

**SECTION 12 32 00**  
**MANUFACTURED WOOD CASEWORK**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

A. This section specifies wood veneer casework, plastic laminate casework as detailed on the construction documents, including related components and accessories required to form integral units. Wood casework items shown on the construction documents, but not specified below are to be included as part of the work under this section, and applicable portions of the specification are to apply to these items.

**1.2 RELATED WORK**

- A. Section 07 92 00, JOINT SEALANTS: Sealants.
- B. Section 09 06 00, SCHEDULE OF FINISHES: Color of Casework Finish.
- C. Section 12 31 00, MANUFACTURED METAL CASEWORK: Standard Manufactured Metal Casework.
- D. Section 12 36 00, COUNTERTOPS: Countertop Construction and Materials and Items Installed in Countertops.
- E. Division 22, PLUMBING: Plumbing Requirements Related to Casework.
- F. Division 26, ELECTRICAL: Electrical Lighting and Power Requirements Related to Casework.

**1.3 SUBMITTALS**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data:
  - 1. Locks for doors and drawers.
  - 2. Adhesive cements.
  - 3. Casework hardware.
- C. Samples:
  - 1. Wood Face Veneer or Hardwood Plywood.
  - 2. Plastic laminate.
- D. Shop Drawings (1/2 full size):
  - 1. Each casework type, showing details of construction, including materials, hardware and accessories.
  - 2. Fastenings and method of installation.
- E. Certification:
  - 1. Manufacturer's qualifications specified.

2. Installer's qualifications specified.

**1.4 QUALITY ASSURANCE**

- A. Approval by COR is required of manufacturer and installer based upon certification of qualifications specified.
- B. Manufacturer's qualifications:
  - 1. Manufacturer is regularly engaged in design and manufacture of modular, wood veneer, plastic laminate casework, casework components and accessories of scope and type similar to indicated requirements for a period of not less than five (5) years.
  - 2. Manufacturer has successfully completed at least three (3) projects of scope and type similar to indicated requirements.
  - 3. Submit manufacturer's qualifications and list of projects, including owner contact information.
- C. Installer Qualifications:
  - 1. Installer has completed at least three (3) projects in last five (5) years in which these products were installed.
  - 2. Submit installer qualifications.

**1.5 WARRANTY**

- A. Construction Warranty: Comply with FAR clause 52.246-21 "Warranty of Construction".
- B. Manufacturer Warranty: Manufacturer shall warranty their wood casework for a minimum of five (5) years from date of installation and final acceptance by the Government. Submit manufacturer warranty.

**1.6 APPLICABLE PUBLICATIONS**

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by basic designation only.
- B. ASTM International (ASTM):
  - A240/A240M-20.....Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
  - A1008/A1008M-18.....Steel, Sheet, Cold-Rolled, Carbon, Structural, High Strength Low Alloy
  - C1036-16.....Flat Glass
- C. Builders Hardware Manufacturers Association (BHMA):
  - A156.1-16.....Butts and Hinges
  - A156.5-20.....Auxiliary Locks and Associated Products

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- A156.9-15.....Cabinet Hardware
- A156.11-19.....Cabinet Locks
- A156.16-18.....Auxiliary Hardware
- D. Composite Panel Association (CPA):
  - A208.1-09.....Particleboard
  - A208.2-09.....Medium Density Fiberboard (MDF) for Interior Applications
- E. U.S. Department of Commerce Product Standards (Prod. Std):
  - PS 1-09.....Construction and Industrial Plywood
- F. Hardwood, Plywood and Veneer Association (HPVA):
  - HP-1-16.....Hardwood and Decorative Plywood
- G. Architectural Woodwork Institute (AWI):
  - Architectural Woodwork Standards, Edition 2 Certification Program - 2014
- H. American Society of Mechanical Engineers (ASME):
  - A112.18.1-18.....Plumbing Fixture Fittings
- I. National Electrical Manufacturers Association (NEMA):
  - LD 3-05.....High Pressure Decorative Laminates
- J. Scientific Equipment and Furniture Association (SEFA):
  - 2.3-10.....Installation of Scientific Laboratory Furniture and Equipment
- K. Underwriters Laboratories Inc. (UL):
  - 437-13.....Key Locks

**PART 2 - PRODUCTS**

**2.1 PLYWOOD, HARDWOOD FACE VENEER**

- A. HPVA HP-1, Premium Grade plain sliced Red Oak Rotary cut Select White Birch.

