
USACE / NAVFAC / AFCEC / NASA UFGS-10 26 00 (August 2017)
Change 1 - 02/18

Preparing Activity: USACE Superseding
UFGS-10 26 00(August 2010)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated January 2018

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08/17

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SECTION 10 26 00

WALL AND DOOR PROTECTION 08/17

NOTE: This guide specification covers the requirements for corner guards, wall guards (bumper guards), door protectors, and wall panels.

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: Army facilities not excluded by TI 800-01 Design Criteria will be accessible in accordance with 36 CFR, Part 1191, Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities.

Drawings should show basic profiles and details but should not be so explicit as to become proprietary in nature. The following information must be shown on the project drawings:

1. Locations of wall and corner guards.
2. Locations of handrails, wall panels, and door

protectors.

3. Mounting and anchorage details, and dimensions.

1.1 REFERENCES

NOTE: This paragraph is used to list the publications cited in the text of the guide specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.

Use the Reference Wizard's Check Reference feature when you add a RID outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature to update the issue dates.

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

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

ALUMINUM ASSOCIATION (AA)

AA DAF45 (2003; Reaffirmed 2009) Designation System for Aluminum Finishes

ASTM INTERNATIONAL (ASTM)

ASTM A240/A240M (2017) Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications

ASTM B221 (2014) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes

ASTM D256 (2010) Determining the Izod Pendulum Impact Resistance of Plastics

ASTM D543 (2014) Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents

ASTM D635 (2014) Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position

ASTM E84 (2017) Standard Test Method for Surface Burning Characteristics of Building Materials

ASTM G21 (2015) Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

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

GREEN SEAL (GS)

GS-36 (2013) Adhesives for Commercial Use

NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM)

NAAMM AMP 500 (2006) Metal Finishes Manual

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 80 (2016; TIA 16-1) Standard for Fire Doors and Other Opening Protectives

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

SCS SCS Global Services (SCS) Indoor Advantage

SOCIETY OF AUTOMOTIVE ENGINEERS INTERNATIONAL (SAE)

SAE J1545 (2005; R 2014) Instrumental Color Difference Measurement for Exterior Finishes, Textiles and Colored Trim

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)

SCAQMD Rule 1168 (2017) Adhesive and Sealant Applications

UNDERWRITERS LABORATORIES (UL)

UL 2818 (2013) GREENGUARD Certification Program For Chemical Emissions For Building Materials, Finishes And Furnishings

1.2 SUBMITTALS

NOTE: Review submittal description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list to reflect only the submittals required for the project.

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.

Use the "S" classification only in SD-11 Closeout Submittals. 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.

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

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

SD-02 Shop Drawings

Corner Guards; G[, [_____]]

Wall Guards (Bumper Guards); G[, [_____]]

Door Protectors; G[, [_____]]

Wall Covering/Panels; G[, [_____]]

SD-03 Product Data

Corner Guards; G[, [_____]]

Wall Guards (Bumper Guards); G[, [_____]]

Door Protectors; G[, [_____]]

Wall Covering/Panels; G[, [_____]]

SD-04 Samples

Finish; G[, [_____]]

SD-06 Test Reports

Corner Guards

Wall Guards (Bumper Guards)

Door Protectors

Wall Covering/Panels

SD-07 Certificates

Corner Guards

Wall Guards (Bumper Guards)

Door Protectors

Indoor Air Quality

SD-11 Closeout Submittals

- [Recycled content for aluminum component of corner guards; S]
- [Recycled content for steel component of corner guards; S]
- [Recycled content for aluminum component of wall guards, Combination Handrail/Wall guard and handrails; S]
- [Recycled content for aluminum component of wall guards/bed locators; S]
- [Recycled content for aluminum component of combination handrail/wall guards; S]
- [Recycled content for aluminum component of handrails; S]
- [Indoor air quality for wall covering/panels; S]
- [Indoor air quality for adhesives; S]

1.3 CERTIFICATIONS

1.3.1 Indoor Air Quality

1.3.1.1 Wall Covering/Panels

Provide sheet and high impact resistant resilient materials 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.

1.3.1.2 Adhesives and Sealants

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.

