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USACE / NAVFAC / AFCEA UFGS-12320A (March 2004)  
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Preparing Activity: USACE Superseding)  
UFGS-12320A (October 2003)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated 22 December 2004

Latest change indicated by CHG tags

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### SECTION 12320A

#### RESIDENTIAL CABINETS AND COUNTERTOPS 03/04

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NOTE: This guide specification covers the requirements for cabinets and countertops.

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).

Use of electronic communication is encouraged.

Brackets are used in the text to indicate designer choices or locations where text must be supplied by the designer.

This guide specification includes tailoring options for frame type cabinets, and frameless type cabinets. Selection or deselection of a tailoring option will include or exclude that option in the section, but editing the resulting section to fit the project is still required.

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#### PART 1 GENERAL

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NOTE: The type of cabinet, configuration of drawers and doors, details of shelving (fixed or adjustable) fittings, countertop type, installation fittings, and other necessary details will be indicated on the drawings. The kitchen will be planned so that manufacturer's standard stock sizes of cabinets can be selected. The designer should consider UFGS 06410A LAMINATE CLAD ARCHITECTURAL CASEWORK as a potential alternative for some uses and/or items

specified herein.

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## 1.1 REFERENCES

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NOTE: Issue (date) of references included in project specifications need not be more current than provided by the latest guide specification. Use of SpecsIntact automated reference checking is recommended for projects based on older guide specifications.

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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 NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z124.3 (1995) Plastic Lavatories

### ASTM INTERNATIONAL (ASTM)

ASTM D 2583 (1995; R 2001e1) Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor

ASTM D 570 (1998) Water Absorption of Plastics

ASTM D 638 (2002a) Tensile Properties of Plastics

ASTM E 84 (2003) Surface Burning Characteristics of Building Materials

### BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)

BHMA A156.9 (2003) Cabinet Hardware

### KITCHEN CABINET MANUFACTURERS ASSOCIATION (KCMA)

KCMA A161.1 (2000) Performance & Construction Standards for Kitchen and Vanity Cabinets

### NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA LD 3 (2000) High-Pressure Decorative Laminates

## 1.2 DESIGN

Cabinets shall be wood, factory-fabricated and finished in the manufacturer's standard sizes and finishes of the type, design, and configuration indicated. Cabinets shall be constructed as specified and shall meet the requirements of KCMA A161.1. Wall and base cabinet assemblies shall consist of individual units joined into continuous sections. Fastenings shall be accomplished to permit removal and replacement of individual units without affecting the remainder of the installation. Counters shall be provided with watertight sink rim when indicated. Drawers shall be removable and shall be equipped with position

stops to avoid accidental complete withdrawals. Shelves shall be fixed or adjustable as indicated.

### 1.3 SUBMITTALS

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NOTE: Submittals must be limited to those necessary for adequate quality control. The importance of an item in the project should be one of the primary factors in determining if a submittal for the item should be required.

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 projects.

Submittal items not designated with a "G" are considered as being for information only for Army projects and for Contractor Quality Control approval for Navy 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.] The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

#### SD-02 Shop Drawings

Installation[; G][; G, [\_\_\_\_]]

Drawings showing each type of cabinet and related item, and clearly indicating the complete plan, location, and elevations of the cabinets and accessories and pertinent details of construction, fabrication, and attachments.

#### SD-03 Product Data

Cabinets

## Countertops and Backsplash

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

### SD-04 Samples

Cabinets[; G][; G, [\_\_\_\_]]  
Countertops and Backsplash[; G][; G, [\_\_\_\_]]

In lieu of individual samples, complete minimum size cabinets may be furnished as samples. Mock-up units are not acceptable. Samples shall be of sufficient size to show color, pattern, and method of assembly.

- a. Countertop and backsplash - One section, containing both.
- b. Door and drawer front - One of each, with hardware mounted.
- c. [Three] [\_\_\_\_] countertop color samples approximately 50 x 75 mm 2 x 3 inches size.
- d. [Three] [\_\_\_\_] cabinet stain/color samples approximately 50 x 75 mm 2 x 3 inches size.

### SD-06 Test Reports

#### Cabinets

Test reports certifying that all cabinets comply with the requirements of KCMA A161.1. Tests shall be conducted by independent laboratories approved by KCMA. KCMA certification seals affixed to the cabinets will be accepted in lieu of certified test reports.

## 1.4 DELIVERY AND STORAGE

Cabinets shall be delivered to the jobsite wrapped in a protective covering. Cabinets shall be stored in accordance with manufacturer's recommendations in an adequately ventilated, dry location that is free of dust, water, or other contaminants and in a manner to permit access for inspection and handling. Cabinets shall be handled carefully to prevent damage to the surfaces. Damaged items that cannot be restored to like-new condition shall be replaced.

