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USACE / NAVFAC / AFCEC / NASA UFGS-12 22 00 (August 2016)  
Change 1 - 08/18  
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Preparing Activity: NAVFAC Superseding  
UFGS-12 22 00 (August 2010)

## UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated July 2018

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### SECTION TABLE OF CONTENTS

#### DIVISION 12 - FURNISHINGS

##### SECTION 12 22 00

##### CURTAINS AND DRAPES

08/16

#### PART 1 GENERAL

- 1.1 REFERENCES
- 1.2 SUBMITTALS
- 1.3 CERTIFICATIONS
  - 1.3.1 Indoor Air Quality Certifications
    - 1.3.1.1 Fabrics
- 1.4 DRAWINGS
- 1.5 SYSTEM REQUIREMENTS
- 1.6 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 Motor and Controller
    - 2.1.4.6 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
  - 3.3.1 IDENTIFICATION

-- End of Section Table of Contents --

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### SECTION 12 22 00

#### CURTAINS AND DRAPES 08/16

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

Note: Use Section 12 21 00 for WINDOW BLINDS

Note: Use Section 12 24 13 for ROLLER WINDOW SHADES

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.

This guide specification includes tailoring options for Motorized Drapery Rods. Selection or deselection of a tailoring option (select view-tailoring options) will include or exclude that option in the section. Specific project editing is still required for the resulting section.

Motorized drapery systems must be coordinated with electrical and HVAC systems (energy conservation measures), as well as the drapery manufacturer to verify weight and related carrying hardware.

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

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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.
6. Indicate motor location and any integrated components or accessories.

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## PART 1 GENERAL

### 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 Reference Identifier (RID) outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature to update the issue dates.

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

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

#### ASTM INTERNATIONAL (ASTM)

ASTM D3691/D3691M	(2009) Standard Performance Specification for Woven, Lace, and Knit Household Curtain and Drapery Fabrics
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CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)

CDPH SECTION 01350 (2010; Version 1.1) 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 (2015) 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 (2013) GREENGUARD Certification Program  
For Chemical Emissions For Building  
Materials, Finishes And Furnishings

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.

The Guide Specification technical editors have  
designated 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 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.

The "S" following a submittal item indicates that  
the submittal is required for the Sustainability  
eNotebook to fulfill federally mandated sustainable  
requirements in accordance with Section 01 33 29  
SUSTAINABILITY REPORTING. Locate the "S" submittal  
under the SD number that best describes the  
submittal item.

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

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Government approval is required for submittals with a "G" designation;  
submittals not having a "G" designation are [for Contractor Quality Control  
approval.][for information only. When used, a designation following the  
"G" designation identifies the office that will review the submittal for  
the Government.] Submittals with an "S" are for inclusion in the  
Sustainability eNotebook, in conformance with Section 01 33 29  
SUSTAINABILITY REPORTING. Submit the following in accordance with Section  
01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Drawings; G[, [\_\_\_\_\_]]

SD-03 Product Data

Drapery System

SD-04 Samples

Drapery Fabric; 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.

Motor and Controller; G[, [\_\_\_\_\_]]

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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.**

\*\*\*\*\*

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-07 Certificates

Indoor Air Quality for Fabrics; S

## SD-08 Manufacturer's Instructions

Drapery Hardware

Motor and Controller

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[, [\_\_\_\_\_]]

Motor and Controller

Submit in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA.

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NOTE: The Government's preference is for use of products that have been certified for indoor air quality by a third-party organization such as Greenguard or SCS Global Services. However, it must be verified there is a certified product available that is both cost effective and appropriate for the project. Retain the bracketed sentences when the designer of record confirms local/regional availability of Greenguard or SCS products that does not impact cost effectiveness. In addition, when these sentences are retained requiring Greenguard or SCS products, also include the Indoor Air Quality Certificates in SD-07 submittals of this section.

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### [1.3 CERTIFICATIONS

#### 1.3.1 Indoor Air Quality Certifications

##### 1.3.1.1 Fabrics

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.

### ]1.4 DRAWINGS

Submit drawings indicating the following:

Windows and other locations requiring drapery extent of drapery, to ceiling or to specific height above windows; location of each different drapery fabric when more than one type, pattern or color is to be provided; width of window and width of drapery extension if bay window. Motor and Controller location and any integrated components or accessories.

