



SECTION 123400
TMI MELEMENTARY PROGRAM

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Fixed modular thermally fused melamine (TFM) clad casework and components.
- B. Countertops.

1.02 RELATED SECTIONS

- A. Blocking within walls where indicated: Division 6.
- B. Millwork, trim, and custom cabinetry: Division 6.
- C. Locks master keyed to room doors: Division 8.
- D. Glass: Division 8.
- E. Base molding: Division 9.
- F. Appliances: Division 11.
- G. Sinks and service fixtures, service waste lines, connections, and vents: Division 15.
- H. Electrical service fixtures: Division 16.

1.03 DEFINITIONS

- A. Identification of casework components and related products by surface visibility.
 - 1. Open Interiors: Any open storage unit without solid door or drawer fronts, units with full glass insert doors and/or acrylic doors, and units with sliding solid doors.
 - 2. Closed Interiors: Any closed storage unit behind solid door or drawer fronts.
 - 3. Exposed Ends: Any storage unit exterior side surface that is visible after installation.
 - 4. Other Exposed Surfaces: Faces of doors and drawers when closed, and tops of cabinets less than 72 inches above furnished floor.
 - 5. Semi-Exposed Surfaces: Interior surfaces which are visible, bottoms of wall cabinets and tops of cabinets 72 inches or more above finished floor.
 - 6. Concealed Surfaces: Any surface not visible after installation.

1.04 QUALITY ASSURANCE

- A. Manufacturer: Minimum of 5 years experience in providing manufactured casework systems for similar types of projects, produce evidence of financial stability, bonding capacity, and adequate facilities and personnel required to perform on this project.
- B. Manufacturer: Provide products certified as meeting or exceeding ANSI-A 161.1-2000 testing standards.

1.05 SUBMITTALS

- A. Comply with Section 01330, unless otherwise indicated.
- B. Product Data: Manufacturer's catalog with specifications and construction details.
- C. Shop Drawings: Indicate dimensions, description of materials and finishes, general construction, specific modifications, component connections, anchorage methods, hardware, and installation procedures, plus the following specific requirements.
 - 1. Include section drawings of typical and special casework, work surfaces and accessories.
 - 2. Indicate locations of plumbing and electrical service field connection by others.

1.06 PRODUCT HANDLING

- A. Deliver completed casework, countertops, and related products only after wet operations in building are completed, store in ventilated place, protected from the weather, with relative humidity range of 25 percent to 55 percent.
- B. Protect finished surfaces from soiling and damage during handling and installation with a protective covering.

1.07 JOB CONDITIONS

- A. Environmental Requirements: Do not install casework until permanent HVAC systems are operating and temperature and humidity have been stabilized for at least 1 week.
 - 1. Manufacturer/Supplier shall advise Contractor of temperature and humidity requirements for architectural casework installation areas.
 - 2. After installation, control temperature and humidity to maintain relative humidity between 25 percent and 55 percent.
- B. Conditions: Do not install casework until interior concrete work, masonry, plastering and other wet operations are complete.

- 1.08 WARRANTY
- A. All materials and workmanship covered by this section will carry a one (1) year warranty from date of acceptance.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS:

- A. Manufacturer:
1. TMI Systems Design Corporation.
 - a. Drawings and specifications are based on manufacturer's literature from TMI SYSTEMS DESIGN CORPORATION, 50 South Third Avenue West, Dickinson, North Dakota, 58601, Phone: 800-456-6716, fixed modular, flexible rail mounted, and mobile casework and accessories.
 - b. Other manufacturers shall comply with the minimum levels of material and detailing indicated on the drawings or as specified.

2.02 MATERIALS

- A. Core Materials:
1. Particleboard up to 7/8 inch thick: Industrial Grade average 47-pound density particleboard, ANSI A 208.1-2009, M-2 requirements.
 2. Particleboard 1 inch thick and thicker: Industrial Grade average 45-pound density particleboard, ANSI A 208.1-2009, M-2 requirements.
 3. MR Moisture Resistant Particleboard: Average 47-pound density particleboard, ANSI A208.1 1-2009, M-2 requirements.
- B. Decorative Finish
1. Thermally fused melamine (TFM) laminate, NEMA Test LD 3-2005.
- C. Color Selection: Maximum 1 color per cabinet (all surfaces) and 3 colors per project. (See Color Selection in section 3.05).
- D. Edging Materials:
1. 1mm PVC banding, machine applied.
 2. 3mm PVC banding, machine applied and machine profiled to 1/8 inch radius.
- E. Glass:
1. Wall unit full sliding glass doors: 1/4 inch thick laminated safety glass.
 2. Glass insert doors, hinged or sliding wall cabinets: 1/4 inch thick laminated safety glass.
 3. Glass insert doors, hinged or sliding tall or base cabinets. 1/4 inch thick laminate safety glass.
 4. Sliding doors mounted in aluminum track.
 5. Trim glass inserts: Extruded rigid PVC channel and self-locking insert retainer strip.