1.4 DELIVERY, STORAGE, AND HANDLING

Deliver materials to the project site in manufacturer's original unopened containers with seals unbroken and labels and trademarks intact. Keep materials dry, protected from weather and damage, and stored under cover. Materials must be stored at approximately 21 degrees C 70 degrees F for at least 48 hours prior to installation.

1.5 WARRANTY

Provide manufacturer's standard performance guarantees or warranties that extend beyond a 1 year period.

PART 2 PRODUCTS

2.1 STANDARD PRODUCTS

**NOTE: All paragraphs must be carefully edited
because of the broad number of possible requirements
and the diverse combinations available with these
products.**

To the maximum extent possible, corner guards, door and door frame protectors, wall guards (bumper guards), wall panels and wall covering must be the standard products of a single manufacturer and must be furnished as detailed. Drawings show general configuration of products required, and items differing in minor details from those shown will be acceptable.

2.1.1 Resilient Material

Provide resilient material consisting of high impact resistant extruded acrylic vinyl, polyvinyl chloride, or injection molded thermal plastic conforming to the following:

2.1.1.1 Minimum Impact Resistance

Minimum impact resistance must be 960.8 N-m/m 18 ft-lbs/sq. inch when tested in accordance with ASTM D256, (Izod impact, ft-lbs per sq inch notched).

2.1.1.2 Fire Rating

Fire rating must be Class 1 when tested in accordance with ASTM E84, having a maximum flame spread of 25 and a smoke developed rating of 450 or less. Material must be rated self extinguishing when tested in accordance with ASTM D635. Material must be labeled and tested by an approved nationally known testing laboratory. Resilient material used for protection on fire rated doors and frames must be listed by the testing laboratory performing

the tests. Resilient material installed on fire rated wood/steel door and frame assemblies must have been tested on similar type assemblies. Test results of material tested on any other combination of door/frame assembly will not be acceptable.

2.1.1.3 Integral Color

Colored components must have integral color and must be matched in accordance with SAE J1545 to within plus or minus 1.0 on the CIE-LCH scales.

2.1.1.4 Chemical and Stain Resistance

Materials must be resistant to chemicals and stains reagents in accordance with ASTM D543.

2.1.1.5 Fungal and Bacterial Resistance

Materials must be resistant to fungi and bacteria in accordance with ASTM G21, as applicable.

2.2 CORNER GUARDS

**NOTE: For medical facilities, corner guards must
extend from floor to ceiling.**

2.2.1 Resilient Corner Guards

Corner guard units must be [flush mounted] [surface mounted] type, radius formed to profile shown. Corner guards must [extend from floor to ceiling.] [be [_____] mm feet high.] Mounting hardware, cushions, and base plates must be furnished. Assembly must consist of a snap-on corner guard formed from high impact resistant resilient material, mounted on a continuous aluminum retainer. Extruded aluminum retainer must conform to ASTM B221, alloy 6063, temper T5 or T6. Provide aluminum components that contain a minimum of 35 percent recycled content. Provide data identifying percentage of recycled content for aluminum component of corner guards. Flush mounted type guards must act as a stop for adjacent wall finish material. Factory fabricated end closure caps must be furnished for top and bottom of surface mounted corner guards. Flush mounted corner guards installed in fire rated wall must maintain the rating of the wall. Insulating materials that are an integral part of the corner guard system must be provided by the manufacturer of the corner guard system. Exposed metal portions of fire rated assemblies must have a paintable surface.

2.2.2 Stainless Steel Corner Guards

Stainless steel corner guards must be fabricated of [1.3 mm 16 gauge][0.9 mm 18 gauge] thick material conforming to ASTM A240/A240M, type 302 or 304. Provide stainless steel base material that contains a minimum of 60 percent recycled content. Provide data identifying percentage of recycled content for steel component of corner guards. Corner guards must [extend from floor to ceiling.] [be [_____] mm feet high.] Corner guard must be formed to dimensions shown.

