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USACE / NAVFAC / AFCEA / NASA UFGS-12 21 00 (February 2009)  
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Preparing Activity: USACE Superseding  
UFGS-12 21 00 (July 2007)

## UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UML dated January 2010

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#### SECTION 12 21 00

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02/09

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### SECTION 12 21 00

#### WINDOW BLINDS 02/09

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

Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable items(s) or insert appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

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).

## PART 1 GENERAL

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NOTE: Use Section 12 22 00 for CURTAINS AND DRAPES. Use Section 12 24 13 for ROLLER WINDOW SHADES

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### 1.1 REFERENCES

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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 in the text by basic designation only.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 701

(2010) Fire Tests for Flame Propagation of Textiles and Films

## 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.][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

##### Installation

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

#### SD-03 Product Data

Window Blinds[; G][; G, [\_\_\_\_]]  
Installation

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

#### SD-04 Samples

Window Blinds[; G][; G, [\_\_\_\_]]  
Valance[; G][; G, [\_\_\_\_]]

Samples of each type and color of window treatment. Provide[ aluminum] [horizontal louver blind slats][vertical louvers] 150 mm 6 inch in length for each color. Provide 150 mm6 inch sample of [horizontal blind slats][vertical louvers] in each color specified.

#### SD-06 Test Reports

##### Window Blinds

Fire resistance, Flame Spread, and smoke contribution data.

#### SD-08 Manufacturer's Instructions

Window Blinds[; G][; G, [\_\_\_\_]]

#### SD-10 Operation and Maintenance Data

Window Blinds[; G][; G, [\_\_\_\_]]

### 1.3 SYSTEM DESCRIPTION

Provide window treatment, conforming to NFPA 701, complete with necessary brackets, fittings, and hardware. Each window treatment type shall be a complete unit provided in accordance with paragraph WINDOW TREATMENT PLACEMENT SCHEDULE. Mount and operate equipment in accordance with manufacturer's instructions. Windows to receive a treatment shall be completely covered.

### 1.4 DELIVERY, STORAGE, AND HANDLING

Deliver components to the jobsite in the manufacturer's original packaging with the brand or company name, item identification, and project reference clearly marked. Store components in a dry location that is adequately

ventilated and free from dust, water, or other contaminants and has easy access for inspection and handling. Store materials 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 WARRANTY

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

### PART 2 PRODUCTS

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NOTE: Coordinate with the drapery hardware specified for the project.  
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#### 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 shall be one color, unless otherwise indicated, to match the color of the blind slat. Treat steel features for corrosion resistance.

##### 2.1.1 Horizontal Blinds

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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 25 mm (1 inch) 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  
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Provide horizontal blinds with [50 mm 2 inch][25 mm 1 inch] slats. Blind units shall be capable of nominally 180 degree partial tilting operation and full-height raising. Blinds shall be [inside][outside] mount. Provide tapes for 50 mm 2 inch slats with longitudinal reinforced vinyl plastic in 1-piece turn ladder construction. Tapes for 25 mm 1 inch slats shall be braided polyester or nylon.

##### 2.1.1.1 Head Channel and Slats

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NOTE: For clarification purposes, 0.006 inch refers to 0.006 gauge and 0.008 refers to 0.008 gauge. For 25 mm (1 inch) 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 (1 inch) slats.  
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Provide head channel made of steel or aluminum with corrosion-resistant

finish nominal [0.46 mm0.018 inch for 50 mm2 inch] [0.61 mm0.024 inch for 25 mm1 inch] slats. Provide slats of aluminum, not less than [0.203][0.152] mm[0.008][0.006] inch thick, and of sufficient strength to prevent sag or bow in the finished blind. Provide a sufficient amount of slats to assure proper control, uniform spacing, and adequate overlap. Enclose all hardware in the headrail.

#### 2.1.1.2 Controls

The slats shall be tilted by a transparent tilting wand, hung vertically by its own weight, and shall swivel for easy operation. Provide a tilter control of enclosed construction. Provide moving parts and mechanical drive made of compatible materials which do not require lubrication during normal expected life. The tilter shall 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. Include a mechanism to prevent over tightening. Provide a wand of sufficient length to reach to within 1500 mm5 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 25 mm (1 inch) blinds and 2100 mm (84 inch) for 50 mm (2 inch) blinds.  
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Provide intermediate brackets for installation, as recommended by the manufacturer, of blinds over [1200][1500][2100] mm[48][60][84] inch wide.

#### 2.1.1.4 Bottom Rail

Provide bottom rail made of corrosion-resistant steel with factory applied finish. Provide closed oval shaped bottom rail with double-lock seam for maximum strength. Bottom rail and end caps to match slats in color.

#### 2.1.1.5 Braided Ladders

Provide braided ladders of 100 percent polyester yarn, color to match the slat color. Space ladders 15.2 slats per 300 mmfoot of drop 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.  
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Provide universal type hold-down brackets for sill or jamb mount where indicated on placement list.

#### 2.1.1.7 Audio Visual Blinds

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

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In addition to requirements for blinds, each unit shall include light traps at sides, and sill. Provide privacy blinds which provide light enhancing capabilities by means of hidden slat holes. Construct light traps from aluminum or sheet steel, not less than 0.5 mm0.02 inch thick, U-shaped, with legs not less than [45 mm1.75 inch long for 50 mm2 inch blinds.][20 mm 0.75 inches long for 25 mm1 inch blinds.] Round or bead edges in contact with blinds. 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.