**2.2 PLASTIC LAMINATE**

- A. NEMA LD 3.
- B. Exposed decorative surfaces, both sides of cabinet doors, and for items having plastic laminate finish. General purpose Type HGL.
- C. Cabinet Interiors Including Shelving: Both of following options to comply with NEMA LD 3 as a minimum.
  - 1. Plastic laminate clad plywood or particleboard, MDF (excluding shelves).
  - 2. Thermafoil.
  - 3. Low pressure laminate (LPL).

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D. Backing sheet on bottom of plastic laminate covered wood tops. Backer Type BKL.

E. Post Forming Fabrication, Decorative Surface: Post forming Type HGP.

**2.3 PLYWOOD, SOFTWOOD**

A. Prod. Std. PS1, five (5) ply construction from 13 mm to 28 mm (1/2 inch to 1-1/8 inch) thickness, and seven (7) ply for 31 mm (1 1/4 inch) thickness.

**2.4 PARTICLEBOARD**

A. CPA A208.1, Type 1, Grade M or medium density.

**2.5 MEDIUM DENSITY FIBERBOARD (MDF)**

A. Fully waterproof bond conforming to CPA A208.1 and CPA A208.2.

**2.6 GLASS**

A. ASTM C1048 Kind FT Type I, Class 1, Quality q3.

B. For Doors: 6 mm (1/4 inch) thick; except where laminated glass is shown on construction documents.

C. For Shelves: 9 mm (3/8 inch) thick.

D. Laminated Glass: Fabricate of two (2) sheets of 3 mm (1/8 inch) thick clear ASTM C1172 Kind LT glass, laminated together with a 1.5 mm (0.060 inch) thick vinyl interlayer, to a total overall thickness of 8 mm (5/16 inch).

**2.7 HARDWARE**

A. Cabinet Locks:

1. Provide where locks are indicated on construction documents.

2. Locked pair of hinged doors over 915 mm (36 inches) high:

a. ANSI/BHMA A156.5, key one side.

b. On active leaf use three (3) point locking device, consisting of two (2) steel rods and lever controlled cam at lock, to operate by lever having lock cylinder housed therein.

c. On inactive leaf provide dummy lever of same design.

d. Provide keeper holes for locking device rods and cam.

3. Door and Drawer: ANSI/BHMA A156.11 cam locks. Provide one (1) type for each condition as follows:

a. Drawer and Hinged Door up to 915 mm (36 inches) high: E07261.

b. Drawer and Hinged Door: Pin-tumbler, cylinder type lock with not less than four (4) pins or a UL 437 rated wafer lock with brass working parts and case.

c. Sliding Door: E07161.

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4. Key locks differently for each type casework and master key for each service, such as Administrative,
    - a. Key drug locker inner door different from outer door.
    - b. Furnish two (2) keys per lock.
    - c. Furnish six (6) master keys per service or Nursing Unit.
  5. Marking of Locks and Keys:
    - a. Name of manufacturer, or trademark which can readily be identified legibly marked on each lock and key change number marked on exposed face of lock.
    - b. Key change numbers stamped on keys.
    - c. Key change numbers to provide sufficient information for manufacturer to replace key.
- B. Hinged Doors:
1. Provide doors 915 mm (36 inches) and more in height with three (3) hinges and doors less than 915 mm (36 inches) in height is to have two (2) hinges. Each door is to close against two (2) rubber bumpers.
  2. Hinges: Fabricate hinges with minimum 1.8 mm (0.072 inch) thick chromium plated steel leaves, and with minimum 3.5 mm (0.139 inch) diameter stainless steel pin. Hinges to be five (5) knuckle design with 63 mm (2-1/2 inch) high leaves and hospital type tips. //
  3. Concealed Hinges: BHMA A156.9, Type B01602, 135 or 170 degrees of opening //, self-closing.
  4. 4. Fasteners: Provide full thread wood screws to fasten hinge leaves to door and cabinet frame. Finish screws to match finish of hinges.
- C. Door Catches:
1. Friction or Magnetic type fabricated with metal housing.
  2. Provide one (1) catch for cabinet doors 1220 mm (48 inches) high and under, and two (2) for doors over 1220 mm (48 inches) high.
- D. Drawer and Door Pulls:
1. Doors and drawers to have flush pulls, fabricated of either chromium-plated brass, chromium plated steel, stainless steel, or anodized aluminum. Drawer and door pulls to be of a design that can be operated with a force of 22.2 N (5 pounds) or less, with one (1) hand and not require tight grasping, pinching or twisting of the wrist.

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E. Drawer Slides:

1. Full extension steel slides with nylon ball-bearing rollers.
2. Slides to have positive stop.
3. Equip drawers with rubber bumpers.

F. Sliding Doors:

1. Each door to be supported by two ball bearing bronze or nylon rollers, or sheaves riding on a stainless steel track at top or bottom, and to be restrained by a nylon or stainless steel guide at the opposite end.
2. Plastic guides are not acceptable.
3. Each door to have rubber silencers set near top and bottom of each jamb.