2.03 SPECIALTY ITEMS

- A. Support Members:
1. Countertop support brackets: Epoxy powder coated, 11 gauge steel with integral cleat mount opening and wire management opening.
 2. Undercounter support frames: Epoxy powder coated.
 3. Legs: Epoxy powder coated.
- B. Tote Trays:
1. Heavy-duty vacuum-formed polypropylene plastic with full top rim and pull. Trays are ivory color, equipped with label holder.
 2. Tote tray/supply cabinets equipped with injection molded polycarbonate; continuous side rail support glide. Each side rail support glide is adjustable with integral support pins to interface 32mm pre-drilled holes.
- C. Mobile Storage Units:
1. Tall mobile storage units, as indicated on the drawings, are structural steel framed with epoxy powder coated tubing.
 2. Casters: 5 inch soft rubber double ball bearing, heavy gauge steel fork, zinc plate finish with 2 brakes per unit. Load capacity per caster to be a minimum of 200 pounds.
 3. Side panels, back, top, drawer fronts, and doors are of 3/4 inch thick particleboard, laminated on the exterior and on the interior with thermally fused melamine. Exposed edges are PVC banding, 1mm or 3mm thickness, to match adjacent casework.
 4. Low mobile storage units are mounted to a caster base.
- D. Computer Keyboard Tray:
1. Non-articulating, undercounter mount with positive stop drawer slides.

- E. Music Specialty/Heavy Duty Storage Units:
1. Instrument and uniform storage unit: End panels and vertical dividers are thermally fused melamine laminates, both faces, with 3mm PVC front edging. Cabinet backs are 1/2 inch thick particleboard core laminated with thermally fused melamine laminate.
 - a. All music specialty/heavy duty storage units will have white interior finish.
 2. Tops and bottoms are glued and doweled to cabinet sides and internal cabinet components such as fixed horizontals and vertical dividers. Exposed assembly hardware and through-bolt assembly construction methods will not be accepted.
 3. All musical instrument storage casework shall be assembled and finished at the factory utilizing a case clamp to ensure tight joints and a square box. Field assembled casework will not be accepted.
 - b. Any units too large to fit through a standard 36 inch wide doorway may be shipped knocked down and assembled in the field.
 4. Instrument shelves: 1 inch thick particleboard core laminated both faces with thermally fused melamine laminate. Shelves are doweled into sides. Top surface is molded flat stock heavy-duty polyethylene with textured abrasion-resistant finish permanently bonded to shelf. Front of shelf edged with machine applied 3mm PVC edge banding, black color matching heavy-duty polyethylene. Removable or adjustable shelves and shelves attached with mechanical fasteners will not be accepted.
 5. Wire grille doors: Door frame to be 5/16 inch diameter heavy gauge metal rod welded to 3/16 inch diameter verticals with beveled end to produce a clean, finished look; 2-3/4 inch, hospital tip, 0.095 inch thick steel, five knuckle hinges welded to door. Padlock eyelets and label holder included.
 6. Solid doors: 3/4 inch thick particleboard core laminated with thermally fused melamine laminate on both faces. 3mm PVC edged doors and five knuckle, 2-3/4 inch, hospital tip, 0.095 inch thick steel epoxy powder coated hinges. Padlock eyelets included.
 7. Stay Close Latch: (Where shown on drawings.) Latch and door strike to be 13 gauge steel finished in bright chrome. Latch to have contour allowing it to travel over the hasp into a positive locked position. Door may be padlocked for added security. Padlocks not included.

