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DIVISION 12 - FURNISHINGS

SECTION 12 32 00

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11/13

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MANUFACTURED WOOD CASEWORK
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PART 1 GENERAL

1.1 REFERENCES

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 HARDBOARD ASSOCIATION (AHA)

AHA A135.4 (1995; R 2004) Basic Hardboard

APA - THE ENGINEERED WOOD ASSOCIATION (APA)

APA E30 (2011) Engineered Wood Construction Guide

APA EWCG (2011) Engineered Wood Construction Guide:
Building Requirements and Related Panel
Systems

APA PS 1 (2009) Structural Plywood (with Typical
APA Trademarks)

ASME INTERNATIONAL (ASME)

ASME B18.6.1 (1981; R 2008) Wood Screws (Inch Series)

ASTM INTERNATIONAL (ASTM)

ASTM A1008/A1008M (2015) Standard Specification for Steel,
Sheet, Cold-Rolled, Carbon, Structural,
High-Strength Low-Alloy and High-Strength
Low-Alloy with Improved Formability,
Solution Hardened, and Bake Hardened

ASTM A167 (2011) Standard Specification for
Stainless and Heat-Resisting
Chromium-Nickel Steel Plate, Sheet, and
Strip

ASTM A325 (2014) Standard Specification for
Structural Bolts, Steel, Heat Treated,
120/105 ksi Minimum Tensile Strength

ASTM A325M (2014) Standard Specification for
Structural Bolts, Steel, Heat Treated, 830
MPa Minimum Tensile Strength (Metric)

ASTM D4689 (2012) Standard Specification for
Adhesive, Casein-Type

ASTM D4690 (2012) Standard Specification for Urea

Formaldehyde Resin Adhesives

ASTM F594 (2009; E 2011) Standard Specification for Stainless Steel Nuts

ASTM F836M (2002; R 2010) Standard Specification for Style 1 Stainless Steel Metric Nuts

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)

ANSI/BHMA A156.9 (2010) Cabinet Hardware

HARDWOOD PLYWOOD AND VENEER ASSOCIATION (HPVA)

HPVA HP-1 (2009) American National Standard for Hardwood and Decorative Plywood

KITCHEN CABINET MANUFACTURERS ASSOCIATION (KCMA)

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

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

ANSI/NEMA LD 3 (2005) Standard for High-Pressure Decorative Laminates

NEMA LD 3.1 (1995) Performance, Application, Fabrication, and Installation of High-Pressure Decorative Laminates

SCIENTIFIC EQUIPMENT AND FURNITURE ASSOCIATION (SEFA)

SEFA 7 (1996) Recommended Practice for Laboratory and Hospital Fixtures

U.S. DEPARTMENT OF COMMERCE (DOC)

DOC/NIST PS1 (1995) Construction and Industrial Plywood with Typical APA Trademarks

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FS FF-B-588 (Rev E; Notice 1) Bolt, Toggle: and Expansion Sleeve, Screw

FS FF-S-325 (Basic; Int Amd 3; Notices 3, 4) Shield, Expansion; Nail, Expansion; and Nail, Drive Screw (Devices, Anchoring, Masonry)

FS MM-L-736 (Rev D; Notice 1) Lumber; Hardwood

FS MM-L-751 (Rev H) Lumber; Softwood

FS TT-C-490 (Rev F; Am 1) Cleaning Methods for Ferrous Surfaces and Pretreatments for Organic Coatings

FS TT-F-336 (Rev E; Notice 1) Filler, Wood, Paste

FS WW-P-541

(Rev E; Am 1; Notice 1) Plumbing Fixtures

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submittals with an "S" are for inclusion in the Sustainability Notebook, 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

