

SECTION 06410

CUSTOM CABINETS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Specially fabricated laminated plastic cabinet units.
- B. Countertops and splashes.
- C. Cabinet hardware.
- D. Factory finishing.
- E. Field verification of dimensions prior to fabrication.

1.02 RELATED REQUIREMENTS

- A. Section 06100 - Rough Carpentry: Wood blocking in walls.
- B. Section 06200 - Finish Carpentry: Installation of casework.
- C. Section 07900 - Joint Sealers.
- D. Section 10105 - Markerboards and Tackboards.

1.03 REFERENCE STANDARDS

- A. ANSI A208.1 - American National Standard for Particleboard; 1999.
- B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2009.
- C. BHMA A156.9 - American National Standard for Cabinet Hardware; Builders Hardware Manufacturers Association; 2003 (ANSI/BHMA A156.9).
- D. NEMA LD 3 - High-Pressure Decorative Laminates; National Electrical Manufacturers Association; 2005.
- E. WI (MCP) - Monitored Compliance Program (MCP); [current edition at www.woodworkinstitute.com/certification](http://www.woodworkinstitute.com/certification).

1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate materials, component profiles and elevations, assembly methods, joint details, fastening methods, accessory listings, hardware location and schedule of finishes.
 - 1. Comply with WI "Guidelines for Architectural Millwork Shop Drawings".
- C. Product Data: Provide data for hardware accessories.
- D. Mock-ups: Submit actual samples of architectural base cabinet and wall cabinet construction, minimum 18 inches (457.2 mm) square, illustrating proposed cabinet, countertop, and shelf unit substrate, edge banding, and plastic laminate finish.
- E. Samples: Submit actual sample items of proposed pulls, hinges, shelf standards, locksets, and slides, demonstrating hardware design, quality, and finish. Hardware may be part of mock-ups.
- F. Finish Samples: Submit six 6" x 6" samples of selected plastic laminate color(s).

1.05 QUALITY ASSURANCE

- A. Quality Certification: Provide WI Monitored Compliance Program inspection report and quality certification of completed work.

1. Provide labels or certificates indicating that the work complies with requirements of AWS Custom Grade, unless otherwise noted.
 - a. All specified casework shall conform to Section 10, Casework, Custom Grade, Construction Type I, Construction Style A - Frameless; and, Section 11, Countertops, Custom Grade.
 2. Prior to delivery to the site provide shop drawings with certification labels.
 - a. Before delivery to the jobsite and after installation of the millwork, the millwork supplier shall issue a Woodwork Institute Certified Compliance Certificate indicating the millwork products being furnished and installed for this project fully meet all the requirements of the grade specified. The first page of shop drawings shall bear the Woodwork Institute Certified Compliance Label; additionally, each unit of casework and each plastic laminate countertop delivered to the project shall bear the Certified Compliance Label.
 3. Provide labels on each product when required by certification program.
 4. Upon completion of installation provide certificate certifying that the installation and products meet the specified requirements.
 5. Arrange and pay for inspections required for certification.
 6. Replace, repair, or rework all work for which certification is refused.
- B. Manufacturer and Installer Qualifications: Members in good standing of the Woodwork Institute. Non-members shall comply with Woodwork Institute Monitored Compliance Program.
- C. Comply with ADAAG and CBC, Section 1117B, and Figures 11B-5C, 11B-1D, and 11B-5D for forward reach, side reach, and sink area access.
- D. Comply with CBC, Chapter 16A for vertical and seismic design loads. Shelves shall meet 50 lb./sq. ft. load capacity.

1.06 PRE-INSTALLATION MEETING

- A. Convene not less than one week before starting work of this section.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Protect units from moisture damage.
- B. Delivery - Do not deliver millwork until building is in proper condition and arrangements are made to properly handle and store at job site. All plaster work and concrete work shall be dry, and the area receiving the millwork broom clean.
- C. Storage - Store millwork in sheltered location and protect from rain, fog, and dew until installed in place. Keep millwork dry, loosely stacked and raised above floors and earth. The millwork shall not be subject to abnormal heat, extreme dryness, humid conditions, sudden changes in temperature, or direct sunlight. The Architectural millwork shall be acclimated to building temperatures 72 hours prior to installation.

