

SECTION 06 4500

Custom Plastic Laminate Casework

PART 1. GENERAL

1.1 SUMMARY OF THE WORK: Furnish delivered to jobsite, unloaded, set in place, leveled and scribed, the work of this Section as indicated on the drawings and as specified and required for a complete installation.

1.2 SECTION INCLUDES:

- A. Custom casework: high pressure decorative laminate finish
- B. Countertops: high pressure decorative laminate finish
- C. Hardware customarily furnished by the casework manufacturer
- D. Installation

1.3 RELATED SECTIONS

- A. Rough carpentry, Section 6100, wood blocking, and grounds within finished walls and above finished ceiling
- B. Finish carpentry, Section 6200, wood trim
- C. Division 5, Metal Fabrications
- D. Division 7, Joint Sealants
- E. Division 10, Specialties
- F. Division 11, Equipment
- G. Division 12, Furnishings (Laboratory Casework)
- H. Division 15, Mechanical Section
- I. Division 16, Electrical Section

1.4 REFERENCES

- A. Architectural Woodwork Institute, AWI Quality Standards, current edition
- B. ANSI/BHMA A156.9 - Cabinet hardware
- C. NEMA LD3 - High pressure decorative laminate
- D. Particleboard – ANSI 208.1 (American National Standards Institute)
- E. Softwood plywood – US Products Standards PS1
- F. Hardboard – ANSI AHA 135.484 (American Hardboard Association)
- G. PVA adhesive (polyvinyl acetate) white glue, Type II ASTM-D3110
- H. Aliphatic adhesive (carpenter's glue) Type II
- I. Solvent-based contact cement MMM-A-J1308

1.5 SUBMITTALS

- A. Submit as required in Section 01340.
- B. SHOP DRAWINGS:
 - 1. Prior to commencement of work under this section, submit copies as required in

Section 01340.

2. Submit plans and elevations indicating materials, profiles, assembly methods, joint details, fastening methods, and schedule of finishes. Include hardware cut sheets and lock schedules.
3. Submit drawings with dimensions in units of feet and inches.

C. **SAMPLES:**

1. If required by the Architect, submit a selected manufacturer's current full range of colors and patterns identifying those colors and patterns with premium costs.
2. Submit one sample of each type of required hardware in specified finish.
3. Submit one set of samples showing the current full range of colors for 0.5mm and 3mm PVC edge banding for selection by the Architect.

1.6 QUALITY ASSURANCE

- A. Perform work in accordance with AWI Quality Standards, current addition.
- B. Work in this Section shall comply with the specified Grade(s) or Work and Section(s) of the current edition of the Architectural Woodwork Institute Quality Standards.
- C. Woodwork manufacturers shall be certified by the AWI Quality Certification Program as competent to perform the work specified.
- D. Certification shall be evidenced through the application of AWI Quality Certification labels and/or the issuance of an AWI letter of certification for the project. QCP Registration # _____.

Architect Note: CALL AWI QUALITY CERTIFICATION PROGRAM (800) 449-8811 FOR PROJECT REGISTRATION NUMBER PRIOR TO BID or REGISTER ON LINE @ awinet.org

- E. Contractors and their personnel engaged in the work of this section shall be able to demonstrate successful experience with work of comparable extent, complexity and quality to that shown and specified.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to job site in a timely manner to ensure uninterrupted progress. Deliver all products with protective covering to prevent damage. Promptly remove damaged materials from job site and make timely replacements.
- B. Protect units from moisture damage according to AWI Quality Standards, Section 1700, Installation.
- C. Environmental Limitations: Do not deliver or install wood work until building is enclosed, wet work is complete, and HVAC is operating and maintaining designed temperature and relative humidity levels for the remainder of the construction period.

1.8 COORDINATION

- A. Coordinate work of this Section with other applicable trades.
- B. Pre-cut rough-ins for plumbing, electrical and data wherever possible.

1.9 FIELD MEASUREMENTS

- A. Where casework is indicated to be fitted to other construction, check actual dimensions of other construction by accurate field measurements before fabrication, and show recorded measurements on final shop drawings.

1.10 WARRANTY.

- A. Provide a written warranty that all casework materials and workmanship will be free from defects for a period of one year from the date of Substantial Completion of the project. Any defective work is to be repaired or replaced at no cost to the Owner.