Fabrication; G,

Installation Drawings; G

SD-03 Product Data

Cabinets; G

Corrosion-Resistant Steel; G

Plywood; G

Hardwood; G

Hardwood Plywood; G

Adhesives; G,

Filler Material; G

Particle Board; G

Fasteners; G

Steel Sinks; G

Service Fixtures; G

Accessories and Hardware; G

Softwoods; G

Plastic Laminate; G

Countertops; G

SD-04 Samples

Accessories and Hardware; G

Manufacturer's Standard Color Charts; G

SD-07 Certificates

Corrosion-Resistant Steel; G

Plywood; G

Hardwood; G

Adhesives; G

Filler Material; G

Particle Board; G

Turpentine; G

Varnish; G

Fasteners; G

Steel Sinks; G

Service Fixtures; G

Accessories and Hardware; G

SD-08 Manufacturer's Instructions

Manufacturer's Instructions; G

1.3 MAINTENANCE MATERIAL SUBMITTALS

Submit [manufacturer's instructions](#) for wood and metal cabinet systems including special provisions required to install equipment components and system packages. Special notices to detail impedances, hazards and safety precautions.

1.4 QUALITY ASSURANCE

Submit [manufacturer's standard color charts](#) for wood and metal cabinets showing the manufacturer's recommended color and finish selections.

1.5 DELIVERY, STORAGE, AND HANDLING

Deliver, handle, and store cabinets in a manner that prevents damage or deformity. Provide temporary skids under units weighing more than [300 pounds](#).

PART 2 PRODUCTS

2.1 SYSTEM DESIGN

Provide wood cabinets, factory-fabricated and finished in the

manufacturer's standard sizes and finishes of the type, design, and configuration indicated. Construct cabinets as specified meeting the requirements of **KCMA A161.1**. Wall and base cabinet assemblies to consist of individual units joined into continuous sections. Use fastenings that permit removal and replacement of individual units without affecting the remainder of the installation. Provide counters with watertight sink rim when indicated, and removable drawers equipped with position stops to avoid accidental complete withdrawals. Fix or adjust shelves as indicated.

2.2 FABRICATION

2.2.1 Wood Cabinet Fabrication

Construct wall and base cabinets with frame fronts and solid ends, or frame construction throughout. Provide **3/4-by 1-1/2-inch** kiln-dried hardwood framing members, using mortise and tenon, dovetailed, grove and lapped, biscuit and dado, or doweled, with glue assembly. Brace top and bottom corners with hardwood blocks that are glued with water-resistant glue and nailed in place. Provide base cabinets with an integral toe space at least **2-1/2 inches** deep and **4-inches** high. Mount drawers on metal guides. Provide adjustable shelving, as indicated.

Minimum thicknesses of materials for frame-front, solid-end cabinet construction is as follows:

- a. Backs and bottoms of base cabinets and tops of wall cabinets: **1/8-inch** tempered hardboard. Brace bottoms with wood members glued in place.
- b. Cabinet ends: **1/2-inch** hardwood-veneer plywood
- c. Doors: **3/4-inch** hardwood plywood,
- d. Drawer fronts: **3/4-inch** hardwood
- e. Drawer bottoms: **3/16-inch** plywood or tempered hardboard. Drawer bottoms over **1 foot 3 inches** wide will be braced with wood members glued in place.
- f. Drawer sides and backs: **1/2-inch** hardwood
- g. Interior partitions or dividers: **1/2-inch** fir plywood, Grade A-A
- h. Shelves: Grade A-B plywood, supported on ends and **24 inches** on centers
- i. Adjustable shelves: **3/4-inch** plywood
- j. Base cabinet shelves: **5/8-inch** plywood
- k. Wall cabinet shelves: **1/2-inch** plywood

Minimum thicknesses of materials for frame-type cabinet construction is as follows:

- a. Cabinet ends: **1/4-inch** hardwood plywood
- b. Backs, bottoms, partitions, and dividers: **3/16-inch** tempered hardboard in a frame

Provide materials for other components as specified.

2.2.1.1 High-Pressure Decorative Laminate (HPDL)

ANSI/NEMA LD 3, satin finish, unless otherwise indicated.

2.2.1.1.1 Countertops

PF 42, satin finish.

2.2.1.1.2 Vertical Surfaces

GP 28 or PF 30, satin finish.