1.08 WARRANTY

- A. All materials shall be warranted for a minimum period of 1 year from date of acceptance for manufacturing defects and workmanship.

1.09 FIELD CONDITIONS

- A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

PART 2 PRODUCTS

2.01 CABINETS

- A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI//AWMAC/WI Architectural Woodwork Standards for Custom Grade.

2.02 LAMINATE MATERIALS

- A. Decorative Laminates and Laminates with Wood Grains: Provide colors and wood grain patterns as selected by the Architect from the manufacturer's standard priced colors. A minimum of three colors for millwork will be selected.
- B. Manufacturers:
 - 1. Formica Corporation: www.formica.com.
 - 2. Panolam Industries International, Inc\Nevamar: www.nevamar.com.
 - 3. Wilsonart International, Inc: www.wilsonart.com.
 - 4. Substitutions: See Section 01600 - Product Requirements.
- C. Product Composition: Decorative surfaced papers impregnated with melamine resins are pressed over kraft paper core sheets impregnated with phenolic resin. Sheets are then bonded at pressures greater than 1000 pounds per square inch at temperatures approaching 300 degree F. (149 degree C).
- D. High Pressure Decorative Laminate (HPDL): ANSI/NEMA LD 3, types as recommended for specific applications and as follows:
 - 1. Horizontal Surfaces: HGS, 0.048 inch (1.22 mm) nominal thickness, color as selected, provide at countertops, splashes, top and bottom surface of shelves in open bookcases, and other work surfaces..
 - 2. Vertical Surfaces: VGS, 0.028 inch (0.71 mm) nominal thickness, color as selected, provide at cabinet walls, doors, drawer face panels, and other vertical surfaces..
 - 3. Post-Formed Horizontal Surfaces: HGP, 0.039 inch (1.0 mm) nominal thickness, color as selected, provide at formed edges for counters and other curved surfaces..
 - 4. Cabinet Liner: HPL, 0.020 inch (0.51 mm) nominal thickness, color as selected,.
 - 5. Laminate Backer: BKL, 0.020 inch (0.51 mm) nominal thickness, undecorated; for application to concealed backside of panels faced with high pressure decorative laminate.
- E. Finishes:
 - 1. Exposed Portions (including cabinet surfaces in open bookcases, open shelves, and knee spaces) - HPL (high-pressure laminate).
 - 2. Semi-exposed Portions - HPL Cabinet Liner except as noted above.
 - 3. Concealed Portions - Any species solid stock or plywood except as noted above.
- F. Cores:
 - 1. Countertops and Splashes - Industrial Grade Particleboard, minimum density of 47 lbs., 3/4 inch thickness, meeting or exceeding requirements of ANSI 208.1.
 - 2. Cabinets -Industrial Grade Particleboard, minimum density of 47 lbs., 3/4" thickness, meeting or exceeding requirements of ANSI 208.1.
 - 3. Ends and Divisions - Industrial Grade Particleboard, 3/4" thickness.
 - 4. Drawers - 7 or 9-ply hardwood plywood, 1/2" minimum thickness, 5/8" maximum thickness.
 - 5. Drawer Bottoms - Hardwood plywood, 1/4" thickness (provide 1/2" thickness at drawers exceeding 30 inches in width).
 - 6. Doors - Industrial Grade Particleboard, 3/4" thickness.
 - 7. Shelves - Industrial Grade Particleboard, 3/4" thickness (provide 1" thickness at shelves 30 inches and over). All exposed shelving in the same room shall be the same thickness.
 - 8. Stretchers - Solid stock or hardwood plywood, 3/4" thickness.
 - 9. Backs - Hardwood Plywood, 1/4" thickness (provide 1/2" thickness at exposed backs).
 - 10. Bases and sleepers - Solid stock or hardwood plywood, 3/4" thickness.
 - 11. Security and dust Panels - Hardwood plywood or Industrial Grade Particleboard, 1/2" thickness.