## PART 2 PRODUCTS

### 2.1 CABINETS

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**NOTE: Specify good grade for natural finish and  
sound grade for paint finish.**  
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Wall and base cabinets shall be of the same construction and same outside appearance. Door design shall be [[solid flush face] [framed inset hardwood panels] [glass face]] from vendors standard styles. Corner cabinets shall be equipped with [[notched shelving] [full circle shelves]] as indicated. Shelves shall be fixed or fully adjustable as indicated.

Adjustable shelves shall be capable of adjusting on approximately 75 mm 3 inch increments. Shelves shall be supported by self-locking clips or wood dowels. Dowels shall be approximately 8 mm 5/16 inch in diameter by 40 mm 1-9/16 inches long. Dowels shall be inserted into borings for the shelf adjustments. Shelves shall be minimum 13 mm 1/2 inch thick plywood or minimum 13 mm 1/2 inch thick 20 kg 45 pound density particle board. Drawer fronts shall be [20 kg 45 pound density particle board or hardwood plywood to match cabinet door construction.] [19 mm 3/4 inch thick solid hardwood frame with hardwood plywood panel.] [11 mm 7/16 inch solid wood panel.] [16 mm 5/8 inch thick, 20 kg 45 pound density particle board core.]

#### 2.1.1 Frame Type Cabinets

The cabinets shall be constructed with frame fronts and solid ends, or frame construction throughout. Frame members shall be 19 mm 3/4 inch thick by 38 mm 1-1/2 inch wide; kiln-dried hardwood, glued together, and shall be either mortised and tenoned, dovetailed or doweled, nailed, stapled or screwed. Top and bottom corners shall be braced with either hardwood blocks that are glued together with water resistant glue and nailed in place, or metal or plastic corner braces. Backs of wall cabinets shall be 3 mm 1/8 inch thick plywood, tempered hardboard or 9 mm 3/8 inch thick, 20 kg 45 pound density particle board. Backs of base and tall cabinets shall be 9 mm 3/8 inch thick hardwood or 9 mm 3/8 inch thick, 20 kg 45 pound density particle board. Bottoms of cabinets shall be minimum 9 mm 3/8 inch thick plywood 20 kg 45 pound density particle board or [good grade] [sound grade] plywood and shall be braced with wood members glued in place. Cabinet ends shall be [16 mm 5/8 inch thick hardwood plywood] [16 mm 5/8 inch thick, 20 kg 45 pound density particle board core] [9 mm 3/8 inch thick, 20 kg 45 pound density particle board].

#### 2.1.2 Frameless Type Cabinets

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**NOTE: Frameless cabinetry may be slightly oversized. When considering a frameless design, incorporate trimmable fillers to allow for any excess. This becomes increasingly important when the design requires cabinetry to fit snugly between two walls or other confined areas.**  
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The cabinets shall be of frameless design and construction. Cabinets shall be constructed of minimum 16 mm 5/8 inch thick, 20 kg 45 pound density particle board end and floor panels. Cabinet back shall be constructed of minimum 5 mm 3/16 inch thick, 20 kg 45 pound density particle board. Hanging rails shall be doweled and glued to end panels, then fastened and hot melt glued to cabinet back. Toe kick plates shall be recessed, doweled and glued to the end panels. Top and bottom corners shall be braced with either hardwood blocks glued together with water resistant glue and nailed in place, or fastened with metal or plastic corner braces.

#### 2.2 COUNTERTOPS AND BACKSPLASH

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**NOTE: Designer must select the type countertop material most appropriate for the project.**  
  
**If a backsplash is not used, delete "AND BACKSPLASH" from the title and remove all references to**

**backsplash from the text.**

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**2.2.1 High-Pressure Laminated Plastic Clad Countertops**

Clad countertop and backsplash shall be constructed of [19 mm 3/4 inch thick plywood] [or] [19 mm 3/4 inch thick, 20 kg 45 pound density particle board core] and shall be [post formed cove type] [or] [fully formed type]. [Cove type shall be a single unit with self-edging and plastic laminate coved at the juncture of the countertop and backsplash.] [Fully formed type or square edge shall be a unit with shaped edges using wood nose molding at counter edge and shall include a separate backsplash. Backsplash shall be not less than 90 mm 3-1/2 inches high.] Edging and trim shall consist of plastic laminate cut and fitted to all exposed edges. End splashes constructed of 19 mm 3/4 inch plywood or 19 mm 3/4 inch thick, 20 kg 45 pound density particle board core shall be supplied. Continuous sheets of longest lengths practicable shall be provided. Joints in surface sheeting shall be tight and flush and held to a practicable minimum. When the countertop and backsplash are two separate units, GP50 plastic laminate shall be used. When the countertop and backsplash are one unit, PF42 plastic laminate shall be used. Plastic laminate shall conform to the requirements of NEMA LD 3 and plastic laminate adhesive shall be contact type applied to both surfaces. For fully formed and cove type countertops, the post-forming plastic laminate shall not be bent to a radius smaller than the limit recommended by the plastic manufacturer.