2.2.1.1.3 Backing Sheet

BK 20.

2.2.1.1.4 Cabinet Liner

CL 20.

2.2.1.2 Hardwood Plywood

HPVA HP-1, Type II (Interior), five-ply, with face veneer of good grade (1) or better. Cover all exposed edges.

2.2.1.3 Hardwood

Provide hardwood for use in cabinet work, thoroughly seasoned or kiln-dried to 12-15 percent mc; without defects in any exposed parts or surfaces.

2.2.1.4 Softwood Plywood

Comply with DOC/NIST PS1.

2.2.1.4.1 Countertops

Exterior type, A-C Grade.

2.2.1.4.2 Elsewhere

Interior type, A-B Grade, may be used in lieu of hardwood plywood where HPDL finish is provided.

2.2.1.5 Hardboard

In accordance with AHA A135.4, tempered.

2.2.1.6 Steel for Cabinets

ASTM A1008/A1008M, cold rolled, commercial quality carbon steel sheet.

2.2.1.7 Sinks , Lavatoriesand Fittings

As specified in Section 22 00 00 PLUMBING, GENERAL PURPOSE.

2.2.2 Laminate Cabinet Fabrication

Construct cabinets with frame fronts and solid ends throughout. Frame

members will be 3/4-by 1-1/2-inch kiln-dried hardwood, using mortise and tenon, dovetailed or doweled, and glued together. Brace top and bottom corners with hardwood blocks that are glued with water-resistant glue and nailed in place. Provide base cabinets with an integral toe space at least 2-1/2 inches deep and 4-inches high. Mount drawers on metal guides. Provide adjustable shelving, as indicated on drawings.

Minimum thicknesses of materials for cabinet construction is as follows:

- a. Backs and bottoms of base cabinets and tops of wall cabinets: 3/16-inch tempered hardboard. Brace bottoms with wood members glued in place.
- b. Cabinet ends: 3/4-inch standard veneer-core plywood with a plastic laminate covering
- c. Doors: 3/4-inch low pressure laminate
- d. Drawer fronts: 3/4-inch low pressure laminate
- e. Drawer bottoms: 1/8-inch plywood or tempered hardboard. Brace drawer bottoms over 1 foot 3 inches wide with wood members glued in place.
- f. Drawer sides and backs: 3/4-inch standard veneer-core plywood
- g. Interior partitions or dividers: 3/4-inch standard veneer-core plywood
- h. Shelves: Supported on ends and 24 inches on centers
- i. Adjustable shelves: 3/4-inch standard veneer-core plywood
- j. Base cabinet shelves: 3/4-inch standard veneer-core plywood
- k. Wall cabinet shelves: 3/4-inch standard veneer-core plywood

2.2.3 Miscellaneous Cabinets

2.2.3.1 Combination Sink-and-Base Cabinet

A combination sink-and-base cabinet unit may be furnished in lieu of the base cabinet and inset sink indicated provided the combination unit affords facilities and space equal to those indicated and provided the combination unit matches the adjacent units in materials and construction. Provide a sink with matching drainboards, of corrosion-resistant steel], equipped with a chromium-plated swinging-spout faucet, chromium-plated water-control valves, automatic faucet and chromium-plated cup strainer. Ensure joints are watertight between sink and drainboard and between drainboard and counter top.

2.2.3.2 Special Purpose Cabinets

Provide special-purpose cabinets, such as cabinets for eye-level oven units, countertop range units, and built-in refrigerators and desks, as indicated on drawings, of the same materials and construction as adjacent cabinets.

]2.3 MANUFACTURED UNITS

2.3.1 Cabinets

Provide new factory-finished kitchen wall and base cabinets with high pressure decorative laminate (HPDL) countertops to receive combination lavatory-countertops as specified in Section 22 00 00 PLUMBING, GENERAL PURPOSE. Provide cabinets conforming to [KCMA A161.1](#), requirements specified herein, bearing the "KCMA Certified Cabinet" seal of the Kitchen Cabinet Manufacturers Association, or submit manufacturer's test reports from an approval laboratory that cabinets meet requirements of [KCMA A161.1](#). Provide [countertops](#) conforming to [NEMA LD 3.1](#) and requirements specified herein.

