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USACE / NAVFAC / AFCEC / NASA **UFGS-12 21 00 (August 2017)**
Change 2 - 11/18

Preparing Activity: USACE **Superseding**
UFGS-12 21 00 (August 2010)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated July 2023
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SECTION 12 21 00

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08/17, CHG 2: 11/18

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SECTION 12 21 00

WINDOW BLINDS
08/17, CHG 2: 11/18

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

Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable item(s) or insert appropriate information.

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

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).

PART 1 GENERAL

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

1.1 SUMMARY

Provide window treatment, conforming to NFPA 701, complete with necessary brackets, fittings, and hardware. Provide each window treatment type as a complete unit in accordance with paragraph WINDOW TREATMENT PLACEMENT SCHEDULE. Mount and operate equipment in accordance with manufacturer's instructions. Completely cover windows to receive a treatment.

1.2 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.

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)

CDPH SECTION 01350	(2017; Version 1.2) Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chambers

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 701	(2023; ERTA 1 2023) Standard Methods of Fire Tests for Flame Propagation of Textiles and Films

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

SCS	SCS Global Services (SCS) Indoor Advantage

UNDERWRITERS LABORATORIES (UL)

UL 2818	(2022) GREENGUARD Certification Program For Chemical Emissions For Building Materials, Finishes And Furnishings

1.3 SUBMITTALS

****
NOTE: Review submittal description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list, and corresponding submittal items in the text, to reflect only the submittals required for the project. The Guide Specification technical editors have classified those items that require Government approval, due to their complexity or criticality, with a "G." Generally, other submittal items can be reviewed by the Contractor's

Quality Control System. Only add a “G” to an item, if the submittal is sufficiently important or complex in context of the project.

For Army projects, fill in the empty brackets following the "G" classification, with a code of up to three characters 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.

The "S" classification indicates submittals required as proof of compliance for sustainability Guiding Principles Validation or Third Party Certification and as described in Section 01 33 00 SUBMITTAL PROCEDURES.

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" or "S" classification. Submittals not having a "G" or "S" classification are [for Contractor Quality Control approval.][for information only. When used, a code following the "G" classification 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

SD-03 Product Data

Window Blinds; G[, [_____]]

[Recycled Content for aluminum components; S]

SD-04 Samples

Window Blinds; G[, [_____]]

Valance; G[, [_____]]

SD-06 Test Reports

Window Blinds

SD-07 Certificates

[Indoor Air Quality for window blinds; S]

SD-08 Manufacturer's Instructions

Window Blinds; G[, [_____]]

SD-10 Operation and Maintenance Data

Window Blinds; G[, [_____]]

[1.4 CERTIFICATIONS

1.4.1 Window Blinds

Provide products certified to meet indoor air quality requirements by UL 2818 Greenguard [Gold], SCS Global Services Indoor Advantage Gold or provide certification or validation by other third-party program that products meet the requirements of this Section. Provide current product certification documentation from certification body. When product does not have certification, provide validation that product meets the indoor air quality product requirements cited herein.

]1.5 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 1 0 degrees C 50 degrees F. Do not open containers until needed for installation unless verification inspection is required.

1.6 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.
****

2.1 WINDOW BLINDS

Provide each blind, including hardware, accessory items, mounting brackets and fastenings, as a complete unit produced by one manufacturer. Unless otherwise indicated, all parts will be the same color and will match the color of the blind slat. Treat steel features for corrosion resistance. Submit product data and samples of each type and color of window treatment. Provide [slat][louver] samples 150 mm 6 inch in length for each color.[Window blinds must meet emissions requirements of CDPH SECTION 01350 (use the office or classroom requirement, regardless of space type). Provide certification or validation of indoor air quality for window blinds.]
****
NOTE: Use materials with recycled content where appropriate for use. Verify suitability, availability within the region, cost effectiveness and adequate competition (including verification of

bracketed percentages included in this guide specification) before specifying product recycled content requirements.

