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USACE / NAVFAC / AFCEC / NASA **UFGS-09 84 20 (August 2016)**
Change 1 - 08/18

Preparing Activity: USACE **Superseding**
UFGS-09 83 13 (August 2010)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated July 2023
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08/16, CHG 1: 08/18

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SECTION 09 84 20

ACOUSTICAL WALL PANELS
08/16, CHG 1: 08/18

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NOTE: This guide specification covers the requirements for fabric covered acoustical wall panel systems.

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).

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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 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.

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)

AATCC 16	(2004; E 2008; E 2010) Colorfastness to Light

AMERICAN FOREST FOUNDATION (AFF)

ATFS STANDARDS	(2015) American Tree Farm System Standards of Sustainability 2015-2020

ASTM INTERNATIONAL (ASTM)

ASTM C423	(2023) Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
ASTM D5034	(2009; R 2017) Standard Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test)
ASTM E84	(2023) Standard Test Method for Surface Burning Characteristics of Building Materials

CALIFORNIA AIR RESOURCES BOARD (CARB)

CARB 93120	(2007) Airborne Toxic Control Measure (ATCM) to Reduce Formaldehyde Emissions from Composite Wood Products

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

CSA GROUP (CSA)

CSA Z809-08	(R2013) Sustainable Forest Management

FOREST STEWARDSHIP COUNCIL (FSC)

FSC STD 01 001	(2015) Principles and Criteria for Forest Stewardship

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 101	(2021; TIA 21-1) Life Safety Code

PROGRAMME FOR ENDORSEMENT OF FOREST CERTIFICATION (PEFC)

PEFC ST 2002:2013	(2015) PEFC International Standard Chain of Custody of Forest Based Products Requirements

SUSTAINABLE FOREST INITIATIVE (SFI)

SFI 2015-2019	(2015) Standards, Rules for Label Use, Procedures and Guidance

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, 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

Approved Detail Drawings; G[, [_____]]

SD-03 Product Data

Installation

Acoustical Wall Panels; G[, [_____]]

Recycled Content for Wood Panels; S

Recycled Content for Fabric Panels; S

Indoor Air Quality for Composite Wood and Agrifiber Products; S

SD-04 Samples

Acoustical Wall Panels; G[, [_____]]

SD-07 Certificates

Acoustical Wall Panels

Certified Sustainably Harvested Wood; S

SD-11 Closeout Submittals

Warranty

[1.3 CERTIFICATIONS

1.3.1 Certified Sustainably Harvested Wood

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NOTE: Use certified sustainably harvested wood where suitable for application and cost effective. Sustainably Harvested Wood is a product which comes from a third-party Forestry Certification Program and thus carries certain characteristics: 1) Protection of biodiversity, species at risk and wildlife habitat, sustainable harvest levels, protection of water quality, and prompt regeneration (e.g., replanting and reforestation); 2) Third-party certification audits performed by accredited certification bodies; 3) Publicly available certification audit summaries; 4) Multi-stakeholder involvement in a standards development process; 5) Complaints and appeals process.

Verify suitability, availability within the region, cost effectiveness and adequate competition before specifying these sustainably harvested wood certifications - if these conditions are verified for the project locale, include the following section. For projects pursuing LEED, delete certifications other than FSC; for all other

projects pursuing third-party certification allow the entire list of third party certifications.
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Provide wood certified as sustainably harvested by FSC STD 01 001[, ATFS STANDARDS, CSA Z809-08, SFI 2015-2019s, or other third party program certified by PEFC ST 2002:2013]. Provide a letter of Certification of Sustainably Harvested Wood signed by the wood supplier. Identify certifying organization and their third party program name and indicate compliance with chain-of-custody program requirements. Submit sustainable wood certification data; identify each certified product on a line item basis. Submit copies of invoices bearing certification numbers.

]1.4 DELIVERY, STORAGE, AND HANDLING

Protect materials delivered and placed in storage from the weather, humidity and temperature variations, dirt, dust, or other contaminants.

1.5 WARRANTY

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

PART 2 PRODUCTS

2.1 SYSTEM DESCRIPTION

2.1.1 Design

Provide [wood][fabric wrapped mineral / glass-fiber core] acoustical wall panel materials in the manufacturer's standard sizes and finishes of the type, design and configuration indicated.

[2.1.1.1 Wood Recycled Content

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NOTE: Use materials with recycled content, calculated on the basis of post-industrial and post-consumer percentage 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 wood panels are available from US national manufacturers above the minimum recycled content percentages shown below. Some manufacturers and regions have higher percentages. Based on research, insert desired minimum percentages into the empty set of brackets.
****

Wood Panels must contain a minimum of [50][_____] percent recycled content. Provide data identifying percentage of recycled content for wood panels.

][2.1.1.2 Sustainably Harvested Wood

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NOTE: Use certified sustainably harvested wood where suitable for application and cost effective. Verify suitability, availability within the region, cost effectiveness, and adequate competition before specifying this certification.

****

Wood Panels must contain a minimum of [50][_____] percent certified sustainably harvested wood. Provide documentation that certified sustainably harvested wood is used and identify percentage.

][2.1.1.3 Fabric Recycled Content

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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.

Based on research, recycled content percentages of fabric panels varies among national manufacturers. Designer must research acceptable products and insert minimum percentage in the empty bracket below.