PART 2. PRODUCTS:

2.1 APPROVED MANUFACTURERS:

- A. The following manufacturers are approved for use based upon their being current participants in the Quality Certification Program (QCP) of the Architectural Woodwork Institute (AWI). If other manufacturers are current participants in the QCP, they may submit for Prior Approval as approved manufacturers:
 - 1. Albuquerque Cabinets, Inc.: 4800 Hawkins NE, Albuquerque, NM 87109.
 - 2. Calmar Manufacturing Co. Inc (Tru-Bilt brand): Calmar, Iowa - Represented by Institutional Products, LLC 230 Cynthia Loop NW, Suite C, Albuquerque, NM 87114.
 - 3. Casework Technologies, Ltd. Co.: 709 Haines Ave. NW., Albuquerque, NM 87102.
 - 4. Fame Manufacturing / New Mexico School Products: 3020 Princeton NE, PO Box 2126, Albuquerque, NM 87103
 - 5. Imperial Casework, Inc.: 2716 Chico Street, El Paso, TX 79903-3702.
 - 6. LSI Corporation of America: 2100 Xenium Lane, Minneapolis, MN 55441. Represented by Indeco Sales, Inc., 805 East 4th Ave., Belton, TX 76513 and by Aesop's Gables, 4810 Pan American NE, Albuquerque, NM 87109.
 - 7. O.G.B. Architectural Millwork: 3711 Paseo Del Norte, Suite B, Albuquerque, NM 87113.

8. TechlineUSA: Waunakee, Wisconsin. Represented by P&M Caseworks, LLC, 4100 Menaul Blvd NE, Albuquerque, NM 87110.
9. TMI Systems Design Corporation: Dickinson, North Dakota. Represented by Institutional Products, LLC, 230 Cynthia Loop NW, Suite C, Albuquerque, NM 87114.
10. Westmark Casework: Tacoma, Washington - Represented by A.C.I.E., 4800 Hawkins NE, Albuquerque, NM 87109.

2.2 SHEET MATERIALS

- A. SOFTWOOD PLYWOOD: Graded in accordance with AWI Grade Custom.
- B. WOOD PARTICLEBOARD AND/OR FIBERBOARD: Shall be Industrial Grade Medium Density, complying with current ANSI A208.1 9 (particle board) or ANSI A208.2 (fiberboard), and shall be a “45 lb” board.
- C. THERMOSET DECORATIVE OVERLAY: Particleboard or medium density fiberboard with surface of thermally fused, melamine–impregnated decorative paper complying with LMA SAT-1. Color: [specify color] White, Almond, Grey

2.3 HIGH PRESSURE DECORATIVE LAMINATE

- A. AVAILABLE MANUFACTURERS: Subject to compliance with requirements, manufacturers offering high pressure decorative laminate that may be incorporated into the work include:
 1. Formica Corporation www.formica.com
 2. Wilsonart International www.wilsonart.com
 3. Nevamar Company www.nevamar.com

2.4 LAMINATE COLORS AND PATTERNS

- A. In the absence of a specified laminate pattern and/or color, furnish non-premium-priced decorative laminates from manufacturer’s standard selections, **maximum of four different colors and/or patterns per project, limited to one color/pattern for cabinet and one color/pattern for countertop per elevation.** When specified, furnish multiple patterns, colors and/or specialty materials.

2.5 HARDWARE

- A. CLASSROOM CABINETRY
Hinges: Provide hinges from one of the following listed Brands:
 1. MEPLA – SSP 73 Hinge System.
 2. GRASS - Series 9000 Institutional Hinge SystemQuantity of hinges per door as required by the manufacturer’s specifications.
- B. OFFICE CABINETRY
Hinges: Provide hinges from one of the following listed Brands:

1. MEPLA – Model SSP 29, 125 deg. Slide on Hinge.
2. GRASS – Series 3803 series, 120 deg. Snap on hinge.
3. BLUM – 120 deg. Clip on hinge.

C. PULLS

1. Door and drawer pulls shall be semi-flush injection molded ABS plastic with round safety corners and surfaces eliminating the possibility of garments and equipment from getting caught.
2. Bainbridge Manufacturing: Product number 1710. Color as selected by Architect. www.bainbridgemfg.com
3. Substitutions for the above products shall be submitted for approval prior to bidding in accordance with the requirements of Section 00101, Instruction to Bidders.

