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USACE / NAVFAC / AFCEA UFGS-12491N (August 2001)  
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Preparing Activity: NAVFAC Superseding  
UFGS-12491N (September 1999)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated 25 June 2004

Latest change indicated by CHG tags

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SECTION TABLE OF CONTENTS

DIVISION 12 - FURNISHINGS

SECTION 12491N

CURTAINS AND DRAPE

08/01

PART 1 GENERAL

- 1.1 REFERENCES
- 1.2 SUBMITTALS
- 1.3 SYSTEM REQUIREMENTS
- 1.4 DELIVERY, STORAGE, AND HANDLING

PART 2 PRODUCTS

- 2.1 MATERIALS
  - 2.1.1 Fabrics
    - 2.1.1.1 Drapery Fabric
    - 2.1.1.2 Drapery Lining
    - 2.1.1.3 Flame Resistance
  - 2.1.2 Sewing Thread
  - 2.1.3 Heading
    - 2.1.3.1 Heading Hooks
    - 2.1.3.2 Snap-Tape System (Ripplefold)
  - 2.1.4 Drapery Hardware
    - 2.1.4.1 Track Sets
    - 2.1.4.2 Rod Sets
    - 2.1.4.3 Traverse Cord
    - 2.1.4.4 Hand Traverse Cordless Track System
    - 2.1.4.5 Snap-Tape System Track
  - 2.1.5 Fasteners
- 2.2 FABRICATION
  - 2.2.1 Drapery Fabrication
    - 2.2.1.1 Panels
    - 2.2.1.2 Headings
    - 2.2.1.3 Seams
    - 2.2.1.4 Hems
  - 2.2.2 Lining Fabrication
  - 2.2.3 Tie-Backs
  - 2.2.4 Valances

PART 3     EXECUTION

3.1     EXAMINATION

3.2     INSTALLATION

3.2.1     Hardware

3.2.2     Draperies

3.2.3     Valances

3.3     DRAPERY SCHEDULE

-- End of Section Table of Contents --

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SECTION 12491N

CURTAINS AND DRAPES  
08/01

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NOTE: This guide specification covers the requirements for draperies, drapery hardware, and its installation.

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.

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NOTE: On the drawings, show:

1. Windows and other locations requiring drapery. Indicate whether drapery extends to ceiling or to specific height above windows.

2. Location of each different drapery fabric when more than one type, pattern or color is to be provided.

3. Width of window and width of drapery extension if bay window.

4. Location of sample window installation, if appropriate.

5. Indicate draw direction when one-way draw traverse rods or tracks are to be provided.

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PART 1 GENERAL

1.1 REFERENCES

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NOTE: Issue (date) of references included in project specifications need not be more current than provided by the latest guide specification. Use of SpecsIntact automated reference checking is recommended for projects based on older guide specifications.

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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.

ASTM INTERNATIONAL (ASTM)

ASTM D 3691 (2002) Woven, Lace, and Knit Household  
Curtain and Drapery Fabrics

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 701 (1999) Fire Tests for Flame Propagation of  
Textiles and Films

UNDERWRITERS LABORATORIES (UL)

UL 214 (1997; Rev thru Aug 2001) Tests for  
Flame-Propagation of Fabrics and Films

1.2 SUBMITTALS

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NOTE: Submittals must be limited to those necessary for adequate quality control. The importance of an item in the project should be one of the primary factors in determining if a submittal for the item should be required.

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 projects.

Submittal items not designated with a "G" are considered as being for information only for Army projects and for Contractor Quality Control approval for Navy 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.] The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

#### SD-04 Samples

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

Submit a range of three samples, 900 by 900 mm 36 by 36 inches or larger, to match the fabric quality, weight, pattern, and color shown or specified. Once selected, label approved samples to identify locations for their use in the project. Maintain identification and approval markings until final acceptance of the work.

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**NOTE:** Coordinate with the drapery hardware specified for the project. Should the designer choose to indicate the location for the sample window installation, clearly indicate the location on the project drawings and edit the paragraph accordingly.

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Finished drapery

Provide one full size window sample installation including hardware. Install the finished drapery on a [stationary] [traverse] [rod] [or] [track] [at the location indicated].

#### SD-06 Test Reports

Flame resistance

#### SD-08 Manufacturer's Instructions

Drapery hardware

Special fabrication

Before fabrication, submit the manufacturer's printed instructions for fabrics requiring special fabrication methods.

