UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated January 2021
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08/20

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SECTION 10 26 00

WALL AND DOOR PROTECTION
08/20

****
NOTE: This guide specification covers the requirements for corner guards, wall 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

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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 crash rails and corner guards.

2. Locations of wall covering and 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 A167	(2011) Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
ASTM B221	(2014) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM D256	(2010; R 2018) Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics
ASTM D543	(2020) Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents
ASTM D635	(2018) Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position

ASTM E84	(2020) Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM F476	(2014) Standard Test Methods for Security of Swinging Door Assemblies
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 FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 80	(2019) 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

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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

Corner Guards; G[, [_____]]

Wall Guards; G[, [_____]]

Door Protectors; G[, [_____]]

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

SD-03 Product Data

Corner Guards; G[, [_____]]

Wall Guards; G[, [_____]]

Door Protectors; G[, [_____]]

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

[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 crash rail/bed locators; S

][Recycled content for aluminum component of combination handrail/crash rail; S

][Recycled content for aluminum component of handrails; S

] SD-04 Samples

Corner Guards; G[, [_____]]

Wall Guards; G[, [_____]]

Door Protectors; G[, [_____]]

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

SD-06 Test Reports

Fire Resistance Rating

SD-07 Certificates

[Indoor air quality for wall covering/panels; S

][Indoor air quality for adhesives; S

] SD-10 Operation and Maintenance Data

Corner Guards, Data Package 1; G[, [_____]]

Wall Guards, Data Package 1; G[, [_____]]

Door Protectors, Data Package 1; G[, [_____]]

Wall Covering and Panels, Data Package 1; G[, [_____]]

1.3 CERTIFICATIONS

1.3.1 Indoor Air Quality

1.3.1.1 Wall Covering and 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. When product does not have certification, provide validation that product meets the indoor air quality product requirements cited herein.

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. Store materials at approximately 21 degrees C 70 degrees F for at least 48 hours prior to installation.

1.5 WARRANTY

Provide manufacturer's warranty to repair or replace defective materials and workmanship for a 1 year period of [one year] [____] [years] from date of final acceptance of the work.

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.

Some manufacturers will meet ASTM D256 and some ASTM F476, research to determine the specific test to what is specified.

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To the maximum extent possible, provide wall and door protection items that are standard products of a single manufacturer and furnished as detailed. Drawings show general configuration of products required[, and items differing in minor details from those shown are acceptable].

Submit detailed shop drawings of each wall and door protection item indicated. Include elevations, dimensions, clearances, details of construction and anchorage, and details of joints and connections.

Submit manufacturers' descriptive product data for each wall and door protection item indicated. Include manufacturers' literature, finishes, profiles and thicknesses of materials.

Submit manufacturers' operations and maintenance data for each wall and door protection item indicated in accordance with Section 01 78 23 OPERATIONS AND MAINTENANCE DATA.

2.1.1 Resilient Material

Provide resilient material consisting of high impact resistant extruded [PVC free][acrylic vinyl][or][injection molded thermal plastic] conforming to the following:

2.1.1.1 Minimum Impact Resistance

[Minimum impact resistance must be 3,857 kg/m 18 ft-lbs/sq. inch when

tested in accordance with ASTM D256, (Izod impact, ft-lbs per sq inch notched).][Minimum impact resistance must be 10,633.4 kg/m 49.62 ft-lbs/sq. inch when tested in accordance with ASTM F476.]

2.1.1.2 Fire Resistance Rating

Provide the following surface burning characteristics when tested and labeled in accordance with ASTM E84 by a qualified testing agency: maximum flame spread of 25 and a smoke developed rating of 450 or less. Provide material rated as self extinguishing when tested in accordance with ASTM D635. Provide resilient material used for protection on fire rated doors and frames listed by the qualified testing agency performing the tests. Provide resilient material installed on fire rated wood/steel door and frame assemblies tested on similar type assemblies. Test results of material tested on any other combination of door/frame assembly are not acceptable.

2.1.1.3 Integral Color

Provide colored components having integral color and 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

Provide materials resistant to chemicals and stains reagents in accordance with ASTM D543.