2.03 ACCESSORIES

- A. Adhesive: Type II, water resistant, releasable.
- B. Edge Banding: Exposed exterior cabinet edges, cabinet shelving (including front and back

edge of adjustable shelves in open cabinets), divider components, doors, drawer edges, countertops, splashes, and other exposed portions shall be finished with hot melt applied HPL (high pressure laminate), thickness to match adjacent face laminate, conforming to NEMA LD-3.

- C. Fasteners: Size and type to suit application.
- D. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel, or chrome-plated finish in exposed locations.
- E. Concealed Joint Fasteners: Threaded steel.

2.04 HARDWARE

- A. Hardware: BHMA A156.9, types as indicated for quality grade specified.
- B. Adjustable Shelf Supports: Standard side-mounted system using recessed metal shelf standards and coordinated shelf rests, satin chrome finish, for nominal 1 inch (25 mm) spacing adjustments.
 - 1. Product: No. 255 Heavy Duty shelf standard with No. 256 shelf clip manufactured by Knappe & Vogt or equal.
- C. Drawer and Door Pulls: "U" shaped wire pull, steel with satin finish, 4 inch centers ("U" shaped wire pull, steel with satin finish, 100 mm centers).
 - 1. Product: EPCO MC-402 manufactured by EPCO, Inc.
 - 2. Product: P604BC manufactured by Liberty Hardware Manufacturing Co.
- D. Cabinet Locks: Pin tumbler box lock with keyed cylinder, master keyed, two keys per lock. Provide locks on all cabinet doors and drawers, except at doors below sinks and overhead cabinet doors, unless otherwise noted. District will provide keying schedule.
 - 1. Product: Doors - C8173-US26D manufactured by National Lock Co., or equal.
 - 2. Product: Drawers - C8179-US26D manufactured by National Lock Co., or equal.
- E. Catches: Magnetic. Provide at all active doors.
 - 1. Product: No. 639-9783-AL manufactured by Amerock.
 - 2. Product: No. 1000 manufactured by EPCO, Inc.
- F. Latches: Inactive door leaf of lower and upper cabinets and tall storage cabinets shall have one finger spring pull latch mounted on the inside door leaf. Mount spring latch at easy to reach locations.
 - 1. Product: EP1018N manufactured by Epcos, Inc., or equal.
- G. Drawer Slides:
 - 1. Type: Full extension.
 - 2. Static Load Capacity: 150 lbs. minimum.
 - 3. Mounting: Side mounted.
 - 4. Stops: Integral type.
 - 5. Manufacturers:
 - a. Accuride International, Inc; Product - Mod. 3832 (Mod. 4034 at file drawers and paper drawers): www accuride.com.
 - b. Knappe & Vogt Manufacturing Company; Product -Mod. 8400 (Mod. 8500 at file drawers and paper drawers): www.knappeandvogt.com.
- H. Hinges: 5-knuckle 304 stainless steel overlay hinges, 2-3/4 inch in height, hospital tips, 270 degree opening angle, drilled knuckle IDs and machined knuckle edges, and a non-removable knurled pin. Hinges to meet ANSI/BHMA Grade 1, Standard No. 156.9.
 - 1. Product: Model No. 854 manufactured by Rockford Process Control, Inc., Rockford, Illinois, 815-966-2026, or equal.
- I. Grommets: Plastic, 2-3/8" dia. hole. Provide minimum one grommet at each work station

and/or computer station.