#### SD-10 Operation and Maintenance Data

## Drapery system, Data Package 1; G

Submit in accordance with Section 01781 OPERATION AND MAINTENANCE DATA.

### 1.3 SYSTEM REQUIREMENTS

Submit for completed drapery system in accordance with Section 01781 OPERATION AND MAINTENANCE DATA. Include laundering and dry cleaning instructions for fabrics requiring special care. Furnish separate instruction sheet for each material (one for fiberglass, one for Verel, etc.). For fabrics which are not permanently or inherently flame resistant, furnish instruction to include frequency and process required for retreating the fabric to renew the effectiveness of the flame resistant treatment. Head each sheet with name and number of room or rooms in which each material is hung. In lieu of instruction sheets, provide instructions on small, permanent labels (either iron-on type or sewn-on) affixed to back of the heading of each panel.

### 1.4 DELIVERY, STORAGE, AND HANDLING

Deliver draperies and hardware to the site in sealed containers clearly labeled with manufacturer's name and contents. Store in a safe, dry, clean, and well ventilated area. Do not open containers until needed for installation, unless verification inspection is required.

## PART 2 PRODUCTS

### 2.1 MATERIALS

#### 2.1.1 Fabrics

##### 2.1.1.1 Drapery Fabric

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NOTE: Generic descriptions are preferred in order to promote competition. However, due to variety of fabrics available, manufacturer's names and designations may be the more practical method of describing desired fabrics. When a manufacturer's name and designation are used, add the following note to text: "Manufacturer's name and fabric designation are provided to identify the fabric weight, pattern, weave, texture, and color desired. Other manufacturers' products meeting the requirements specified and having similar fabric weight, pattern, weave, texture, and color will be acceptable."

When project requires matching a standard sample, include last sentence. Make fabric sample available at location stated for inspection by prospective bidders when special fabrics are required.

If more than one fabric is required, repeat the listing as necessary.

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ASTM D 3691. Provide fabric manufactured from [man-made] [or] [natural]

fibers. Fabric physical characteristics shall be as [indicated.] [follows:]

- a. Finished fabric weight: [\_\_\_\_\_] to [\_\_\_\_\_] kilograms per square meter ounces per square yard
- b. Pattern: [Printed] [Woven] [\_\_\_\_\_]
- c. Weave: [Open (25.1 to 50 percent)] [Semi-open (7.1 to 25 percent)] [Closed (0 to 7 percent)]
- d. Texture: [Burlap] [Smooth] [Twill] [\_\_\_\_\_]
- e. Color: [\_\_\_\_\_]
- f. Shading coefficient (single glass with drapery): [\_\_\_\_\_]

[A sample of each drapery fabric to be matched is on display at [\_\_\_\_\_] .]

#### 2.1.1.2 Drapery Lining

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NOTE: Delete this paragraph if unlined draperies are specified. Other lining fabrics may be specified in the blank space provided. Specify lining color.  
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[Insulated], [soft blackout,] [\_\_\_\_\_] , color [\_\_\_\_\_] [as indicated].

#### 2.1.1.3 Flame Resistance

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NOTE: UL 214 and NFPA 701 include small and large scale test procedures. The large scale test is more severe than the small scale test. UL 214 requires that all fabrics meet the performance requirements of both tests. NFPA 701 provides for optional use at the discretion of the authority having jurisdiction. National Fire Protection Association 101, "Code for Safety to Life from Fire in Buildings and Structures", requires both tests for fabrics used in assembly, educational, health care, detention and correctional, and residential occupancies.

For other occupancies, the large scale test should be specified only when stringent flame resistance requirements are necessary, or when the nature of the fabric specified is such that excessive melting or shrinkage will render the small scale test ineffective. Otherwise, the small scale test requirements are adequate in most cases.

A variety of flame-retardant treatments are available. Generally, they fall into two broad categories: (1) permanent type, and (2) the less expensive, renewable type. Permanent treatments retain their effectiveness through a number of

cleanings without reapplication. Renewable treatments, however, must be reapplied periodically, frequently after each cleaning, which imposes a continuing maintenance burden. Permanent treatments can be successfully applied to most fabrics. Only a few fibers or fabrics are limited to renewable treatments. Specify permanent treatment except where the fiber type or other fabric characteristics prohibit use of this type.

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UL 214 or NFPA 701. Drapery fabric and lining shall pass the [small] [and] [large] scale test. Treatment to enhance flame resistance shall be [permanent] [renewable] type. If treated, fabric shall pass the [small] [and] [large] scale test after being subjected to the accelerated dry cleaning or laundering cycles specified in UL 214 or NFPA 701.