2.1.1.5 Fungal and Bacterial Resistance

Provide materials 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

Provide [flush mounted] [surface mounted] corner guards, radius formed to profile shown. Provide corner guards that [extend from floor to ceiling.] [are [_____] mm [____]feet high.] Furnish mounting hardware, cushions, and base plates. Provide assembly consisting of a snap-on corner guard formed from high impact resistant resilient material, mounted on a continuous aluminum retainer. Extruded aluminum retainer conforms 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 act as a stop for adjacent wall finish material. Furnish factory fabricated end closure caps for top and bottom of surface mounted corner guards. Provide flush mounted corner guards installed in fire rated wall that maintain the rating of the wall. Manufacturer to provide insulating materials that are an integral part of the corner guard system. Provide exposed metal portions of fire rated assemblies with a paintable surface.

2.2.2 Stainless Steel Corner Guards

****
NOTE: 1.59 mm16 gauge stainless steel corner guards are the standard for most manufactures, it is very durable and able to stand up well to abuse in many situations. Depending on the amount of abuse a corner guard is expected to take, select a higher gauge. Some examples of higher abuse spaces include clean rooms, warehouses or manufacturing plants.
****

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. Fabricate stainless steel base material of[1.98 mm 14 gauge][1.59 mm 16 gauge][1.27 mm 18 gauge][0.95 mm 20 gauge] thick material conforming to ASTM A167, type 430 or 304. Provide corner guards that [extend from floor to ceiling.][are [_____] mm [_____]feet high.] Form corner guard to dimensions shown.

2.3 WALL GUARDS

****
NOTE: Bed locators are used in healthcare facilities, specifically inside patient rooms. They help protect the wall from damage by positioning the patient bed in the right location. Remove references to bed locator if not editing this specification for a healthcare facility. For the intent of this specification wall guards include crash rails, bed locators, handrails and chair rails.
****

Provide product with prefabricated end closure caps, inside and outside corners, concealed splices, cushions, mounting hardware and other accessories standard with the manufacturer. Extruded continuous 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. Field adjust all end caps and corners to assure close alignment.

2.3.1 Crash Rails and [Bed Locators]

Provide crash rails with snap-on covers of high impact resistant resilient material, minimum 2 mm 0.078 inch thick, mounted over [51] [_____] mm [2] [_____] inch wide aluminum, minimum 2 mm 0.062 inch thick retainer, anchored to wall at maximum 610 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 crash rail/bed locators.

2.3.2 Combination Handrail and Crash Rails

Provide combination handrail and crash rails with snap-on covers of high impact resistant resilient material, minimum 2 mm 0.078 inch thick, on a continuous, extruded aluminum retainer, minimum 1.83 mm 0.072 inch thick anchored to wall at maximum 813 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/crash rail.

2.3.3 Handrails

Provide handrails with snap-on covers of high impact resistant resilient material, minimum 2 mm 0.078 inch thick on a continuous extruded aluminum retainer, minimum 2 mm 0.072 inch thick anchored to wall at maximum 813 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. Provide aluminum components with prefabricated end closure caps, inside and outside corners, concealed splices, cushions, mounting hardware and other accessories standard with the manufacturer. Provide end caps and corners that are field adjustable to assure close alignment with handrails.

2.3.4 Chair Rails

Provide chair rails with a snap-on cover of high impact resistant resilient material, minimum 1.78 mm 0.070 inch thick, on a continuous extruded aluminum retainer, minimum 1.52 mm 0.060 inch thick anchored to wall at maximum 813 mm 32 inches on center. Provide chair rails with slices, cushions, mounting hardware and other accessories standard with the manufacturer. Field adjust all end caps and corners to assure close alignment with chair rails.