## 1.5 SYSTEM REQUIREMENTS

Submit data for completed drapery system in accordance with Section 01 78 23 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). 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.

## 1.6 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

Provide fabrics meeting the emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type). Provide certification or validation of indoor air quality for 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 D3691/D3691M. Provide fabric manufactured from [man-made] [or]  
[natural] fibers. Fabric physical characteristics must 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

\*\*\*\*\*  
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: NFPA 701 includes small and large scale test  
procedures. The large scale test is more severe  
than the small scale test. 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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NFPA 701. Drapery fabric and lining must pass the [small] [and] [large] scale test. Treatment to enhance flame resistance must be [permanent] [renewable] type. If treated, fabric must pass the [small] [and] [large] scale test after being subjected to the accelerated dry cleaning or laundering cycles specified in NFPA 701.

#### 2.1.1.2 Sewing Thread

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

#### 2.1.1.3 Heading

##### 2.1.1.3.1 Heading Hooks

Slip-in-type, [ bright zinc-plated] [ chromium-plated,] [ nickel-plated steel,] and of a size adequate to hold the heading upright. Provide one hook for each pleat. Provide 10 percent [\_\_\_\_\_] surplus hooks for possible lost or damaged hooks.

##### 2.1.1.3.2 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.

#### 2.1.1.4 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 must be [manually operated][motorized], [center close two-way] [one-way draw] [left-to-right] [right-to-left]]. Rods and tracks must 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 must be sufficient to carry the drapery without sagging. Track configuration (number of channels) must be such so as to permit drapery operation as specified or indicated. Finish steel components with a [white] [\_\_\_\_\_] baked enamel, vinyl, or epoxy coating as standard with the manufacturer. Finish aluminum components with [an anodic [clear (natural)] [bronze] [\_\_\_\_\_] coating] [a baked enamel, vinyl, or epoxy coating] as standard with the manufacturer. Provide smooth and non-sticking sliding surfaces. Provide one-piece rod and track up to 4875 mm 16 feet long. Provide steel brackets and intermediate supports. Provide one manufacturer's design throughout.

#### 2.1.4.1 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 Motor and Controller

Provide motor[s] for [single][double] track system, complete with remote controller and manufacturer's instructions for installation and operation. Verify motor size is adequate for drapery system to be installed. Coordinate with [existing][new] electrical system for power supply and location of motor mounting. [Coordinate thermostatic setting instructions for automated systems.]

#### 2.1.4.6 Snap-Tape System Track

Dovetail slots in clear folding linkage. Provide one-piece molded plastic

snap tab type carriers with snap-on components sewn to drapery heading.

#### 2.1.5 Fasteners

Provide [zinc][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 must be [floor] [sill] [apron] length. [Floor length draperies must hang 25 mm 1 inch above finish floors.] [Sill length draperies must hang 13 mm 1/2 inch above window sills and heating-air conditioning units.] [Apron length draperies must hang 25 mm 1 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.**  
\*\*\*\*\*

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 pella 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.**  
\*\*\*\*\*

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.**  
\*\*\*\*\*

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

\*\*\*\*\*  
**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.**  
\*\*\*\*\*

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

\*\*\*\*\*  
**NOTE: Delete paragraph if valances not required.**  
\*\*\*\*\*

[Rod-hung, fabricated in the same manner as draperies and of [same material] [\_\_\_\_].] [Box-type, with sides and top constructed of 25 mm 1

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. Test completed installation to ensure smooth and continuous operation of all draperies, hardware and accessories.

### 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 is responsible for the required quantities of draperies and hardware.

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

#### 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 must hang 25 mm 1 inch above finished floors; sill length, 13 mm 1/2 inch above window sills and heating-air conditioning units; and apron length, 25 mm 1 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 must 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 FABRICS.  
 \*\*\*\*\*

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

] [Provide window covering as follows:

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

#### ] 3.3.1 IDENTIFICATION

\*\*\*\*\*  
**NOTE:** Projects requiring large quantities of window treatments or a variety of window treatment types may need a numbering plan.  
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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.

-- End of Section --