D. LOCKS: Provide on all doors and drawers. Brand: TIMBERLINE Cam Lock, Model CB-080 through 199 series. Locks to have a Bezel. Strike plates used where appropriate.

Keying Requirements: All locks in a single room shall be keyed alike. Locks shall be keyed different from room to room. Provide 2 master keys.

E. LATCHES: EPCO Model number 1018-N. Use on inactive door opposite locks.

F. DRAWER SLIDES: Drawer slides for all standard drawers shall be regular extension epoxy coated steel modular system by one of the following:

1. BLUM METABOX; Drawer System 320 & 330 Series. Color, white.
2. GRASS ZARGON; Drawer System 6000 Series. Color, white.
3. MEPLA INTEGRA; Drawer System “Integra Top” Clip on.

Where shown in drawings, file drawers shall have full extension slides and standard file hangers with option for letter or legal size files.

G. MAP CABINET DRAWER SLIDES: Drawer slides for all map style cabinets shall be regular extension epoxy coated by one of the following.

1. BLUM 230E; 100 lb. Bottom Mount drawer slide with stay-close detents.
2. GRASS 6610; 100 lb. Bottom Mount drawer slide with stay-close detents.
3. MEPLA-AFIT AL 1700; Bottom Mount drawer slide.

H. CASEWORK SHELF SUPPORTS: Bainbridge Mfg, 5mm dual pin part #3220 or equal.

I. HORIZONTAL DIVIDER SUPPORTS: Hafele 5mm steel wire (“magic wire”). Furnish in size appropriate to shelf size.

J. WARDROBE CABINET HARDWARE:

1. CLOSET ROD: Knape & Vogt #750 I Regular. Chrome-look finish.
2. ROD FLANGES: Knape & Vogt #734 & #735 per rod. Chrome-look finish.
3. ROD CENTER SUPPORTS: Knape & Vogt #1195. White.
4. HOOKS: IVES #581 single hook and/or #582 dual hook. Refer to drawings for type. Chrome-look finish.

5. MIRROR: 12" x 12" x 1/4" All edges covered with chrome or molded PVC trim. Fasten to back side of cabinet door with mirror clips.
- K. COUNTERTOP WIRING GROMMETS: 2 1/2" diameter with covers. Color black unless otherwise noted.

PART 3 EXECUTION

3.1 FABRICATION - CABINET COMPONENTS

A. GENERAL:

1. Comply with the AWI Quality Standards (latest edition) Custom Grade.
2. Reference Section 400-G-3, Identification of Parts, for the criteria of exposed and semi-exposed surfaces.
3. Cabinet width dimensions are not to exceed 32" for both wall cabinets and base cabinets. Sink base cabinets and Map drawer cabinets will be the only exceptions.
4. Office Cabinetry style shall be constructed per Section 400-G-7, A; Flush Overlay.
5. Classroom cabinetry style shall be constructed per Section 400-G-7, B; Reveal Overlay.

B. DRAWERS:

1. Drawer fronts shall be 3/4" thick particleboard overlaid with high-pressure plastic laminate on both faces. Edges are banded with 3mm PVC with outer edges 1/8" radius. PVC edge colors shall be chosen from the submitted range to compliment or match the face color.
2. Steel Drawer Systems: Drawer bottoms and backs shall be 3/4" thick thermo fused melamine. Color to match cabinet interior. Edges are banded with .5mm PVC color to match cabinet interior.
3. Built Drawer Boxes:
 - a. Drawer sides, sub front and backs shall be 1/2" thick minimum thermofused melamine. Color to match cabinet interior. Edges are banded with .5mm PVC color to match cabinet interior.
 - b. Drawer bottoms shall be 1/2" thick minimum thermofused melamine. Color to match cabinet interior. Sides are rabbeted to accept bottom and bottom is to be glued and screwed as well as supported by screws from the bottom mount slides.

- C. DOORS: Doors shall be 3/4" thick particleboard overlaid with a high-pressure plastic laminate on both faces. Edges shall be banded 3mm PVC with outer edges 1/8"

radius. PVC edge colors shall be from the selected range to either match or compliment the face color.