2.3 WALL GUARDS (BUMPER GUARDS)

2.3.1 Wall Guards, Combination Handrail/Wall Guards and Handrails

Wall guards, combination handrail/wall guards, and handrails must be provided with prefabricated end closure caps, inside and outside corners, concealed splices, cushions, mounting hardware and other accessories standard with the manufacturer. Extruded aluminum retainers must conform to ASTM B221, alloy 6063, temper T5 or T6. Provide aluminum components that contain a minimum of 35 percent recycled content. Provide data identifying percentage of recycled content for aluminum component of wall guards, combination handrail/wall guard and handrails. End caps and corners must be field adjustable to assure close alignment with handrails and wall guards. [Wall guards] [Combination handrail/wall guards] must have profile [as shown] [as shown with [vinyl] [carpet] [_____] inserts].

2.3.2 Wall Guards/Bed Locators

Wall guards must consist of snap-on covers of high impact resistant resilient material, minimum 1.98 mm 0.078 inch thick, mounted over [50] [_____] mm [2] [_____] inch wide aluminum, minimum 1.57 mm 0.062 inch thick retainer, anchored to wall at maximum 600 mm 24 inches on center. Provide aluminum components that contain a minimum of 35 percent recycled content. Provide data identifying percentage of recycled content for aluminum component of wall guards/bed locators.

2.3.3 Combination Handrail/Wall Guards

Combination handrail/wall guards must consist of snap-on covers of high impact resistant resilient material, minimum 1.98 mm 0.078 inch thick, on a continuous, extruded aluminum retainer, minimum 1.83 mm 0.072 inch thick anchored to wall at maximum 800 mm 32 inches on center. Provide aluminum components that contain a minimum of 35 percent recycled content. Provide data identifying percentage of recycled content for aluminum component of combination handrail/wall guards.

2.3.4 Handrails

Handrails must consist of snap-on covers of high impact resistant resilient material, minimum 1.98 mm 0.078 inch thick on a continuous extruded aluminum retainer, minimum 1.83 mm 0.072 inch thick anchored to wall at maximum 800 mm 32 inches on center. Provide aluminum components that contain a minimum of 35 percent recycled content. Provide data identifying percentage of recycled content for aluminum component of handrails. Handrails must be provided with prefabricated end closure caps, inside and outside corners, concealed splices, cushions, mounting hardware and other accessories standard with the manufacturer. End caps and corners must be field adjustable to assure close alignment with handrails.

2.4 DOOR PROTECTORS

[Door] [Door envelope] [Door knob] [and] [door frame] protection items must consist of high impact resistant acrylic vinyl or polyvinyl chloride resilient material, minimum [1.52 mm 0.060 inch thick for doors] [and] [0.89 mm 0.035 inch thick for door frames]. Coordinate door and door frame protection material requirements with door and frame suppliers to insure fit for all components and color matching with other resilient materials. Provide adhesive as recommended by resilient material manufacturer.

2.5 WALL COVERING/PANELS

NOTE: Recommended locations for various thicknesses of rigid wall covering/panels are as follows: 0.50 to 1.02 mm 0.022 to 0.040 inch thick for lobbies and elevator areas, 1.52 to 2.03 mm 0.060 to 0.080 inch thick for service corridors, and 2.38 to 3.1 mm 0.093 to 0.125 inch thick for loading dock areas. A 9.53 mm 0.375 inch thick composite wall panel is recommended for installation over existing substrates such as ceramic tile, masonry block, or damaged plaster/drywall.

Provide wall covering/panels consisting of high impact rigid acrylic vinyl or polyvinyl chloride resilient material. Panel sizes must be [600 mm x 1220 mm] [2 x 4 feet] [_____]. Submit fire rating and extinguishing test results for resilient material. Also submit statements attesting that the items comply with specified fire and safety code requirements. Provide wall covering material used on the interior of the building (defined as inside of the weatherproofing system) that meets either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) the VOC content requirements of SCAQMD Rule 1168, or VOC content requirements of GS-36. Provide certification of indoor air quality for wall covering/panels.

2.5.1 Rigid Vinyl Acrylic Wall Covering

Wall covering thickness must be [0.56] [0.71] [1.02] [1.52] mm [0.022] [0.028] [0.040] [0.375] inch.

