancing capabilities by means of hidden slat holes. Construct light traps from aluminum or sheet steel, not less than 0.5 mm 0.02 inch thick, U-shaped, with legs not less than [45 mm 1.75 inch long for Type I blinds.] [20 mm 0.75 inch long for Type II blinds.] Edges in contact with blinds must be rounded or beaded. Finish inside surfaces of light traps in a dull gray or black color.

#### 2.1.2 Vertical Blinds

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NOTE: Typically vertical blinds will be wall mounted with outside brackets, sill length. Certain instances will call for different installation methods. When selecting a ceiling mount with inside brackets, the designer should verify that the window recess will accommodate this type installation.  
\*\*\*\*\*

Vertical blind units must be capable of nominally 180 degree partial tilting operation and full stackback. The blinds must be listed by the manufacturer as designed for heavy duty strength applications including heavy duty hardware. Vertical blinds must be [ceiling] [wall] mounted with [outside] [inside] brackets. Blinds must be [sill] [floor] length. Outside mount type installation must provide adequate overlap to control light and privacy.

##### 2.1.2.1 Louvers

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NOTE: Fabric louvers are freehanging and different from groover louvers. Groovers are vinyl louvers with fabric inserts included. Edit accordingly and do not use groovers and fabric louvers together.  
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Generally, 88.9 mm (3-1/2 inch) blinds will be specified because they are more economical. In some cases, 50 mm (2 inch) blinds will be more aesthetically pleasing because of the window size.

Typically, a bottom chain will be provided when blinds need extra control from movement, over an air vent or operable window.

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[Solid vinyl louvers must be fire resistant, UV stable, and impact resistant. Louvers must [have a bottom chain] [hang without a bottom chain].] [Fabric louvers must be flame retardant. The louvers must have straight, flat, unfrayed edges and must be flat, without noticeable twists. A weight must be provided at the bottom of the louver. The insert must not discolor the fabric. Louvers must [have a bottom chain] [not have a bottom chain].] [Groovers must be extruded from solid vinyl with clear non-yellowing channel lips to accept fabric inserts. Fabric inserts must be flame retardant and colorfast.] [Louvers that are 88.9 mm 3-1/2 inch must overlap not less than 10 mm 3/8 inch] [louvers that are 50 mm 2 inch must overlap not less than 6 mm 1/4 inch] and shall be dimensionally stable.

#### 2.1.2.2 Carriers

Carriers must be provided to support each louver. Carriers shall be of molded plastic and shall transverse on self-fabricated wheels for smooth, easy operation. The hook of the carrier must have an automatic latch to permit easy installation and removal of the louver, and must securely lock the louver for tilting and traversing.

#### 2.1.2.3 Headrail System

Headrail system must be not less than 1.19 mm 0.047 inch thick and must be made of anodized aluminum alloy or 0.635 mm 0.027 inch thick phosphate treated steel with a baked on ivory gloss enamel paint finish. The headrail must extend the full width of the blind and each end must be closed with an end cap. One cap must contain the traversing and tilting controls. The opposite cap must house the pulley for the traversing cord.

#### 2.1.2.4 Valance

Manufacturers standard valance must be attached to the headrail by metal or plastic holders which grip the top and bottom edge of the valance and must [accept an insert of the same material as the slats]. There must be sufficient clearance behind the valance to permit the louvers to tilt without interference. The headrail cover must extend the full width of the blind. [Returns must be provided].

#### 2.1.2.5 Controls

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NOTE: Typically a tilting control baton is used because it is unobtrusive. Control mechanisms generally are on the right side, but window placement may require the controls to be placed on the left side for ease of operation.

Select which direction the vertical blind will traverse in the Placement Schedule, considering

there must be adequate space for the width of the stack without concealing any electrical or mechanical components.