Research shows the product is available among US national manufacturers above the minimum recycled content of the first bracket. Some manufacturers and regions have higher percentages. If desired, insert higher percentages into the second set of brackets.

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[Provide Aluminum Components with a minimum of [24][_____] percent recycled content. Provide data identifying percentage of recycled content for aluminum components.]

****

NOTE: Include bracketed sentence below requiring products with indoor air quality certifications when it is verified there is a product available that is certified by a third-party organization such as Greenguard or SCS Global Services. Also, verify that the certified product is both cost effective and appropriate for the project.

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[Provide certification of indoor air quality for window blinds.]

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

****

Provide horizontal blinds with[50 mm 2 inch][25 mm 1 inch] slats. Blind units must be capable of nominally 180 degree partial tilting operation and full-height raising. Blinds must 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 mm1 inch slats must 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.

Do not use steel materials in humid locations or project locations with Environmental Severity Classifications (ESC) of C3 thru C5. Humid project locations are those in ASHRAE climate zones 0A, 1A, 2A, 3A, 3C, 4C and 5C (as identified in ASHRAE 90.1). See UFC 1-200-01 for determination of ESC for project locations. Provide window blinds of prefinished aluminum with a minimum thickness of 0.032 inch (0.813 mm) for recommended spans.

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Provide head channel made of[steel or] aluminum with corrosion-resistant finish nominal[0.46 mm 0.018 inch for 50 mm 2 inch][0.61 mm 0.024 inch for 25 mm 1 inch] slats. Provide slats of aluminum, not less than [0.203][0.152][0.813] mm [0.008][0.006][0.032] 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

A transparent tilting wand will be provided to tilt the slats, it will hang vertically by its own weight, and will 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 will 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. [Provide cordless blinds or blinds with cords that are out of reach of children and strangle proof.]

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.

2.1.2 Light Control and Privacy Blinds

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NOTE: Light control and privacy blinds are special purpose blinds to be used only when more than average blocking of light and privacy is required. Refer to UFGS SECTION 12 24 13 ROLLER WINDOW SHADES for black out shades.
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In addition to requirements for horizontal blinds, provide each unit with a feature that offers hidden slat holes for maximum light control and privacy.

2.1.3 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.
****

Provide vertical blind units capable of nominal 180 degree partial tilting operation and full stackback. Provide blinds that are 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. Provide blinds that are [sill][floor] length. Outside mount type installation must provide adequate overlap to control light and privacy.

2.1.3.1 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.
****

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. Provide fabric inserts that are flame retardant and colorfast.] Louvers that are[90 mm 3-1/2 inch must overlap not less than 10 mm 3/8 inch][50 mm 2 inch must overlap not less than mm 1/4 inch] and be dimensionally stable.

2.1.3.2 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 must have an automatic latch to permit easy installation and removal of the louver, and to securely lock the louver for tilting and traversing.

2.1.3.3 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. Provide a headrail that extends the full width of the blind and can be closed with an end cap at each end. One cap will contain the traversing and tilting controls. The opposite cap will house the pulley for the traversing cord.

2.1.3.4 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].

2.1.3.5 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. Provide [tilt/traverse control][bead chain tilting control] that tilts 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 will 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 control]. Sliding glass doors will have a one way draw with stackback occurring opposite door openings.

2.1.3.6 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. 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.

2.1.3.7 Intermediate Brackets

Provide intermediate installation brackets for blinds over 1575 mm 62 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 00 SCHEDULES FOR FINISHES 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.

****

Provide color, pattern and texture [in accordance with Section 09 06 00 SCHEDULES FOR FINISHES][as indicated][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 to 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. The location of the window treatment should be clearly defined within this specification.

****

[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

Do not install building construction materials that show visual evidence of biological growth.

Submit drawings showing fabrication and Installation details. Show layout and locations of track, direction of draw, mounting heights, and details. Provide Manufacturer's Instructions and Operation and Maintenance Data. Perform installation of window 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.

3.4 CLEAN-UP

Upon completion of the installation, inspect window treatments for 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 --