
USACE / NAVFAC / AFCEA / NASA UFGS-12 20 00 (July 2006)

Preparing Activity: USACE Superseding
UFGS-12 20 00 (April 2006)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UML dated 18 July 2006

Latest change indicated by CHG tags

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07/06

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SECTION 12 20 00

WINDOW TREATMENT
07/06

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.

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

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

1.2 SUBMITTALS

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.

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

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. Provide blind slats or louvers 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.

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 REQUIREMENTS

Provide window treatment, 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. Mount and operate equipment as per manufacturer's instructions. Windows to receive a treatment must be completely covered. Take measurements at the building for the proper fitting and hanging of the equipment.

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 FIELD MEASUREMENTS

Become familiar with details of the work, verify dimensions in the field, and 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, to 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 shall have [50 mm 2 inch slats] [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. Tapes for Type I slats shall be longitudinal reinforced vinyl plastic in 1-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.

Provide head channel made of 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]. 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 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. Provide moving parts and mechanical drive 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. Include a mechanism to prevent over tightening. Provide a wand of sufficient length to reach to within 1500 mm 5 feet of the floor.

2.1.1.3 Intermediate Brackets

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.

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 steel, corrosion-resistant, with baked-on polyester paint, color coordinated with slats, and formed with a double-lock seam into a closed oval shape for optimum strength. Provide end caps to match the rail in color.

2.1.1.5 Braided Ladders

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

2.1.1.6 Hold-Down Brackets

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

Provide universal type hold-down brackets for sill or jamb mount where indicated on placement list.

2.1.1.7 Audio Visual Blinds

NOTE: Audio visual blinds are special purpose 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.

In addition to requirements for blinds, each unit must include light traps at sides, and sill. Furnish 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 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 inches long for Type II 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

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.

Provide vertical blind units 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. Provide vertical blinds to 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

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, 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.

Provide [louvers [which are [fire resistant solid vinyl, UV stable, and impact resistant; [having a bottom chain] [hanging without a bottom chain.]] [with flame retardant fabric having straight, flat, unfrayed edges and flat, without noticeable twists. A weight must be provided at the bottom of the louver without the insert discoloring the fabric.] Provide louvers [with] [without] a bottom chain.]] [Groovers 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] [50 mm 2 inch must overlap not less than 6 mm 1/4 inch] and be dimensionally stable.

2.1.2.2 Carriers

Provide carriers to support each louver. Provide carriers made of molded plastic to 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 to securely lock the louver for tilting and traversing.

2.1.2.3 Headrail System

Provide headrail system not less than 1.19 mm 0.047 inch thick and 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 be closed with an end cap at each end. One cap must 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. The headrail cover must extend the full width of the blind. [Returns must be provided].

2.1.2.5 Controls

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.

Provide tilting and traversing controls that hang compactly at the side of the blinds and 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. 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 mm 0.070 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 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

Furnish intermediate installation brackets for blinds over 1575 mm 62 inches wide.

2.2 WINDOW SHADES

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.

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

2.2.1 Light Filtering Shades

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

2.2.2 Room Darkening Shades

Conform room darkening (black-out) window shades to the following: Roller tube must be aluminum, controlled by [webbing tape] [crank operated gear box with steel rods]. Provide shop fabricated light traps, consisting 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. Provide light trap made of sheet steel having a minimum thickness of 0.85 mm (22 gauge) 22 gauge or anodized, extruded, aluminum. The legs of the channels must be not less than 44 mm 1-3/4 inches 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. Finish painting is specified in Section 09 90 00 PAINTING, GENERAL.] [anodized bronze or clear finish as shown.] Provide manufacturer's standard shade roller. Cloth must be of type for blackout purposes. Make the shade 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. Make needle holes lightproof by applying a suitable filler. Fit the bottom edge of the shade with a steel operating bar. Shades will engage positively with bottom rail through operating bar or chain pull. Paint bars with flat black enamel. Make pull cords of No. 4 braided nylon or beaded chain having not less than 335 N 175 pounds breaking strength.

2.3 DRAPERY HARDWARE

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.

Provide drapery hardware [stationary] [and] [traverse] [wall-mounted rods] [and] [ceiling mounted tracks] of heavy-duty type. Furnish rods and tracks made of cold-rolled, commercial quality steel minimum 0.42 mm 0.0165 inch 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. Provide track configuration (number of channels) 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

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

Provide draw cords 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,
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 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.

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 WINDOW TREATMENT PLACEMENT SCHEDULE

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 include [____].]

[Provide window covering as follows:

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

3.2 IDENTIFICATION

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

Perform installation 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. 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. Do not start installation until completion of room painting and finishing operations.

3.3.2 Audio Visual Blinds

Perform installation 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. 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. Do not start installation until completion of room painting and finishing operations.

3.3.3 Vertical Blinds

Perform installation 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. 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. Do not start installation until completion of room painting and finishing operations.

3.3.4 Window Shades

Perform installation 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. 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. Do not start installation until completion of room painting and finishing operations.

3.3.5 Drapery Hardware

Install in accordance with the manufacturer's printed instructions and as specified herein. [Install ceiling tracks parallel to walls and windows, fasten at each end, at 400 mm 16 inches from each end and with additional intermediate fasteners spaced not more than 1200 mm 48 inches apart]. [Install wall rods with end brackets and provide intermediate support brackets 600 mm 24 inches from each end with additional intermediate support brackets spaced not more than 1200 mm 48 inches apart].

3.3.5.1 Valance

Perform installation 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. 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. 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, must 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 --