#### 2.1.2 Sewing Thread

Pre-shrunk mercerized cotton (50/3) or monofilament in equivalent size, except do not use monofilament in the heading.

#### 2.1.3 Heading

##### 2.1.3.1 Heading Hooks

Slip-in-type, bright zinc-plated, chromium-plated, or nickel-plated steel, and of a size adequate to hold the heading upright. Provide one hook for each pleat.

##### 2.1.3.2 Snap-Tape System (Ripplefold)

Heavy vinyl or nylon tape with locking fasteners attached to tape to form desired pleat spaces and fullness. Cut tapes to size and sew to drapery fabric to form the heading.

#### 2.1.4 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.

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NOTE: 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.

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[Stationary] [and] [traverse] [wall-mounted rods] [and] [ceiling mounted tracks] of heavy-duty type. [Traverse rods or tracks shall be manually operated, [center close two-way] [one-way draw] [left-to-right] [right-to-left]]. Rods and tracks shall be cold-rolled, commercial quality steel minimum 0.75 mm 0.030 inch thick or extruded aluminum minimum 1.27 mm



0.050 inch thick. Rod and track cross section width and depth shall be sufficient to carry the drapery without sagging. Track configuration (number of channels) shall 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.

#### 2.1.4.1 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.

#### 2.1.4.2 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.

#### 2.1.4.3 Traverse Cord

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**NOTE: When traverse draperies are required, select  
cord tassels or tension pulleys.**  
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Size No. 4 with fiberglass center. Provide cord [tassel with lead weight center and plastic coating] [tension pulley, metal tube type, with mounting bracket, helical spring, and ball bearing pulley wheel]. Finish color, white or off-white.

#### 2.1.4.4 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 (natural)] [bronze] [\_\_\_\_\_] finish.

#### 2.1.4.5 Snap-Tape System Track

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

#### 2.1.5 Fasteners

Zinc or cadmium plated.

## 2.2 FABRICATION

Prior to cutting and fabrication, field measure each drapery location paying particular attention to field conditions affecting the work.

### 2.2.1 Drapery Fabrication

#### 2.2.1.1 Panels

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**NOTE: Select fullness required, enter percentage and edit fullness definition to suit (i.e. 200 percent fullness is defined as 2 times the rod width plus overlaps and returns.) Select appropriate length.**

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Make from full or half widths of fabric to give a minimum of [200] [250] [300] [\_\_\_\_\_] percent fullness. [\_\_\_\_\_] percent fullness is defined as [2] [2 1/2] [3] [\_\_\_\_\_] times the rod width plus overlaps and returns. Provide [conventional french pleats] [ripplefold]. Draperies shall be [floor] [sill] [apron] length. [Floor length draperies shall hang 25 mm one inch above finish floors.] [Sill length draperies shall hang 13 mm 1/2 inch above window sills and heating-air conditioning units.] [Apron length draperies shall hang 25 mm one inch below bottom of window aprons.] Provide table-sized drapery panels with a plus or minus tolerance of 6 mm 1/4 inch accurately laid-out before cutting. Cut fabric to allow for pleats and for outside ends to return to the walls. For traverse draperies, allow for a minimum overlap of 75 mm 3 inches at the center. Accurately match patterned fabrics to provide identical designs horizontally and vertically on each window within each room. Where variations in length or placement of windows occur in a room, match patterns horizontally. When fabricating panels from fabrics which require special methods or instructions, conform to the workroom instructions provided by the fabric manufacturer. Sew seams and hems using a firm interlocking stitch at a stitch rate per millimeter inch appropriate to fabric being sewn. Sew with enough slack present so that thread shrinkage due to laundering and dry cleaning will not pucker seams and hems. Do not expose seam and hem raw edges.

#### 2.2.1.2 Headings

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**NOTE: This specification covers conventional triple french pleat and ripplefold construction and heavy-duty rodding. Special "architectural" type patented pleating systems are not included. Where special heading treatment is required, appropriate requirements should be incorporated into the project specification.**

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Pleat evenly to required widths. Make headings 100 mm 4 inches high with triple french pleats, and double fold. Include permanent finish stiffener of buckram, crinoline, or pellon across entire heading. Paper stiffening is not acceptable. Machine stitch pleats for a depth of at least 95 millimeters 3 3/4 inches. Do not use horizontal stitching across the width of the heading.