2.3.1.1 Frame Type Cabinets

Construct the cabinets with frame construction throughout. Provide [3/4-inch thick by 1-1/2 inch wide frame members](#); kiln-dried hardwood, glued together, either mortised and tenoned, dovetailed or doweled, nailed, stapled or screwed. Brace top and bottom corners with either hardwood blocks that are glued together with water resistant glue and nailed in place, or metal or plastic corner braces. Use [1/8-inch thick plywood](#) for backs of cabinets, with tempered hardboard or [3/8-inch thick](#), . Provide [3/8-inch thick hardwood or 3/8-inch thick plywood](#) for backs of cabinets. Provide minimum [3/8-inch thick plywood](#) or sound grade plywood for bottoms of cabinets, braced with wood members glued in place. Provide cabinet ends made with [5/8-inch thick hardwood plywood](#)

2.3.2 Finish

2.3.2.1 Melamine Laminated Interior Cabinet Finish

Finish plywood, particle board or tempered hardboard cabinet backs with a melamine laminate on the exposed side. Cover particle board shelves on both sides with a laminated melamine finish. Provide Melamine laminate that conforms to the requirements of [ANSI/NEMA LD 3](#) and laminate adhesive that is contact type applied to both surfaces.

2.3.2.2 Backer Sheets

Provide backer sheets of high pressure plastic laminate, conforming to [ANSI/NEMA LD 3](#), Grade BK20, applied to the underside of all core material.

2.3.3 Color, Texture, And Pattern

Provide color in accordance with Section [09 06 90 SCHEDULES FOR PAINTING AND COATING](#). selected from manufacturers standard colors. Color listed is not intended to limit the selection of equal colors from other manufacturers.

2.4 MATERIALS

Provide steel for cabinet construction conforming to [ASTM A1008/A1008M](#).

Provide [corrosion-resistant steel](#) conforming to [ASTM A167](#), Type 304] Finish 4.

Provide douglas-fir [plywood](#) conforming to [APA E30](#), [APA EWCG](#), and [APA PS 1](#) exterior type, fully waterproof bond.

Provide **adhesives** for application of plastic laminate consisting of a thermosetting urea-resin Type II conforming to **ASTM D4690** as recommended by the manufacturer of the laminate. Provide adhesive for wood members conforming to **ASTM D4689**.

Provide **filler material** conforming to **FS TT-F-336**.

Provide **hardwood** conforming to **FS MM-L-736**, standard hardwood lumber, S2S.

Provide **hardwood plywood** conforming to **HPVA HP-1**.

Provide **plastic laminate** conforming to **ANSI/NEMA LD 3**, Style **Textured Gloss - Premium #07**, Type **VGP 335**, Grade **HGS**, Class **1 or A**, Finish **HPL**.

Provide **softwoods** conforming to **FS MM-L-751**, factory and shop grade.

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Provide accessories and hardware conforming to the following requirements, as applicable:

- a. Extension drawer slides: **ANSI/BHMA A156.9**, Type B85071
- b. Semiconcealed hinges: **ANSI/BHMA A156.9**, Type B81201, 1-1/2 inches
- c. Full surface hinges: **ANSI/BHMA A156.9**, Type B81131, 1-1/2 inches
- d. Knob pulls: **ANSI/BHMA A156.9**, 1-inch diameter, Type B12132
- e. Bar type pulls: **ANSI/BHMA A156.9**, 4-inch overall length, Type B12012
- f. Semiconcealed hinges: **ANSI/BHMA A156.9**, Type B81201, 40 millimeter
- g. Full surface hinges: **ANSI/BHMA A156.9**, Type B81131, 40 millimeter
- h. Knob pulls: **ANSI/BHMA A156.9**, 25 millimeter diameter, Type B12132
- i. Bar type pulls: **ANSI/BHMA A156.9**, 100 millimeter overall length, Type B12012
- j. Locks, keying, and keys: As directed
- k. Catches: Magnetic, **5-pound** pull
- l. Sliding door set: Impregnated fiberboard track, Nylon glides

