
USACE / NAVFAC / AFCEA / NASA

UFGS-10 26 13 (May 2009)

Preparing Activity: USACE

Superseding

UFGS-10 26 13 (April 2006)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated January 2010

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SECTION 10 26 13

WALL AND CORNER GUARDS 05/09

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

Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable items(s) or insert appropriate information.

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

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).

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 DAF-45 (2003) Designation System for Aluminum Finishes

ASTM INTERNATIONAL (ASTM)

ASTM A 167 (1999; R 2009) Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip

ASTM B 221 (2008) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes

ASTM D 256 (2006e1) Determining the Izod Pendulum Impact Resistance of Plastics

ASTM D 543 (2006) Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents

ASTM D 635 (2006) Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position

ASTM E 84	(2009c) Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM G 21	(1996; R 2002) Determining Resistance of Synthetic Polymeric Materials to Fungi
NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM)	
NAAMM AMP 500	(2006) Metal Finishes Manual
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)	
NFPA 80	(2010) Standard for Fire Doors and Other Opening Protectives
SOCIETY OF AUTOMOTIVE ENGINEERS INTERNATIONAL (SAE)	
SAE J1545	(2005) Instrumental Color Difference Measurement for Exterior Finishes, Textiles and Colored Trim

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. Submittals should be kept to the minimum required for adequate quality control.

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, Air Force, and NASA projects.

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.] Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Corner Guards[; G][; G, [____]]
Wall Guards (Bumper Guards)[; G][; G, [____]]
Door Protectors[; G][; G, [____]]
Wall Covering/Panels[; G][; G, [____]]

Drawings indicating locations and typical elevations of each type of item. Show on the drawings vertical and horizontal dimensions, full size sections, thickness of materials, and fastening details.

SD-03 Product Data

Corner Guards[; G][; G, [____]]
Wall Guards (Bumper Guards)[; G][; G, [____]]
Door Protectors[; G][; G, [____]]
Wall Covering/Panels[; G][; G, [____]]

Manufacturer's descriptive data, catalog cuts, installation instructions, and recommended cleaning instructions.

SD-04 Samples

Finish[; G][; G, [____]]

[Three] [____] samples indicating color and texture of materials requiring color and finish.

SD-06 Test Reports

Corner Guards
Wall Guards (Bumper Guards)
Door Protectors
Wall Covering/Panels

Fire rating and extinguishing test results for resilient material.

SD-07 Certificates

Corner Guards
Wall Guards (Bumper Guards)
Door Protectors
Wall Covering/Panels

Statements attesting that the items comply with specified fire and safety code requirements.

1.3 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 shall be stored at approximately 21 degrees C 70 degrees F for at least 48 hours prior to installation.

1.4 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 shall be the standard products of a single manufacturer and shall 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 shall be 960.8 N-m/m 18 ft-lbs/sq. inch when tested in accordance with ASTM D 256, (Izod impact, ft-lbs per sq inch notched).

2.1.1.2 Fire Rating

Fire rating shall be Class 1 when tested in accordance with ASTM E 84, having a maximum flame spread of 25 and a smoke developed rating of 450 or less. Material shall be rated self extinguishing when tested in accordance with ASTM D 635. Material shall be labeled and tested by an approved nationally known testing laboratory. Resilient material used for protection on fire rated doors and frames shall be listed by the testing laboratory performing the tests. Resilient material installed on fire rated wood/steel door and frame assemblies shall 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 shall have integral color and shall 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 shall be resistant to chemicals and stains reagents in accordance with **ASTM D 543**.

2.1.1.5 Fungal and Bacterial Resistance

Materials shall be resistant to fungi and bacteria in accordance with **ASTM G 21**, 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 shall be [flush mounted] [surface mounted] type, radius formed to profile shown. Corner guards shall [extend from floor to ceiling.] [be [_____] mm feet high.] Mounting hardware, cushions, and base plates shall be furnished. Assembly shall consist of a snap-on corner guard formed from high impact resistant resilient material, mounted on a continuous aluminum retainer. Extruded aluminum retainer shall conform to **ASTM B 221**, alloy 6063, temper T5 or T6. Flush mounted type guards shall act as a stop for adjacent wall finish material. Factory fabricated end closure caps shall be furnished for top and bottom of surface mounted corner guards. Flush mounted corner guards installed in fire rated wall shall maintain the rating of the wall. Insulating materials that are an integral part of the corner guard system shall be provided by the manufacturer of the corner guard system. Exposed metal portions of fire rated assemblies shall have a paintable surface.

2.2.2 Stainless Steel Corner Guards

Stainless steel corner guards shall be fabricated of [**1.3 mm 16 gauge**][**0.9 mm 18 gauge**] thick material conforming to **ASTM A 167**, type 302 or 304. Corner guards shall [extend from floor to ceiling.] [be [_____] mm feet high.] Corner guard shall 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 shall 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 shall conform to **ASTM B 221**, alloy 6063, temper T5 or T6. End caps and corners shall be field adjustable to assure close alignment with handrails and wall guards. [Wall guards] [Combination handrail/wall guards] shall have profile [as shown] [as shown with [vinyl] [carpet] [_____] inserts].

2.3.2 Wall Guards/Bed Locators

Wall guards shall 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.

2.3.3 Combination Handrail/Wall Guards

Combination handrail/wall guards shall 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.

2.3.4 Handrails

Handrails shall 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. Handrails shall 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 shall be field adjustable to assure close alignment with handrails.

2.4 DOOR PROTECTORS

[Door] [Door envelope] [Door knob] [and] [door frame] protection items shall 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 shall be [0.61 x 2.94 m] [2 x 4 ft] [_____].

2.5.1 Rigid Vinyl Acrylic Wall Covering

Wall covering thickness shall 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 shall be [0.56] [0.71] mm [0.022] [0.028] inch. Panel face shall be factory banded to a 9.53 mm 0.375 inch thick fiberboard core. The backside of the panel shall 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

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 shall be in accordance with AA DAF-45. Exposed aluminum shall 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 shall be in accordance with [ASTM A 167, 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 shall be [embossed [velour] [stipple] [_____] [[fake woodgrain] [high gloss vinyl]] texture with colors in accordance with SAE J1545.

2.8 ADHESIVES

Adhesive for resilient material shall be in accordance with manufacturers recommendations.

2.9 COLOR

NOTE: Editing of color reference sentence(s) shall
be coordinated with the Government. Generally
Section 09 06 90 COLOR SCHEDULE or drawing is used
when the project is designed by an Architect or
Interior designer. Color shall 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 shall 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 shall be [in accordance with Section 09 06 90 COLOR SCHEDULE.] [as indicated on the drawings.] [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

3.1.1 Corner Guards and Wall Guards (Bumper Guards)

Material shall 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 shall be clean, smooth, and free of obstructions. Protectors shall be installed after frames are in place, but prior to hanging of doors, in accordance with manufacturer's specific instructions. Adhesives shall be applied in controlled environment in accordance with manufacturer's recommendations. Protection for fire doors and frames shall 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 shall 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 shown on the drawings] [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 --