G. Shelf Standards (Except For Fixed Shelves):

1. Bright zinc-plated steel for recessed mounting with screws, 16 mm (5/8 inch) wide by 5 mm (3/16 inch) high providing 13 mm (1/2 inch) adjustment, complete with shelf supports.

H. Gate Bolt:

1. Surface mounted barrel type with strike.

I. Hinged Gates:

1. Gates to have two (2) double-acting hinges size as required for gate size and weight.

J. Casters:

1. Locking type rated for 79 kg (175 pounds) each.

K. Floor Glides:

1. Non-skid material minimum 25 mm (1 inch) diameter with minimum 16 mm (5/8 inch) height adjustment.

**2.8 MANUFACTURED PRODUCTS**

- A. When two (2) or more units are required, use products of one (1) manufacturer.
- B. Manufacturer of casework assemblies is to assume complete responsibility for the final assembled unit.
- C. Provide products of a single manufacturer for parts which are alike.

**2.9 FABRICATION**

- A. Casework to be of the flush overlay, exposed face frame or reveal overlay design and, except as otherwise specified, be of Premium Grade construction and of component thickness in conformance with AWI Quality Standards.

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- B. Fabricate casework of plastic laminated covered plywood or particleboard factory finished wood veneer s follows:
  - 1. Where shown, gates, doors, drawers, shelves, all semi-concealed surfaces to be plastic laminated.
  - 2. Horizontal and vertical reveals between doors and drawer for reveal overlay design to be 19 mm (3/4 inch) unless otherwise shown.
  - 3. Glazed doors to have 6 mm (1/4 inch) thick glass, set in glazing compound.
  - 4. Sliding doors to have stops to prohibit bypass and be removable without use of tools.
- C. Provide 1.2 mm (18 gage) sheet steel sloping tops for casework where shown on construction drawings. Fasten sloping tops with oval-head screws inserted from interior. Exposed ends of sloping tops to have flush closures fastened as recommended by manufacturer.
- D. Support Members for Tops of Tables and Countertops:
  - 1. Construct as detailed on construction documents.
  - 2. Provide miscellaneous steel members and anchor as shown on construction drawings.
- E. Legs for Counters:
  - 1. Fabricate legs for counters of 1.6 mm (0.0635 inch) thick, 38 mm (1-1/2 inch) square tubular stainless steel.
  - 2. Secure legs to counter tops and provide legs at bottom with shoes not less than 25 mm (1 inch) in height.
  - 3. Fabricate shoes of stainless steel, aluminum or chromium plated brass.

**2.10 PRODUCTS OF OTHER COMPONENTS DIRECTLY RELATED TO CASEWORK**

- A. Refer to Section 07 92 00, JOINT SEALANTS for work related to sealants used in conjunction with joints of countertops, casework systems, and adjacent materials.
- B. Refer to Section 12 36 11, COUNTERTOPS for work related to plastic laminate, acid-resistant plastic laminate, metal, molded resin, wood, and methyl methacrylic polymer countertops and/or shelving used in conjunction with casework systems. When countertop materials are provided by the casework manufacturer, they are to include the following features:
  - 1. Capable of being suspended from vertical support rails or horizontal wall strips or service modules.

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2. Provided with rounded corners and impact resistant material on exposed edges.
3. Capable of being easily relocated and installed without tools.
4. Capable of being suspended and easily changed under counter mounted storage units.
5. Provide leveling adjustment capability so units can be brought into a level position.
6. Secured using fasteners. Show detail on shop drawings.
- C. Refer to Section 12 36 11, COUNTERTOPS for work related to and integral with countertop systems such as pegboards, funnel and graduate racks.
- D. Refer to Division 22, PLUMBING for the following work related to casework systems:
  1. Sinks, faucets and other plumbing service fixtures, venting, and piping systems.
  2. Compressed air, gas, vacuum and piping systems.
- E. Refer to Division 26, ELECTRICAL for the following work related to casework systems:
  1. Connections and wiring devices.
  2. Connections and lighting fixtures except when factory installed by the manufacturer.

**PART 3 - EXECUTION**

**3.1 COORDINATION**

- A. Begin only after work of other trades is complete, including wall and floor finish completed, ceilings installed, light fixtures and diffusers installed and connected and area free of trash and debris.
- B. Verify location and size of mechanical and electrical services as required and perform cutting of components of work installed by other trades.
- C. Verify reinforcement of walls and partitions for support and anchorage of casework.
- D. Coordinate with other Divisions and Sections of the specification for work related to installation of casework systems to avoid interference and completion of service connections.