Provide **fasteners** conforming to the following:

- a. Screws: **ASME B18.6.1**, Group, Type and Class as applicable
- b. Anchoring Devices: **FS FF-S-325**, Group, Type, and Class as applicable
- c. Toggle bolts: **FS FF-B-588**, Type I, Class A, Style 2

- d. Nuts: [ASTM F594](#), corrosion-resistant steel
- e. Bolts: [ASTM A325](#), heavy, hexagon head bolts corrosion-resistant steel
- f. Nuts: [ASTM F836M](#), corrosion-resistant steel
- g. Bolts: [ASTM A325M](#), heavy, hexagon head bolts corrosion-resistant steel

Corrosion-resistant [steel sinks](#):

- b. [18-gage](#) corrosion-resistant steel, nonintegral, self-rimming
- c. Drain holes in center of bowl
- d. Underside coated with [1/8-inch](#) thick sound deadener
- e. Die-form, seamless, raised edges at front and ends
- f. Cove corners to [1/2-inch](#) radius
- g. Equip with strainers and tail pieces

Provide [service fixtures](#) conforming to the following requirements:

- a. Provide fixtures in accordance with the water conservation policy as stated in the Standard Plumbing Codes, Appendix J.
- b. Faucets: splashback mounted, cast brass, chrome plated, [FS WW-P-541](#)
- c. Faucets: deck mounted, cast brass, chrome plated, [FS WW-P-541](#)
- d. Gas, air, and vacuum, distilled water, steam, and de-ionized water cocks: cast brass, chrome plated, ground key type
- e. Drains, strainers, and taps: brass, chrome plated, [FS WW-P-541](#)
- f. Index buttons: plastic, color codes in accordance with [SEFA 7](#)
- g. Special items: provide nipples and locknuts with each fixture as directed.
- a. Metal pretreatment coatings: [FS TT-C-490](#), Type I

2.5 [ACCESSORIES AND HARDWARE](#)

Provide corrosion resistant hardware, and all exposed hardware with a chromium-plated finish or a corrosion-resistant finish as approved. Paint semiconcealed hinges on cabinets where paint finish is required to match the cabinets. Equip doors with magnetic-type catches. Provide door and drawer pulls as indicated.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Field Finishing Of Wood Cabinets

At the Contractor's option, wood cabinets with a factory finish standard set by the cabinet manufacturer may be provided.

3.1.2 Cabinet Installation

Install casework plumb with countertops level to within $1/16$ inch in 10-feet. Level base cabinets by adjusting leveling screws. Scribe and fit scribe strips to irregularities of adjacent surfaces. Gap opening is not to exceed.

Secure cases permanently to floor and wall construction using $1/4$ -inch diameter masonry anchors, spaced 30-inches maximum on center, minimum of two for each case.

Support wall cases on continuous 18-gage galvanized steel hanging brackets. Secure wall cases in position with screws to blocking. Bolt adjoining cases together. Width of joints not exceed $1/32$ -inch. Provide closer strips, filler strips, and finish moldings as required. Align doors, adjust hardware, clean and wax surfaces.

Submit installation drawings for cabinets. Include in drawings location of cabinets, details of cabinets related and dimensional positions, and locations for roughing in plumbing, including sinks, faucets, strainers and cocks.

3.2 CLEANING

On completion of cabinet installation, touch up marred or abraded finished surfaces. Remove crating and packing materials from premises. Wipe down surfaces to remove fingerprints and markings and leave in clean condition.

3.3 INSPECTION

Examine casework grounds and supports for adequate anchorage, foreign material, moisture, and unevenness that could prevent quality casework installation. Ensure that electrical and plumbing rough-ins for casework are complete. Do not proceed with installation until defects are corrected.

-- End of Section --