2.04 CABINET HARDWARE

- A. Hinges:
1. Five knuckle, epoxy powder coated, institutional grade, 2-3/4 inch overlay type with hospital tip. 0.095 inch thick. ANSI-BHMA standard A156.9, Grade 1.
 - a. Doors 48 inches and over in height have 3 hinges per door.
 - b. Magnetic door catch with maximum 5 pound pull provided, attached with screws and slotted for adjustment.
- B. Pulls:
1. Door and drawer front pulls, are epoxy powder coated metal wire, 96mm spacing on screws. Pull design shall comply with the Americans with Disability Act (ADA).
- C. Drawer Slides:
1. Regular, kneespace and pencil: 100-pound load rated epoxy coated steel, bottom corner mounted with smooth and quiet nylon rollers. Positive stop both directions with self-closing feature. Paper storage, 150-pound load rated epoxy coated steel slides.
 2. File: Full extension, 150-pound load rated epoxy coated steel, bottom corner mounted with smooth and quiet nylon rollers. Positive stop both directions with self-closing feature.
- D. Adjustable Shelf Supports:
1. Injection molded transparent polycarbonate friction fit into cabinet end panels and vertical dividers, adjustable on 32mm centers. Each shelf support has 2 integral support pins, 5mm diameter, to interface pre-drilled holes, and to prevent accidental rotation of support. Supports may be field fixed if desired. Structural load to 1,200 pounds (300 pounds per support) without failure.
- E. Locks:
1. Removable core, disc tumbler, cam style lock with strike. Lock for sliding 3/4 inch thick doors is a disc type plunger lock, sliding door type with strike. Lock for sliding glass/acrylic doors is a ratchet type sliding showcase lock.
 2. Elbow catch or chain bolt used to secure inactive door on all locked cabinets.
- F. Sliding Door Track: Anodized aluminum double channel.
- G. Coat Rods: 1 inch diameter, 14-gauge chrome plated steel installed in captive mounting hardware.
- H. File Suspension System: Extruded molding integral with top of drawer box sides to accept standard hanging file folders.
- I. Mirrors: 1/8 inch thick mirrored acrylic, break and impact resistant.

2.05 FABRICATION:

- A. Fabricate casework, countertops and related products to dimensions, profiles, and details shown.
- B. All casework panel components must go through a supplemental sizing process after cutting, producing a panel precisely finished in size and square to within 0.010 inches, ensuring strict dimensional quality and structural integrity in the final fabricated product.
- C. Cabinet Body Construction:
 - 1. Tops and bottoms are glued and doweled to cabinet sides and internal cabinet components such as fixed horizontals, rails and verticals. Minimum 6 dowels each joint for 24 inch deep cabinets and a minimum of 4 dowels each joint for 12 inch deep cabinets.
 - a. All cabinets over 36 inches wide are provided with an on center fixed vertical divider, doweled to cabinet top and bottom panels.
 - b. Tops, bottoms, sides, fixed horizontals and vertical dividers of all cabinets are particleboard core.
 - 2. Cabinet backs: 1/2 inch thick particleboard core, onset design.
 - a. Exposed back on fixed or movable cabinets: 3/4 inch thick particleboard with the exterior surface finished in thermally fused melamine to match exterior surfaces.
 - b. Sink base units: Back to be split removable access panels.
 - 3. Fixed base and tall units have an individual factory-applied base, constructed of 3/4 inch thick plywood. Base is 102mm (nominal 4 inch) high unless otherwise indicated on the drawings.
 - 4. Base units, except sink base units: Full sub-top. Sink base units are provided with open top and a stretcher at the front, attached to the sides.
 - 5. Side panels and vertical dividers shall receive line boring holes at 32mm centers, full height of the panel, for adjustable shelf hardware.
 - 6. Exposed and semi exposed edges.
 - a. Edging: 1mm PVC machine applied.
 - 7. Adjustable Shelves in Cabinets
 - a. Core: Particleboard.
 - b. Core Thickness: 3/4 inch all shelves.
 - c. Edge: 1mm PVC on Front Edge Only.
 - 8. Interior finish, units with open Interiors:
 - a. Top, bottom, back, sides, horizontal and vertical members, and adjustable shelving faces with thermally fused melamine laminate, color and pattern matching face exterior surfaces.
 - 9. Interior finish, units with closed Interiors:
 - a. Top, bottom, back, sides, horizontal and vertical members, and adjustable shelving faces with thermally fused melamine laminate, white color.
 - 10. Exposed ends:
 - a. Faced with thermally fused melamine laminate, color and pattern matching face exterior surfaces.
 - 11. Wall unit bottom:
 - a. Faced with thermally fused melamine laminate, color and pattern matching face exterior surfaces.
 - 12. Balanced construction of all laminated panels is mandatory. Unfinished core stock surfaces, even on concealed surfaces (excluding edges), are not permitted.
- D. Drawers:
 - 1. Sides, back and sub front: Minimum 1/2 inch thick particleboard, laminated with white thermally fused melamine doweled and glued into sides. Top edge banded with 1mm PVC.
 - 2. Drawer bottom: Minimum 1/2 inch thick particleboard laminated with white thermally fused melamine, screwed directly to the bottom edges of drawer box.
 - 3. Paper storage drawers: Minimum 3/4 inch thick particleboard sides, back, and sub front laminated with white thermally fused melamine. Minimum 1/2 inch thick particleboard drawer bottoms screwed directly to the bottom edges of the drawer box. Provide PVC angle retaining bar at the rear of the drawer.
- E. Door/Drawer Fronts:
 - 1. Core: 3/4 inch thick particleboard.
 - 2. Faced with thermally fused melamine laminate, balanced with white thermally fused melamine laminate.
 - 3. Edges: 3mm PVC, machine applied, external edges and outside corners machine profiled to 1/8 inch radius.
 - 4. Provide double doors in opening in excess of 24 inches wide.
- F. Miscellaneous Shelving (not in Cabinets):
 - 1. Core material: 3/4 inch thick particleboard.
 - 2. Faced with thermally fused melamine laminate, color and pattern matching face exterior surfaces.