1. Product: Executive Cable Grommet No. 429 manufactured by Closet-Masters, Inc., or equal.
 2. Product: 3000 Series manufactured by Mold Rite, Inc.
- J. Sliding Door Track Assemblies: Upper and lower track of satin anodized aluminum, with matching shoe equipped with nylon slides.
1. Product: EP2 manufactured by Epco, Inc., or equal.
- K. Sliding Door Pulls: U" shaped wire pull, steel with satin finish, 4 inch centers ("U" shaped wire pull, steel with satin finish, 100 mm centers).
1. Product: EPCO MC-402 manufactured by Epco, Inc., or equal.

2.05 FABRICATION

- A. Laminated Plastic Casework: Custom Grade, Construction Type 1, Construction Style A - Frameless.
- B. Field verify all dimensions prior to fabrication of casework and countertops.
- C. Fabricate all casework and countertops in accordance with Wood Institute - Manual of Millwork, latest edition, for the grades specified. Comply with "Guidelines to Seismic Casework Fabrication".
- D. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
- E. Edging: Fit shelves, doors, exposed edges, etc., with specified edging. Do not use more than one piece for any single length.
- F. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.
- G. Shelving: The minimum length of adjustable shelves shall be 1/16" less than the inside dimension of the cabinet. All exposed shelving in the same room shall be the same thickness.
- H. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners.
1. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.
 2. Cap exposed plastic laminate finish edges with material of same finish and pattern.
- I. Countertops: Self Edge, Custom Grade. Provide Waterfall Edge, Custom Grade, at all kindergarten classrooms.
- J. Splashes: Integrally coved splash, 6 inches high unless otherwise noted.
- K. Provide cutouts for plumbing fixtures, inserts, and outlet boxes. Verify locations of cutouts from on-site dimensions. Seal cut edges.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify adequacy of backing and support framing.
- B. Verify location and sizes of utility rough-in associated with work of this section.

3.02 INSTALLATION

- A. Install all casework in accordance with Woodwork Institute - Architectural Woodwork Standards, comply with "Guidelines to Casework Installation Requirements".
- B. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.

- C. Use fixture attachments in concealed locations for wall mounted components.
- D. Use concealed joint fasteners to align and secure adjoining cabinet units and countertops.
- E. Carefully scribe casework abutting other components, walls, and ceilings, with maximum gaps of 1/32 inch (1 mm). Do not use additional overlay trim for this purpose.
- F. Furnish fillers, closures and trim for a complete installation. Provide fillers/scribes in toe space - sides and top, typical. Fill all gaps in cabinetry at all exposed surfaces including: toe spaces, under countertops, at gaps at top or bottom of wall hung cabinetry or tall storage units. Provide backing for filler/scribe. Plastic laminate alone shall not be acceptable as a filler/scribe. Fill all concealed openings and holes, horizontal or vertical.
- G. Fasten wall cabinets to wood blocking or CMU wall at maximum spacing of 32 inches on-centers. Minimum screw size shall be #14 x 3" Truss Head screw at wood or metal stud walls and 1/4" x 3-1/4", Hilti Kwik-Bolt 3 (ICC-ES ESR-1385) fasteners at CMU walls. Provide minimum 1-1/2" penetration into blocking or CMU wall.
- H. Adjacent cabinet units shall be fastened together both front and back with a minimum of four (4) #8 x 1-1/4" oval or pan head screws, a maximum of 30" on center.
- I. Install trim in as long lengths as possible with running joints mitered and fitted tight. Miter exterior corners. Color and laminate plastic finish shall be same as face of cabinet.
- J. Caulk all dissimilar joints. Color as selected by the Architect.
- K. Secure cabinets to floor using appropriate angles and anchorages.

3.03 ADJUSTING

- A. Adjust installed work.
- B. Adjust moving or operating parts to function smoothly and correctly.

3.04 CLEANING

- A. Clean casework, counters, shelves, hardware, fittings, and fixtures.
- B. Touch up stained, scratched or otherwise discolored surfaces to match original shop finish or samples. Replace portions of work cut or otherwise damaged too badly to repair by touch up.

END OF SECTION