D. CABINET ENDS, TOPS & BOTTOMS:

1. All panels shall be constructed with 3/4" particleboard as the core material.
2. At Semi-exposed (see AWI standards for definition and locations) ends, tops or bottoms the particleboard shall be overlaid with thermofused melamine on the exterior face.
3. At Exposed (see AWI standards for definition and locations) ends, tops or bottoms, the particleboard shall be overlaid with a high pressure decorative laminate on exposed faces. The inside color shall match the cabinet interior with the face color to match exterior color. The front edges shall be banded with .5mm PVC in color as selected by the Architect from the colors submitted.
4. In cabinets with doors, the interior surfaces of the particleboard shall be overlaid with either high pressure laminate cabinet liner or thermofused melamine. The color shall match the melamine surfaced back color. The front edges shall be banded with .5mm PVC to match exposed face color or as selected by the Architect from the colors submitted.
5. In open cabinets (without doors), the interior surfaces of the particleboard shall be overlaid with high pressure decorative to match exposed exterior color. The front edges shall be banded with .5mm PVC to match exposed face color or as selected by the Architect from the colors submitted.
6. All end panels shall be drilled for adjustable shelf supports with .5mm diameter holes on 32mm (1 1/4") centers. For shelves up to and including 30" depth, two vertical sets of holes shall be provided at each end panel. For shelves over 30" deep, three vertical sets of holes shall be provided at each end panel.

E. FIXED AND ADJUSTABLE SHELVES:

1. Semi-exposed Shelves: Regardless of cabinet width, all shelves shall be 1" thick particleboard overlaid with thermofused melamine on top and bottom faces. Color to match cabinet interior.
2. Exposed Shelves: Regardless of cabinet width, all shelves shall be 1" particleboard overlaid with high pressure decorative laminate. Color to match exterior unless otherwise noted on the drawings.
3. All four edges of adjustable shelves and front edge of fixed shelves shall be banded with .5mm edge banding in color to match shelf color or as selected by the Architect from the colors submitted.

F. CABINET BACKS:

1. All semi-exposed cabinet backs shall be 3/4" thick minimum thermofused melamine. Color to match cabinet interior.
2. All exposed backs shall be 3/4" thick minimum particleboard overlaid with a high-pressure plastic laminate. Color to match exterior for exposed backs.
3. Provide removable backs for service access where shown on the project drawings.
4. All backs shall be full bound by all sides, tops and bottoms of the cabinet.

G. DIVIDERS AND PARTITIONS:

1. Vertical dividers and partitions shall be 3/4" particleboard overlaid with thermofused melamine on both faces when semi-exposed and high pressure decorative laminate for exposed surfaces. The exposed edges shall be banded with .5mm PVC to match the other case edges.
2. Fixed Horizontal Dividers: Where indicated on the drawings, dividers less than 6" apart and less than 12" wide shall be 1/4" tempered hardboard grooved into adjacent cabinet members. The edges shall be sanded and entire shelf clear sealed.
3. Adjustable Horizontal Dividers: Where indicated on the drawings, dividers shall be 3/4" particleboard overlaid with thermofused melamine on both faces when semi-exposed and high pressure decorative laminate for exposed surfaces. Dividers shall be grooved to accept steel "magic wire" supports. The exposed edges shall be banded with .5mm PVC to match the other case edges

H. CABINET TOE BASES:

1. Cabinet bases shall be 4" standard height made in continuous lengths to ensure straight, level and true line of casework. The standard core materials shall be 3/4" particleboard. In rooms with floor drains, the core material shall be "Medex" MDF board or equal.
2. Bases shall be unfinished and ready for scheduled base finish to be applied.

I. MAP (FLAT FILE) CABINETS:

1. Drawer slides shall be as required in hardware section 2.6.G.
2. Drawer sides, sub front and backs shall be 1/2" thick minimum thermofused melamine. Color shall match cabinet interior. Edges shall be banded with .5mm PVC color to match cabinet interior.
3. Drawer bottoms shall be 1/2" thick minimum thermofused melamine. Color shall match cabinet interior. Sides shall be rabbeted to accept bottom and bottom is to

be glued and screwed as well as supported by screws from the bottom mount slides.