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Tilting control and traversing controls must hang compactly at the side of the blinds and must reach within 1500 mm 5 feet of the floor. The [tilt/traverse control] [bead chain tilting control] must tilt all vanes simultaneously to any desired angle and hold them at that angle. The louvers must traverse [one way to the right] [one way to the left] [two-way split]. [The traversing control cord shall be minimum 1.78 mm 0.070 inch in diameter with a minimum breaking strength of 556 N 125 pounds]. The cord must be anchored to a lead carrier which must be linked to all adjacent carriers. The louvers must be traversed along the headrail by pulling one side of the looped cord it must be [fastened to a cord tension pulley] [or] [a fiberglass wand must tilt the louvers by turning the wand and shall traverse the louvers by using the wand as a drapery control]. Sliding glass doors must have a one way draw with stackback occurring opposite door openings.

#### 2.1.2.6 Connectors and Spacers

The connector must be flexible, smooth and flat to slide unhindered when carriers move independently of each other, and to nest compactly when carriers are stacking. The length of the links must relate to the louver width in order to equally space the traversing louvers, to maintain uniform and adequate overlap of louvers, and to fully cover the width of the opening.

#### 2.1.2.7 Intermediate Brackets

Intermediate installation brackets must be furnished for blinds over 1575 mm 62 inch wide.

### 2.2 WINDOW SHADES

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NOTE: Light filtering shades are translucent and softly diffuse light to the amount that the fabric selected by the designer allows. Room darkening (black-out) shades are opaque and block out light completely. The designer should specify a complete room darkening system only if total light block is necessary, as in an audio visual application. A room darkening shade is typically made of a vinyl coated fiberglass cloth. Do not specify cotton cambric fabric for room darkening shades since it cannot provide total light block. Coordinate maximum unit sizes available with the window sizes.

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Roller tube must operate smoothly and be of sufficient diameter and thickness to prevent excessive deflection. Brackets must be provided that are appropriate for [inside] [outside] [ceiling] mount. The shade cloth must meet the performance described in NFPA 701, small scale test. Steel features must be treated for corrosion resistance.

### 2.2.1 Light Filtering Shades

Light filtering shades must conform to the following: Roller tube must be [wood] [steel] and must operate by [spring] [clutch and bead operation] mechanism. Fascia mounting brackets must be steel to support roller tube and fascia panel. The fascia panel must be channel shaped extruded aluminum with standard enamel finish. The shade must be made from a single piece of [PVC coated fiberglass cloth] [\_\_\_\_\_].

### 2.2.2 Room Darkening Shades

Room darkening (black-out) window shades must conform to the following: Roller tube must be aluminum and must be controlled by [webbing tape] [crank operated gear box with steel rods]. Light traps must be shop fabricated, and must consist of a head box to house the shade roller, and U-shaped channels to serve as guides for the shade along the sides and to receive the bottom edge of the shade along the sill. Light trap must be made of sheet steel having a minimum thickness of 0.85 mm 22 gauge or anodized, extruded, aluminum. The legs of the channels must be not less than 44 mm 1-3/4 inch long and separated by the minimum distance that will permit free operation of the shade. Edges of light trap coming into contact with the shade cloth must be smooth pile light seal. The exposed face of the head box must be hinged or removable for access to the shade roller. The interior or unexposed surfaces of the light trap must have a finish coat of flat black enamel. The exposed portions of the light trap must have a factory-applied [priming coat of gray paint.] [Anodized bronze or clear finish as shown.] Shade roller must be manufacturer's standard product. Cloth must be of type for blackout purposes. The shade must be made from a single piece of [canvas duck cloth laminated to vinyl] [\_\_\_\_\_]. When not finished with a selvage, the vertical edges of the shade must be bound or hemmed using a high-grade thread. Needle holes must be made lightproof by applying a suitable filler. The bottom edge of the shade must be fitted with a steel operating bar. Shades will engage positively with bottom rail through operating bar or chain pull. Bars must be painted with flat black enamel. Pull cords must be made of No. 4 braided nylon or beaded chain having not less than 335 N 175 pounds breaking strength.