**3.2 INSTALLATION**

- A. Install casework in accordance with manufacturer's written instructions and per SEFA 2.3 recommendations.



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1. Install in available space; arranged for safe and convenient operation and maintenance.
  2. Align cabinets for flush joints except where shown otherwise.
  3. Install with bottom of wall cabinets in alignment and tops of base cabinets aligned level, plumb, true, and straight to a tolerance of 3.2 mm in 2438 mm (1/8 inch in 96 inches).
  4. Install corner cabinets with hinges on corner side with filler or spacers sufficient to allow opening of drawers.
- B. Support Rails:
1. Install true to horizontal at heights shown on construction documents; maximum tolerance for uneven floors is plus or minus 13 mm (1/2 inch).
  2. Shim as necessary to accommodate variations in wall surface not exceeding 5 mm (3/16 inch) at fastener.
- C. Wall Strips:
1. Install true to vertical and spaced as shown on construction documents.
  2. Align slots to assure that hanging units will be level.
- D. Plug Buttons:
1. Install plug buttons in predrilled or prepunched perforations not used.
  2. Use chromium plate plug buttons or buttons finish to match adjacent surfaces.
- E. Seal junctures of casework systems with mildew-resistant silicone sealants as specified in Section 07 92 00, JOINT SEALANTS.

**3.3 . CLOSURES AND FILLER PLATES**

- A. Close openings larger than 6 mm (1/4 inch) wide between cabinets and adjacent walls with flat, steel closure strips, scribed to required contours, or machined formed steel fillers with returns, and secured with sheet metal screws to tubular or channel members of units, or bolts where exposed on inside.
- B. Where ceilings interfere with installation of sloping tops, omit sloping tops and provide flat steel filler plates.
- C. Secure filler plates to casework top members, unless shown otherwise on construction documents.

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- D. Secure filler plates more than 152 mm (6 inches) in width top edge to a continuous 25 x 25 mm (1 x 1 inch) 0.889 mm (1/16 inch) thick steel formed steel angle with screws.
- E. Anchor angle to ceiling with toggle bolts.
- F. Install closure strips at exposed ends of pipe space and offset opening into concealed space.
- G. Finish closure strips and fillers with same finishes as cabinets.

**3.4 FASTENINGS AND ANCHORAGE**

- A. Do not anchor to wood ground strips.
- B. Provide hat shape metal spacers where fasteners span gaps or spaces.
- C. Use 6 mm (1/4 inch) diameter toggle or expansion bolts, or other appropriate size and type fastening device for securing casework to walls or floor. Use expansion bolts shields having holding power beyond tensile and shear strength of bolt and breaking strength of bolt head.
- D. Use 6 mm (1/4 inch) diameter hex bolts for securing cabinets together.
- E. Use 6 mm (1/4 inch) by minimum 38 mm (1-1/2 inch) length lag bolt anchorage to wood blocking for concealed fasteners.
- F. Use not less than No. 12 or 14 wood screws with not less than 38 mm (1-1/2 inch) penetration into wood blocking.
- G. Space fastening devices 305 mm (12 inches) on center with minimum of three (3) fasteners in 915 or 1220 mm (3 or 4 foot) unit width.
- H. Anchor floor mounted cabinets with a minimum of four (4) bolts through corner gussets. Anchor bolts may be combined with or separate from leveling device.
- I. Secure cabinets in alignment with hex bolts or other internal fastener devices removable from interior of cabinets without special tools. Do not use fastener devices which require removal of tops for access.
- J. Where units abut end to end, anchor together at top and bottom of sides at front and back. Where units are back to back, anchor backs together at corners with hex bolts placed inconspicuously inside casework.
- K. Where type, size, or spacing of fastenings is not shown on construction documents or specified, show on shop drawings proposed fastenings and method of installation.

**3.5 ADJUSTMENTS**

- A. Adjust equipment to insure proper alignment and operation.
- B. Replace or repair damaged or improperly operating materials, components or equipment.

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**3.6 CLEANING**

- A. Immediately following installation, clean each item, removing finger marks, soil and foreign matter.
- B. Remove from job site trash, debris and packing materials.
- C. Leave installed areas clean of dust and debris.

**3.7 INSTRUCTIONS**

- A. Provide operational and cleaning manuals and verbal instructions in accordance with Article INSTRUCTIONS, SECTION 01 00 00, GENERAL REQUIREMENTS.
- B. Provide in service training both prior to and after facility opening. Coordinate in service activities with COR.
- C. Commencing at least seven (7) days prior to opening of facility, provide one (1) four (4) hour day of on-site orientation and technical instruction on use and cleaning procedures application to products and systems specified herein.

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