2.5.2 High Impact Wall Panels

Wall panel face and edge thickness must be [0.56] [0.71] mm [0.022] [0.028] inch. Panel face must be factory banded to a 9.53 mm 0.375 inch thick fiberboard core. The backside of the panel must be laminated with a moisture resistant vapor barrier.

2.6 TRIM, FASTENERS AND ANCHORS

Provide vinyl trim, fasteners and anchors for each specific installation as shown.

2.7 FINISH

Submit [three] [_____] samples indicating color and texture of materials requiring color and finish.

2.7.1 Aluminum Finish

NOTE: On small projects, specify finish of aluminum by using description and not the Aluminum Association designations.

Finish for aluminum must be in accordance with AA DAF45. Exposed aluminum must be designation [[AA-C22A31] [_____] chemically etched medium matte,

with clear anodic coating] [[AA-C22A32] [_____] chemically etched medium matte with integrally colored anodic coating] class II architectural coating 0.010 mm 0.4 mil thick. Concealed aluminum shall be mill finish as fabricated, uniform in natural color and free from surface blemishes.

2.7.2 Stainless Steel Finish

Finish for stainless steel must be in accordance with [ASTM A240/A240M, Type 302 or 304] [NAAMM AMP 500], finish number 4.

2.7.3 Resilient Material Finish

NOTE: Coordinate resilient finishes with manufacturers. Certain finishes and textures are not available from some manufacturers.

Finish for resilient material must be [embossed [velour] [stipple] [_____] [[fake woodgrain] [high gloss vinyl]] texture with colors in accordance with SAE J1545.

2.8 ADHESIVES

Adhesive for resilient material must be in accordance with manufacturers recommendations. Provide sealants and non-aerosol adhesive products used on the interior of the building (defined as inside of the weatherproofing system) that meet either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) the VOC content requirements of SCAQMD Rule 1168, or VOC content requirements of GS-36. Provide certification of indoor air quality for adhesives.

2.9 COLOR

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. Color must be selected 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 a note must 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."

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.

Color must be [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 INSTALLATION

Do not install items that show visual evidence of biological growth.

3.1.1 Corner Guards and Wall Guards (Bumper Guards)

Material must be mounted at location indicated in accordance with
manufacturer's recommendations.

3.1.2 Door, Door Frame Protectors, and Wall Panels

Surfaces to receive protection must be clean, smooth, and free of
obstructions. Protectors must be installed after frames are in place, but
prior to hanging of doors, in accordance with manufacturer's specific
instructions. Adhesives must be applied in controlled environment in
accordance with manufacturer's recommendations. Protection for fire doors
and frames must be installed in accordance with NFPA 80.

3.1.3 Stainless Steel Guards

- a. Mount guards on external corners of interior walls, partitions and
columns as [shown] [in accordance with manufacturer's recommendations].
- b. Where corner guards are installed on walls, partitions or columns
finished with plaster or ceramic tile, [anchor corner guards as
indicated] [provide continuous 1.5 mm 16 gage thick, perforated,
galvanized z-shape steel anchors welded to back edges of corner guards
and [wired to metal studs] [expansion bolted to concrete or masonry
with four 10 mm 3/8 inch diameter bolts, spaced 400 mm 16 inches on
centers]]. Coat back surfaces of corner guards, where shown, with a
non-flammable, sound deadening material. Corner guards must overlap
finish plaster surfaces.
- c. Where corner guards are installed on exposed structural glazed facing
tile units or masonry wall, partitions or columns, [anchor corner
guards as indicated] [anchor corner guards to existing walls with 6 mm
1/4 inch oval head stainless steel countersunk expansion or toggle
bolts] [anchor corner guards with four nominal 1.3 mm 0.0516 inch
thick, adjustable galvanized steel anchors, spaced as shown]. Grout
spaces solid between guards and backing with portland cement and sand
mortar.
- d. Where corner guards are installed on gypsum board, clean surfaces and
anchor guards with a neoprene solvent-type contact adhesive

specifically manufactured for use on gypsum board construction. Remove excess adhesive from the guard edges and allow to cure undisturbed for 24 hours.

- e. For wall guards, space brackets at no more than 900 mm 3 feet on centers and anchor to the wall in accordance with the manufacturer's installation instructions.

-- End of Section --