3. Edges: 3mm PVC, external edges and outside corners machine profiled to 1/8 inch radius.

2.06 COUNTERTOPS:

- A. Core:
 1. All countertops except at sink elevations: 1 inch thick ANSI A208.1-1993 M-2 particleboard.
 2. Countertops at sink elevations: 1 inch thick ANSI A208.1-1993 M-3 moisture resistant (MR) particleboard.
- B. Surface: High-pressure decorative VGS laminate balanced with backer sheet.
- C. Edges, including applied backsplash: 3mm PVC, exposed edges and corners machine profiled to 1/8 inch radius.
- D. All countertops joints must be dry fit at the factory to check for consistency in color from one panel to the other and overall finished panel thickness, resulting in a high quality product easy to install.

PART 3- EXECUTION

3.01 INSPECTION:

- A. The casework contractor must examine the job site and the conditions under which the work under this section is to be performed, and notify the building owner in writing of unsatisfactory conditions. Do not proceed with work under this Section until satisfactory conditions have been corrected in a manner acceptable to the installer.

3.02 PREPARATION:

- A. Condition casework to average prevailing humidity conditions in installation areas prior to installing.

3.03 INSTALLATION:

- A. Erect casework, plumb, level, true and straight with no distortions. Shim as required. Where laminate clad casework abuts other finished work, scribe and cut to accurate fit.
- B. Adjust casework and hardware so that doors and drawers operate smoothly without warp or bind.
- C. Repair minor damage per thermally fused melamine manufacturer's recommendations.

3.04 CLEANING:

- A. Remove and dispose of all packing materials and related construction debris.
- B. Clean cabinets inside and out. Wipe off fingerprints, pencil marks, and surface soil etc., in preparation for final cleaning by the building owner.

3.05 COLOR SELECTION:

- A. Casework:
 1. Thermally Fused Melamine: Select from TMI Melementary program, offering 30 color selections including woodgrain, pattern, and solid colors.
 2. PVC Edgebanding: Select from TMI Melementary program, offering 30 stock colors matched to thermally fused melamine, including woodgrain, pattern, and solid colors.
- B. Countertops:
 1. Decorative Laminates: GREENGAURD Indoor Air Quality Certified, select from the full range of standard Wilsonart® and Formica® stock color charts.
 2. 3mm PVC: Select from the TMI Vendor Stock PVC Program, including over 110 pattern, woodgrain and solid colors matched to Wilsonart and Formica laminates.
- C. Hardware Color Selection:
 1. Hinge: Select from your choice of epoxy powder coating stock colors matched to White, Beige, Gray, Black and Chrome.
 2. Pulls: Select from your choice of epoxy powder coating stock colors matched to White, Beige, Gray, Black and Chrome.
 3. Miscellaneous Hardware (support brackets, table frames, etc.): Select from your choice of epoxy powder coating stock colors matched to White, Beige, Gray, and Black.

*For complete and current TMI Melementary color availability charts please refer to:

<http://www.tmisystems.com/products/melementary>

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