#### 2.2.1.3 Seams

Join widths by serging, overlock, and safety stitch. Retain selvage when practical.

#### 2.2.1.4 Hems

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**NOTE: When sheer fabrics are used, suitable cotton covered beaded tape should be specified in lieu of standard covered weights for better appearance.**  
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Double fold hems (top and bottom) and blind stitch so as not to show on the panel face. Make side seams 38 mm 1 1/2 inches wide and bottom seams 100 mm 4 inches deep with weights sewn 13 mm 1/2 inch above hem bottom. Provide weights at corners and each vertical seam. When lining is attached to the drapery fabric, single fold heading is acceptable, however, double fold the bottom hem.

#### 2.2.2 Lining Fabrication

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**NOTE: Delete this paragraph if unlined draperies are specified.**  
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Lock stitch lining to the back of the fabric panel. Hem fabric panel and lining panel separately at the bottom.

#### 2.2.3 Tie-Backs

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**NOTE: Delete this paragraph if drapery tie-backs are not required. Specify tie-back materials, if other than same as draperies. Specify tie-back width and length, if other than specified.**  
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Make from [same material as draperies] [\_\_\_\_], [75] [\_\_\_\_] millimeters wide by [750] [\_\_\_\_] millimeters [3] [\_\_\_\_] inches wide by [30] [\_\_\_\_] inches long. Fabricate from a double thickness of fabric, press flat to provide specified width, and locate seam at the bottom fold so as to permit the tie-back to be reversible. Provide bone or plastic ring end fastenings to loop over tie-back hooks.

#### 2.2.4 Valances

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**NOTE: Delete paragraph if valances not required.**  
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[Rod-hung, fabricated in the same manner as draperies and of [same material] [\_\_\_\_].] [Box-type, with sides and top constructed of 25 mm one inch thick [softwood pine] [\_\_\_\_], and 10 mm 3/8 inch thick plywood front. Cover front, sides and bottom edges of valance with batting, stretch fabric [and trim] evenly and neatly over valance exterior, and fasten to the inside. Provide [same fabric as draperies] [\_\_\_\_]. Paint interior of valance. Shape valance bottom front edge [straight] [\_\_\_\_].] Make valance

of required width to span the window, and [\_\_\_\_\_] millimeters inches high. Make depth of valance adequate to ensure proper appearance and to permit proper operation of traverse draperies.

### PART 3 EXECUTION

#### 3.1 EXAMINATION

Ensure that work of other trades and cleaning operations are completed.

#### 3.2 INSTALLATION

Install draperies in rooms and areas [indicated] [as scheduled herein]. Include all material indicated, specified, or necessary for a complete finished drapery installation. Contractor shall be responsible for the required quantities of draperies and hardware.

##### 3.2.1 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. Provide fasteners for installation as follows:

<u>Fastener</u>	<u>Structural Material</u>
Wood or sheet metal screw	Wood
Self tapping screw	Metal
Case hardened, self-tapping sheet metal screw	Sheet metal
Screw or bolt in expansion shield	Solid masonry
Toggle or molly bolt	Hollow masonry, wallboard, plaster

##### 3.2.2 Draperies

Install with a minimum clearance of 6 mm 1/4 inch between the ceiling and top of drapery heading. Floor length draperies shall hang 25 mm one inch above finished floors; sill length, 13 mm 1/2 inch above window sills and heating-air conditioning units; and apron length, 25 mm one inch below bottom of window aprons. Insert heading hooks at rear of each pleat, placed to obtain the clearance specified. Press well before hanging, except fiberglass. Dress-down and adjust hung draperies to provide best form and appearance. Traverse draperies shall operate smoothly and easily over the full range of travel. Remove incorrectly sized drapery and remake to correct size. Remove damaged, spotted, or otherwise defective fabric and repair to original state or replace with new material.

### 3.2.3 Valances

Install with top edge parallel to ceiling.

### 3.3 DRAPERY SCHEDULE

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NOTE: Some projects require several drapery treatments. Where such variations exist, a drapery schedule made a part of this section or should be included in the drawings. The schedule and any necessary detailed drawings should be cross-referenced. Schedule and drawing data should include all necessary information, such as: areas and rooms to receive draperies; size and placement of each; type and location of rods or tracks, (ceiling-hung, stationary, center close two-way, etc.); drapery length, (floor, sill, or apron); whether lined or unlined; fabric type, color, and pattern unless covered in paragraph entitled "Fabrics."

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-- End of Section --