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Fabric Panels must contain a minimum of [_____] percent recycled conten. Provide data identifying percentage of recycled content for fabric panels.

Composite wood and agrifiber products must contain no added urea-formaldehyde resins. Products containing composite wood and agrifiber components must meet emissions requirements of either CARB 93120 or CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type). Provide validation of indoor air quality for composite wood and agrifiber products.

]2.2 FABRIC COVERED ACOUSTICAL WALL PANELS

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NOTE: Drawings must show locations and dimensions of acoustical panels, details of joints, base, head, and mounting details.

The same or similar acoustical benefits can possibly be obtained by other means such as wall covering, etc.

Omit the following items that do not meet project requirements.

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Provide acoustical wall panels consisting of prefinished, factory assembled, seamless fabric covered, fiber glass or mineral fiber core system as described below manufactured to the dimensions and

configurations shown on the approved detail drawings; submit drawings showing plan locations, elevations and details of method of anchorage, location of doors and other openings, base detail and shape and thickness of materials. Perimeter edges must be [non-reinforced.] [reinforced by either an aluminum frame or a formulated resin edge hardener.] Acoustical wall panels must comply with the interior finish requirements of NFPA 101. Submit manufacturer's descriptive data and catalog cuts; fabric and vinyl swatches, minimum 450 mm 18 inches wide by 600 mm 24 inches long [3] [_____] samples of each color range specified; and certificates of compliance from an independent laboratory accredited by the National Laboratory Accreditation Program of the National Institute of Standards. A label or listing from the testing laboratory will be acceptable evidence of compliance. Wall panels must conform to the following:

2.2.1 Panel Width

[Widths must be [600] [750] [1200] [1500] mm [24] [30] [48] [60] inches] [End panels may vary in width as necessary to cover wall] [Panel width must be as detailed.]

2.2.2 Panel Height

[Heights must be [2400] [2700] [3000] mm [96] [108] [120] inches.] [[Field measures panels for custom fit to ceiling.] [Tolerance at floor as detailed].] [Panel height must be as detailed.]

2.2.3 Thickness

[Panel thickness as required to meet the indicated NRC range] [_____].

2.2.4 Fabric Covering

Seamless [non-woven, embossed texture, needle punched 100 percent polyester, minimum 0.034 kg/linear meter 11 ounces/linear yard. Tear strength a minimum 110 N 25 pounds machine direction and minimum 178 N 40 pounds cross-machine direction. Tensile strength a minimum 220 N 50 pounds machine direction and minimum 330 N 75 pounds cross-machine direction in accordance with ASTM D5034.] [plain woven 2-ply 100 percent polyester, minimum 0.47 kg/linear meter 15 ounces/linear yard. Tear strength a minimum 129 N 29 pounds. Tensile strength 667 N 150 pounds minimum in accordance with ASTM D5034.] [perforated vinyl covering with fabric backing, minimum 0.62 kg/linear meter 20 ounces/linear yard total weight.] Stretch fabric covering free of wrinkles and then bond to the edges and back or bond directly to the panel face, edges, and back of panel a minimum distance standard with the manufacturer. Light fastness (fadeometer) approximately 40 hours in accordance with AATCC 16.

2.2.5 Fire Rating for the Complete Composite System

Class A, 200 or less smoke density and flame spread less than 25, when tested in accordance with ASTM E84.

2.2.6 Substrate

Fiber glass or mineral fiber

2.2.7 Noise Reduction Coefficient (NRC) Range

[0.50-0.60] [0.80-0.90] [_____] ASTM C423

2.2.8 Edge Detail

[Half bevel] [Bevel] [Radius] [Square] [Mitered] [_____] edge with fabric wrapped on all four sides.

2.2.9 Core Type

[Standard acoustical] [High impact acoustical] [Acoustical/tackable] [_____] core

2.2.10 Mounting Acoustical Panels

Mount acoustical panels by manufacturer's standard [concealed spline] [mechanical fasteners] [magnetic fasteners] [hook and loop] [adhesive mounting] [_____].

2.3 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 drawing is used when the project is designed by an Architect or Interior designer. Select color from manufacturers standard colors or identified as a manufacturers color in this specification only when the project is very simple and has minimal finishes.

When the Government directs that color be located in the drawings add a note 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."

Prior to specifying a custom color finish, research to determine if additional cost and lead time is feasible. Note there is often a minimum order requirement; this requirement will also affect future orders.

When a manufacturer's name, stock number, pattern, and color is used, be certain that the product conforms to this specification, as edited.

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[In accordance with Section 09 06 00 SCHEDULES FOR FINISHES] [As indicated] [Selected from manufacturers standard colors] [[_____]. Color listed is not intended to limit the selection of equal colors from other manufacturers.]

PART 3 EXECUTION

3.1 SURFACE CONDITIONS

Must be clean, smooth, oil free and prepared in accordance with panel manufacturer's instructions. Do not begin installation until all wet work, such as, plastering, painting, and concrete are completely dry.

3.2 INSTALLATION

Panel installation must be by personnel familiar with and normally engaged in installation of acoustical wall panels. Apply panels in accordance with the manufacturer's installation instructions. Submit manufacturer's installation instructions and recommended cleaning instructions.

3.3 CLEANING

Following installation, clean dirty or stained panel surfaces in accordance with manufacturer's instructions and leave free from defects. Remove and replace panels that are damaged, discolored, or improperly installed.

-- End of Section --