**2.2.2 Solid Polymer Countertops**

Countertop and backsplash shall be constructed [with integral [sink] [and] [lavatory]] [of sheet material for sink/lavatory cutout]; as shown. Material shall be [12.7] [19] [\_\_\_\_\_] mm [1/2] [3/4] [\_\_\_\_\_] inch thickness, cast, and filled nonporous solid surfacing composed of acrylic polymer, mineral fillers, and pigments. Superficial damage to a depth of 0.25 mm 0.010 inch shall be repairable by sanding or polishing. Material shall comply with the following performance requirements.

- a. Tensile Strength; 18.3 N/mm<sup>2</sup> 4100 psi, when tested in accordance with ASTM D 638.
- b. Hardness; Barcol Impressor 50 when tested in accordance with ASTM D 2583.
- c. Flammability; rated Class I with a flame spread of 25 maximum and a smoke developed of 100 maximum when tested in accordance with ASTM E 84.
- d. Boiling water resistance; no effect when tested in accordance with NEMA LD 3.
- e. High temperature; no effect when tested in accordance with NEMA LD 3.
- f. Liquid absorption; 0.06% maximum (24 hours) when tested in accordance with ASTM D 570.
- g. Sanitation; National Sanitation Foundation approval for food contact in accordance with Standard 51 and approval for food area applications.

- h. Impact resistance; no failure for ball drop when tested in accordance with NEMA LD 3.

### 2.2.3 Solid Polyester Resin Cultured Marble Countertops

Countertop and backsplash shall be constructed [with integral [sink] [and] [lavatory]] [of sheet material for sink/lavatory cutout]; as shown. Material shall be [12.7] [19] [\_\_\_\_\_] mm [1/2] [3/4] [\_\_\_\_\_] inch thickness, cast, and filled nonporous solid surfacing composed of polyester resin crushed marble, glass frit, mineral fillers and pigments. Material shall comply with ANSI Z124.3 and the following performance requirement. Flammability shall comply with Class I, flame spread of 25 maximum and a smoke developed of 100 maximum when tested in accordance with ASTM E 84.

### 2.3 Sink/Lavatory Rims

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**NOTE: Omit this paragraph if not required by the project.**  
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Sink/lavatory rims shall be of the [corrosion resistant steel clamping type, sized to the sink] [type as shown], and a standard product of a manufacturer regularly producing this type of equipment.

### 2.4 FINISH

#### 2.4.1 Cabinet Finish

Cabinets shall be provided with a factory-applied durable finish in accordance with KCMA A161.1 requirements and of a type standard with the manufacturer. Natural finish wood doors, drawer fronts, cabinet fronts, and exposed cabinet sides shall be fabricated of wood which will be free of extreme color variations within each panel or between adjacent panels. Exposed exterior surfaces shall be [hardwood or grade A-A hardwood veneer with natural stain and sprayed on factory applied finish.] [melamine plastic finish.] [paint-finished wood doors, drawer fronts, cabinet fronts, and exposed cabinet sides fabricated of hardwood or grade C hardwood veneer.] [0.051 mm 2 mil vinyl wrap.]

#### 2.4.2 Melamine Laminated Interior Cabinet Finish

Plywood, particle board or tempered hardboard cabinet backs shall be finished with a melamine laminate on the exposed side. Particle board shelves shall be covered on both sides with a laminated melamine finish. Melamine laminate shall conform to the requirements of NEMA LD 3 and laminate adhesive shall be contact type applied to both surfaces.

#### 2.4.3 Backer Sheets

Backer Sheets of high pressure plastic laminate, shall conform to NEMA LD 3, Grade BK20 and shall be applied to the underside of all core material.

### 2.5 HARDWARE

Hardware shall conform to BHMA A156.9, shall be suitable for kitchen cabinet use, and shall include all miscellaneous hardware for a complete installation. Door hinges shall be self-closing type. Drawer runners shall have nylon rollers standard with the manufacturer. Hardware and



fastenings for doors and drawers with particle board cores shall be of the through-bolt type. The types and finishes of hardware shall be as follows:

BHMA DESIGNATION

TYPE	NUMBER	FINISH
[_____]	[_____]	[_____]

2.6 COLOR, TEXTURE, AND PATTERN

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NOTE: Editing of color reference sentence(s) shall be coordinated with the Government. Generally, UFGS 09915 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.

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Color shall be [in accordance with Section 09915 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

Cabinets shall be installed level, plumb, and true to line, and shall be attached to the walls or floors with suitable devices to securely anchor each unit. Countertops, accessories, and hardware shall be installed as indicated on the drawings. Installation shall be in accordance with the manufacturer's approved printed instructions. The inner edge of sink cut-outs in laminated plastic tops shall be painted with a coat of semigloss enamel paint and sink flanges shall be set in a bed of sealant. Closer and filler strips and finish moldings shall be provided as required.

Prior to final acceptance, doors shall be aligned, and hardware shall be adjusted.

### 3.2 CLEANING

Cabinet and countertop surfaces shall be cleaned in accordance with manufacturer's instructions.

-- End of Section --