4. Map cabinets over 24" wide shall have 2 pulls per drawer face.
5. Provide a paper curl stop on each drawer box located at the top back of the drawer box. Stop shall be 4" wide by 1/4" thick melamine panel and shall be screw attached.
4. Mobile cabinets shall be finished on all exterior sides, back and top. Provide minimum of 4 casters adequate to support fully loaded weight with ease of transport over both carpet and tiled flooring surfaces.

3.2 FABRICATION - COUNTER TOPS

A. GENERAL:

1. Comply with the AWI Quality Standards (latest edition) Custom Grade. Reference Section 400C
2. Decorative laminate counter tops shall be PF42 NEMA grade laminate with .020" backing sheet bonded to 3/4" particleboard substrate. Adhesives shall be either Type II PVA or contact cement depending on the size of the materials and job conditions.
3. Decorative laminate color selections shall be as selected from manufacturer's non-premium-priced patterns and colors. Reference Part 2, Section 2.2 and 2.3 for manufacturer brands and color quantity requirements.
4. Counter top thickness shall be as noted in Section B. below.
5. Where tops and back splashes in which sinks occur, utilize an industrial grade particle board or fiberboard with a 24 hour thickness swell factor of 5% or less and a 24 hour water absorption factor of 10% or less.
6. Counter tops shall be furnished in the longest lengths possible. When joints are required, they shall be factory prepared with a minimum of three 1/4" joint bolts each. Joints shall be field assembled with waterproof sealant to ensure stable and rigid construction. Avoid joints within 24" of sinks or knee spaces.

B. COUNTERTOP OPTIONS:

1. 180 Degree Wrap Post Forming Decorative Laminate Counter Tops:
 - a. Where called for on the drawings, overall counter top thickness shall be 1 1/4" with buildup added to the substrate. A 1/4" wide x 1/4" deep drip groove shall be cut in the underside of the top in from the leading edge of the counter top. Standard overhang from cabinet body along front shall be 1 1/2". Exposed end overhang shall be 1/2".

- b. Post-formed counter tops shall be PF42 NEMA grade laminate with .020” backing sheet bonded to 3/4” particleboard substrate. This laminate shall be heated and then wrapped around the substrate as designed.
 - c. Back splashes shall be 3/4” thick and 4” high self edged, unless specified otherwise.
2. PVC Edged Decorative Laminate Counter Tops.
- a. Where called for on the drawings, overall counter top thickness shall be 1 1/4” with buildup added to the substrate. Standard overhang from cabinet body along front shall be 1 1/2”. Exposed end overhang shall be 1/2”.
 - b. Front edge of counter tops shall have 3mm PVC edge banding. Edge colors shall be from a select range to either match or compliment the top color.
 - c. Back splashes shall be 3/4” thick and 4” high edged with same 3mm PVC banding as front edge unless specified otherwise.

3.3 EXAMINATION

- A. Verify adequacy of in wall backing and support framing.
- B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work
- C. Before installing architectural woodwork, examine shop fabricated work for completion and complete work as required, including back priming and removal of packing.
- D. Condition building and woodwork to average prevailing humidity conditions in installation areas before installing.

3.4 INSTALLATION

- A. Install work in accordance with AWI Quality Standards (latest edition) Section 1700. Grade Custom.
- B. Set and secure materials and components in place, plumb and level. Shim as required with concealed shims.
- C. Scribe work abutting other components or work. Refinish cut surfaces or repair damaged finish at cuts.
- D. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure to grounds, strapping and blocking with countersunk, concealed fasteners with blind nailing where possible for a complete installation.
- E. CABINETS: Install without distortion so that doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete the installation of hardware and accessory items as indicated.

- F. TOPS: Anchor securely to base units and other support systems as indicated. Caulk space between backsplash and wall with specified sealant.

3.5 ADJUSTING AND CLEANING

- A. Repair damaged and defective woodwork where possible to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.
- B. Clean, lubricate, and adjust hardware.
- C. Clean woodwork on exposed and semi-exposed surfaces. Touch up shop applied finishes to restore damaged or soiled areas.

3.6 PROTECTION

- A. Provide final protection and maintain conditions in a manner acceptable to fabricator and installer that ensures that woodwork is without damage or deterioration at the time of Substantial Completion.