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Provide vertical blind units capable of nominal 180 degree partial tilting operation and full stackback. The blinds shall be listed by the manufacturer as designed for heavy duty strength applications including heavy duty hardware. Provide [ceiling][wall] mounted vertical blinds with [outside][inside] brackets. Blinds shall be [sill][floor] length. Outside mount type installation shall 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.

Generally, 90 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.

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Provide louvers [which are fire resistant solid vinyl, UV stable, and impact resistant.][which are flame retardant fabric having straight, flat, unfrayed edges and flat, without noticeable twists. Provide a weight at the bottom of the louver without the insert discoloring the fabric.] [which are groover extruded from solid vinyl with clear non-yellowing channel lips to accept fabric inserts. Fabric inserts shall be flame retardant and colorfast.] Louvers that are [90 mm3-1/2 inch shall overlap not less than 10 mm3/8 inch][50 mm2 inch shall overlap not less than 6 mm 1/4 inch] and be dimensionally stable.

#### 2.1.2.2 Carriers

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

#### 2.1.2.3 Headrail System

Provide headrail system not less than 1.19 mm0.047 inch thick and made of anodized aluminum alloy or 0.635 mm0.027 inch thick phosphate treated steel with a baked on ivory gloss enamel paint finish. The headrail shall extend the full width of the blind and be closed with an end cap at each end. One cap shall contain the traversing and tilting controls. The opposite cap will house the pulley for the traversing cord.

#### 2.1.2.4 Valance

Attach the manufacturer's standard valance to the headrail by metal or plastic holders which grip the top and bottom edge of the valance and accept an insert of the same material as the slats. Provide sufficient clearance behind the valance to permit the louvers to tilt without interference. Extend the headrail cover the full width of the blind.[ Provide returns].

#### 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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Provide tilting and traversing controls that hang compactly at the side of the blinds and reach within 1500 mm5 feet of the floor. The [tilt/traverse control][bead chain tilting control] shall tilt all vanes simultaneously to any desired angle and hold them at that angle. Provide louvers that traverse [one way to the right] [one way to the left] [two-way split].[ The traversing control cord shall be minimum 1.78 mm0.070 inch in diameter with a minimum breaking strength of 556 N 125 pounds. Anchor the cord to a lead carrier linked to all adjacent carriers.] Provide louvers that traverse along the headrail by pulling one side of the looped cord [fastened to a cord tension pulley][ or ][a fiberglass wand that tilts the louvers by turning the wand and traverses the louvers by using the wand as a control]. Sliding glass doors shall have a one way draw with stackback occurring opposite door openings.

#### 2.1.2.6 Connectors and Spacers

The connector shall be flexible, smooth and flat to slide unhindered when carriers move independently of each other, and to nest compactly when carriers are stacking. Relate the length of the links 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

Provide intermediate installation brackets for blinds over 1575 mm62 inches wide.

### 2.2 COLOR

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NOTE: Editing of color reference sentence(s) must be coordinated with the Government. Generally, Section 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 manufacturer's standard colors or identified as a manufacturer's color in this specification only when the project has minimal finishes.

When the government directs that color be located in the drawings, a note will 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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Provide color, pattern and texture [in accordance with Section 09 06 90 COLOR SCHEDULE][as indicated on the drawings][selected from manufacturer's standard colors][[\_\_\_\_\_]. Color listed is not intended to limit the selection of equal colors from other manufacturers.]

## PART 3 EXECUTION

### 3.1 EXAMINATION

After becoming familiar with details of the work, verify all dimensions in the field, and advise the Contracting Officer of any discrepancy before performing the work.

### 3.2 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 of the window treatment should be clearly defined within this specification. The Placement Schedule will be completely filled out with the room number/name, window covering type, vertical blind draw direction, window type and quantity.

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[All exterior windows include [\_\_\_\_].] [Provide window covering as follows:

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

### 3.3 INSTALLATION

#### 3.3.1 Horizontal and Audio Visual Blinds

Perform installation of Horizontal and Audio Visual Blinds in accordance with the approved detail drawings and manufacturer's installation instructions. Install units level, plumb, secure, and at proper height and location relative to window units. Provide and install supplementary or miscellaneous items in total, including clips, brackets, or anchorages incidental to or necessary for a sound, secure, and complete installation. Do not start installation until completion of room painting and finishing operations.

#### 3.3.2 Vertical Blinds and Valance

Perform installation of Vertical Blinds and Valance in accordance with the approved detail drawings and manufacturer's installation instructions. Install units level, plumb, secure, and at proper height and location relative to window units. Provide and install supplementary or miscellaneous items in total, including clips, brackets, or anchorages incidental to or necessary for a sound, secure, and complete installation. Do not start installation until completion of room painting and finishing operations.

### 3.4 CLEAN-UP

Upon completion of the installation, free window treatments from soiling, damage or blemishes; and adjust them for form and appearance and proper operating condition. Repair or replace damaged units 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 mm0.75 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 --