2.4 DOOR PROTECTORS

Provide[door] [door envelope] [door knob] [and] [door frame] protection items with [high impact resistant acrylic vinyl or polyvinyl chloride resilient material, minimum [2 mm 0.060 inch thick for doors] [and] [1.02 mm 0.040 inch thick for door frames]][1.59 mm 16 gauge, type 304 stainless steel for door]. 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 AND PANELS

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NOTE: Recommended locations for various thicknesses of rigid wall covering andpanels are as follows: 1 mm 0.040 inch thick for lobbies and elevator areas, 1.02 to 1.52 mm 0.040 to 0.060 inch thick for service corridors, and 1.91 mm 0.075 inch thick for loading dock areas. A 10 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 and panels consisting of high impact [PVC free resilient material][rigid acrylic vinyl or polyvinyl chloride resilient material]. Panel sizes are[1219 mm by 2438 mm][4 by 8 feet][1219 mm by 3048 mm][4 by 10 feet]. 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

Provide[1.02 mm][0.040 inch][1.52 mm][0.060 inch][1.91 mm][0.075 inch][10 mm][0.375 inch] thick wall covering.

2.5.2 High Impact Wall Panels

Provide wall panel face and edge thickness that are [_____][1.02 mm][0.040 inch]. Factory bond panel face to a 10 mm 0.375 inch thick fiberboard core. Laminate the backside of the panel with a moisture resistant vapor barrier.

2.5.3 Rigid Vinyl Acrylic Digital Wall Covering

Provide wall covering thickness of minimum 1.02 mm 0.040 inch with high definition graphic file reverse printed on clear sheet and sealed with protective backer. Provide image as [selected from manufacturer standard.][custom artwork with copyright clearance.] Provide image [in accordance with Section 09 06 00 SCHEDULES FOR FINISHES.][as indicated on drawings.]

2.6 TRIM, FASTENERS AND ANCHORS

Provide [vinyl][aluminum][PVC free] trim, fasteners and anchors for each specific installation as indicated.

2.7 FINISH

Submit samples indicating color and texture of materials requiring color and finish.

2.7.1 Aluminum Finish

Provide aluminum finish accordance with AA DAF45; exposed aluminum with designation [AA-C22A31 chemically etched medium matte, with clear anodic coating] [AA-C22A32 chemically etched medium matte with integrally colored anodic coating]. Provide Class II architectural coating that is 0.010 mm 0.4 mil thick. Provide concealed aluminum with mill finish as fabricated, uniform in natural color and free from surface blemishes.

2.7.2 Stainless Steel Finish

Provide stainless steel finish in accordance with ASTM A167, Type 302 or 304, finish number 4.

2.7.3 Resilient Material Finish

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

****

Provide resilient material finish of [embossed [velour] [stipple] [_____]] [[fake woodgrain] [high gloss vinyl]] texture with colors in accordance

with SAE J1545.

2.8 ADHESIVES

Provide adhesive for resilient material 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.

****

Provide color [as specified in Section 09 06 00 SCHEDULES FOR FINISHES.] [as indicated; colors listed are 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. Install items on surfaces that are clean, smooth, and free of obstructions.

3.1.1 Corner Guards and Wall Guards

a. Mount guards [as indicated][on external corners of interior walls, partitions and columns] and in accordance with manufacturer's written installation instructions.

b. For wall guards, space brackets at no more than 914 mm 3 feet on centers and anchor to the wall in accordance with the manufacturer's written installation instructions.

3.1.1.1 Stainless Steel Guards

****
NOTE: For mounting of stainless steel corner guards tape is an option if holes are not wanted in the substrate, screws would be a more durable solution.
****

a. Mount guards [as indicated][on external corners of interior walls, partitions and columns] and 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 1.59 mm 16 gauge 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 406 mm 16 inches on centers]]. Coat back surfaces of corner guards, where shown, with a non-flammable, sound deadening material. Overlap corner guards on 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 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 914 mm 3 feet on center and anchor to the wall in accordance with the manufacturer's installation instructions.

3.1.2 Door Protectors

Install protectors after frames are in place, but prior to hanging of doors, in accordance with manufacturer's written instructions. Apply adhesives in controlled environment in accordance with manufacturer's written instructions. Install protection for fire doors and frames in accordance with NFPA 80.

3.1.3 Wall Coverings and Panels

Install as indicated in accordance with manufacturer's written instructions.

-- End of Section --