### 2.3 DRAPERY HARDWARE

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**NOTE: Unless both stationary and traverse rods or tracks are required, delete the type not to be used. When traverse, indicate whether two or one-way draw; when one-way, select whether left-to-right or right-to-left.**

**Permit Contractor's option of steel or aluminum rods and tracks unless the desired finish cannot be provided with both materials or the installation dictates the use of one particular material.**

\*\*\*\*\*

Drapery hardware must be [stationary] [and] [traverse] [wall-mounted rods] [and] [ceiling mounted tracks] of heavy-duty type. Rods and tracks shall be cold-rolled, commercial quality steel minimum 0.42 mm 0.017 thick or extruded aluminum minimum 1.27 mm 0.050 inch thick. Rod and track cross section width and depth must be sufficient to carry the drapery without sagging. Track configuration (number of channels) must be such so as to permit drapery operation as specified or indicated. Finish steel

components with a [white] [\_\_\_\_\_] baked enamel, vinyl, or epoxy coating as standard with the manufacturer. Finish aluminum components with [an anodic [clear (natural)] [bronze] [\_\_\_\_\_] coating] [a baked enamel, vinyl, or epoxy coating] as standard with the manufacturer. Provide smooth and non-sticking sliding surfaces. Provide one-piece rod and track up to 4875 mm 16 feet long. Provide steel brackets and intermediate supports. Provide one manufacturer's design throughout.

#### 2.3.1 Track Sets

Include ceiling track, sliding or rolling carriers, and caps for stationary draperies; ceiling track, sliding or rolling carriers, master sliding or rolling carriers, ball bearing end pulleys, and traverse cord with cord [tassels] [tension pulleys] for traverse draperies.

#### 2.3.2 Rod Sets

Include wall-hung rod, sliding or rolling carriers, brackets, and intermediate supports with 65 to 90 mm 2-1/2 to 3-1/2 inch projection for stationary draperies; wall-hung rod, sliding or rolling carriers, master sliding or rolling carriers, ball bearing end pulleys, brackets, intermediate supports with 65 to 90 mm 2-1/2 to 3-1/2 inch projection, and traverse cord with cord [tassels] [tension pulleys] for traverse draperies.

#### 2.3.3 Traverse Cord

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NOTE: When traverse draperies are required, select  
cord tassels or tension pulleys.  
\*\*\*\*\*

Draw cords shall be size No. 4 with fiberglass core. Provide cord [tassel with lead weight center and plastic coating] [tension pulley, metal tube type or plastic housing type, with mounting bracket, helical spring, and ball bearing pulley wheel]. Finish color, white or off-white.

#### 2.3.4 Hand Traverse Cordless Track System

Extra heavy duty track assembly with baton on roomside of draperies where it is readily visible and easily used. [Ceiling mounted] [side-wall mounted] in extruded aluminum track anodized in [clear (aluminum)] [white] finish.

#### 2.3.5 Snap-Tape System Track

Dovetail slots in clear folding linkage. Carriers must be one-piece molded plastic snap tab type to mate with snap-on components sewn to drapery heading.

#### 2.3.6 Fasteners

Zinc or cadmium plated.

#### 2.4 COLOR

\*\*\*\*\*  
NOTE: Editing of color reference sentence(s) must  
be coordinated with the Government. Generally the  
09 06 90 Color Schedule or drawings are used when

the project is designed by an Architect or Interior designer. Color must be selected from manufacturers standard colors or identified as a manufacturers color in this specification only when the project has minimal finishes.

When the government directs that color be located in the drawings a note shall be added that states:  
"Where color is shown as being specific to one manufacturer, an equivalent color by another manufacturer may be submitted for approval. Manufacturers and materials specified are not intended to limit the selection of equal colors from other manufacturers. The word "color" as used herein includes surface color and pattern."

When more than one type, pattern or color is specified identify location.

When a manufacturer's name, stock number, pattern, and color is specified for color, be certain that the product conforms to the specification, as edited.

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Color, pattern and texture must be [indicated on the drawings.] [selected from manufacturers standard colors.] [[\_\_\_\_].] Color listed is not intended to limit the selection of equal colors from other manufacturers.]

### PART 3 EXECUTION

#### 3.1 WINDOW TREATMENT PLACEMENT SCHEDULE

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NOTE: The Window Treatment Placement Schedule will be provided at the designer's option when it will clarify placement of the treatments. When all exterior windows are to receive a window treatment, a note can be made to this effect instead of filling out the schedule completely. The location should be clearly defined within this specification. The Placement Schedule will be completely filled out with the room number/name, window covering type, drapery draw type/direction, window type and quantity.

\*\*\*\*\*

[All exterior windows shall include [\_\_\_\_].]

[Window covering must be provided as follows:

Room Number/Name	Window Covering Type	Drapery Draw Type/Direction	Window Type	Quantity
[____]	[____]	[____]	[____]	[____]

#### 3.2 IDENTIFICATION

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NOTE: Projects requiring large quantities of window

**treatments or a variety of window treatment types  
may need a numbering plan.**

\*\*\*\*\*

In accordance with the numbering plan, mark each opening and the corresponding window treatment with identical numbers. For multiple windows separated by mullions, the space required by each blind must be numbered separately. Use brass, aluminum, plastic, durable paper plates, or stamp to place corresponding numbers on unexposed surfaces of openings and inside or on top of the headrail track.

### 3.3 INSTALLATION

#### 3.3.1 Window Blinds

Installation must be in accordance with the approved detail drawings and manufacturer's installation instructions. Units must be level, plumb, secure, and at proper height and location relative to window units. The Contractor must furnish and install supplementary or miscellaneous items in total, including clips, brackets, or anchorages incidental to or necessary for a sound, secure, and complete installation. Installation must not be initiated until completion of room painting and finishing operations.

#### 3.3.2 Audio Visual Blinds

Installation must be in accordance with the approved detail drawings and manufacturer's installation instructions. Units must be level, plumb, secure, and at proper height and location relative to window units. The Contractor must furnish and install supplementary or miscellaneous items in total, including clips, brackets, or anchorages incidental to or necessary for a sound, secure, and complete installation. Installation must not be initiated until completion of room painting and finishing operations.

#### 3.3.3 Vertical Blinds

Installation must be in accordance with the approved detail drawings and manufacturer's installation instructions. Units must be level, plumb, secure, and at proper height and location relative to window units. The Contractor must furnish and install supplementary or miscellaneous items in total, including clips, brackets, or anchorages incidental to or necessary for a sound, secure, and complete installation. Installation must not be initiated until completion of room painting and finishing operations.

#### 3.3.4 Window Shades

Installation must be in accordance with the approved detail drawings and manufacturer's installation instructions. Units must be level, plumb, secure, and at proper height and location relative to window units. The Contractor must furnish and install supplementary or miscellaneous items in total, including clips, brackets, or anchorages incidental to or necessary for a sound, secure, and complete installation. Installation must not be initiated until completion of room painting and finishing operations.

#### 3.3.5 Drapery Hardware

Install in accordance with the manufacturer's printed instructions.  
[Install ceiling tracks parallel to walls and windows, fasten at each end, at 400 mm 16 inch from each end and with additional intermediate fasteners spaced not more than 1200 mm 48 inch apart]. [Install wall rods with end

brackets and provide intermediate support brackets 600 mm 24 inch from each end with additional intermediate support brackets spaced not more than 1200 mm 48 inch apart].

#### 3.3.6 Valance

Installation must be in accordance with the approved detail drawings and manufacturer's printed installation instructions. Units must be level, plumb, secure, and at proper height and location relative to window units. The Contractor must furnish and install supplementary or miscellaneous items in total, including clips, brackets, or anchorages incidental to or necessary for a sound, secure, and complete installation. Installation must not be initiated until completion of room painting and finishing operations.

#### 3.4 Clean-Up

Upon completion of the installation, window treatments must be adjusted for form and appearance, must be in proper operating condition, and must be free from soiling, damage or blemishes. Damaged units must be repaired or replaced by the Contractor as directed by the Contracting Officer. Isolate metal parts from direct contact with concrete, mortar, or dissimilar metals. Ensure blinds installed in recessed pockets can be removable without disturbing the pocket. The entire blind, when retracted, shall be contained behind the pocket. For blinds installed outside the jambs and mullions, overlap each jamb and mullion 20 mm 0.75 inch or more when the jamb and mullion sizes permit. Include all hardware, brackets, anchors, fasteners, and accessories necessary for a complete, finished installation.

-- End of Section --