

## MODULAR PHENOLIC CASEWORK

### 1.00 General

#### 1.01 General Conditions

- A) The General Conditions and Supplementary General Conditions apply to all work in this division.
- B) Warranty: BMT/Nelson Phenolic Casework is warranted for a period of five years. Warranty includes factory-supplied labor and materials should any equipment of our manufacture show failure in material or workmanship. The company will be pleased to repair or replace such defective parts. Warranties do not apply in the event of neglect or abuse of the unit or parts involved.

#### 1.02 Scope of Work

- A) Provide all Phenolic Resin Casework and accessory items as specified herein. Refer to plans for specific details and requirements.
- B) Include all countertops, backsplashes, filler panels, scribe pieces as necessary for a complete installation.
- C) See drawings for equipment schedules by section.

#### 1.03 Related work specified elsewhere

- A) General millwork and custom cabinetry unless specified or so noted on plans.
- B) Resilient base unless so noted on plans.
- C) Blocking within walls.
- D) Sinks, plumbing fixtures, electrical and mechanical equipment and its related installation, unless noted on drawings to be provided by casework contractor.

#### 1.04 Submittals

- A) Submit in accordance with the general, supplementary, and special conditions of the specifications.
- B) Submit shop drawings for approval showing materials, dimensions, sink locations, fittings, and other accessories. Show relation of material furnished under this section with connecting or related work of other suppliers and trades.
- C) Submit samples of colors and hardware cuts as requested.
- D) Submit one full size sample of finished base cabinet complete with hardware, doors and drawers, without finished top.
- E) Submit one full size sample of finished wall mounted cabinet complete with hardware, doors, and adjustable shelves.

#### 1.05 Qualifications

- A) Drawings and specifications are based upon casework manufactured by BMT/Nelson Casework Inc., 2 Pine Street, New Philadelphia, PA 17959.
- B) Casework of other recognized institutional manufacturers may be considered for approval provided a written request is received within ten days prior to the opening of the bids. Casework must conform to design, quality of materials, workmanship and function of casework as specified and shown on plans.

- C) Manufacturers requesting approval shall submit cabinets, catalogs, and specifications with the written request as well as a list detailing those areas in which their product deviates from this specification. Samples may be retained until completion of job for verification of compliance with these specifications.
- D) Architect/Owners opinion and decision shall be final in evaluation of manufacturer's products.

2.00 Materials

2.01 Phenolic Sheets

- A) Phenolic sheets in thickness as specified and in accordance with the test results as shown below.
- B) Technical Data for BMT/Nelson Phenolic Resin Casework

Solid Phenolic Performance Properties as per NEMA Standards:

Coefficient of Linear Expansion	ASTM D696	$1.65 \times 10^{-5}$ in/°C
Comprehensive Strength	ASTM D695	$4.390 \times 10^4$ psi
Fire Resistance	ASTM D635	Self extinguishing
Flexural Strength (Ultimate) (Modulus)	ASTM D790	$2.30 \times 10^4$ psi $1.50 \times 10^4$ psi
Impact Strength	ASTM D256	0.68 ft-lbs in
Tensile Strength (Ultimate) (Modulus)	ASTM D638	$2.20 \times 10^4$ psi $1.70 \times 10^4$ psi
Rockwell Hardness	ASTM D785	120
Water Absorption	ASTM D570	0.30%
Direct Flame Resistance	Bunsen Burner	3 minutes

- C) BMT/Nelson Phenolic Resin Casework Chemical Resistance Test Procedure
  - 1) The sample panel was placed on a flat surface, cleaned with soap and water and blotted dry. The panel was then conditioned for 48 hours at 73°F+/-3°F and 50%+/-5% relative humidity. The phenolic resin sample was then tested for chemical resistance using 48 different chemical reagents by the following methods:
    - a) Volatile Chemicals were tested by placing a cotton ball saturated with reagent in the mouth of a one ounce bottle and inverting the bottle on the surface panel.
    - b) Non-Volatile Chemicals were tested by placing five (5) drops of the reagent on the surface of the panel and covering with a 25mm watch glass.
  - 2) For both of the above methods, the reagents were left on the panel for a period of 24 hours. The panel was then washed off

with water, cleaned with detergent and naphtha, and rinsed with deionized water. The panel was then dried with a towel and evaluated after 24 hours at 73°F+/-3°F and 50%+/-5% relative humidity using the following rating system:

- a) No Effect - No detectable changes in working surface material.
- b) Excellent - Slight detectable change in color or gloss, but no change or significant impairment of working surface function or life.
- c) Good - A clearly discernable change in color or gloss, but no change or significant impairment of working surface function or life.
- d) Fair - Objectionable change in appearance due to surface discoloration or etch, possibly resulting in deterioration in function over a period of time.
- e) Failure - Pitting, cratering or erosion of working surface material. Obvious and significant deterioration.

D) BMT/Nelson Phenolic Resin Casework Chemical Resistance:

Chemical Reagent	Black	White & Colors
Acetate, Amyl	No Effect	No Effect
Acetate, Ethyl	No Effect	No Effect
Acetic Acid 98%	No Effect	No Effect
Acetone	No Effect	No Effect
Acid Dichromate, 5%	No Effect	No Effect
Alcohol, Butyl	No Effect	No Effect
Alcohol, Ethyl	No Effect	No Effect
Alcohol, Methyl	No Effect	No Effect
Ammonium Hydroxide, 28%	No Effect	No Effect
Benzene	No Effect	No Effect
Carbon Tetrachloride	No Effect	No Effect
Chloroform	No Effect	No Effect
Chromic Acid, 60%	No Effect	Excellent
Cresol	No Effect	No Effect
Dichlor Acetic Acid	No Effect	No Effect
Dimethylformamide	No Effect	No Effect
Dioxane	No Effect	No Effect
Ethyl Ether	No Effect	No Effect
Formaldehyde, 37%	No Effect	No Effect
Formic Acid, 90%	No Effect	Excellent
Furfural	No Effect	No Effect
Gasoline	No Effect	No Effect
Hydrochloric Acid, 37%	No Effect	No Effect
Hydrofluoric Acid, 48%	No Effect	Excellent
Hydrogen Peroxide, 3%	No Effect	No Effect
Iodine, Tincture of	No Effect	No Effect

Methyl Ethyl Ketone	No Effect	No Effect
Methyl Chloride	No Effect	No Effect
Mono Chlorobenzene	No Effect	No Effect
Napthalene	No Effect	No Effect
Nitric Acid, 20%	No Effect	Good
Nitric Acid, 30%	No Effect	Good
Phenol, 90%	No Effect	No Effect
Phosphoric Acid, 85%	No Effect	No Effect
Silver Nitrate, Saturated	No Effect	No Effect
Sodium Hydroxide, 10%	No Effect	No Effect
Sodium Hydroxide, 20	No Effect	No Effect
Sodium Hydroxide, 40	No Effect	Excellent
Sulfuric Acid, 33%	No Effect	Excellent
Zinc Chloride Saturated	No Effect	No Effect

## 2.02 Hardware

- A) Hinges to be heavy duty, five-knuckle institutional-tip, fixed pin feature with all edges eased. Hinge to be full wrap around type of tempered steel .095" thick. Each hinge to have a minimum of seven screw attachment holes. Hinges to accommodate door thickness of 1/2". Hinge to be black epoxy powder finish.
- B) Hinges: One pair per door to 48" height. One and one-half pair over 48" in height. Hinge to allow 270 degrees of swing.
- C) Pulls to be Black Nylon 4" O.C., Hewi Model #548-110-90.
- D) Pulls: Drawers under 30" in width to receive one pull. Drawers over 30" in width to receive two pulls. All doors to receive one pull.
- E) Catches: Steel zinc finish polyethylene roller type heavy-duty catch with adjustable tension feature.
- F) Drawer slides: As shown below or as specified by Owner/Architect.
  - 1) Standard drawers: Self closing epoxy coated steel bottom corner mounted with 80% extension. Rollers to be nylon with tempered steel axles. Drawer slides to have captive profiles to provide stable tracking and positive pullout stop with a secondary lock-out position. Load capacity to be 100 Lbs.
  - 2) File drawers: Self closing epoxy coated steel bottom corner mounted with 100% extension. Rollers to be nylon with tempered steel axles. Drawer slides to have captive profiles to provide stable tracking and positive pullout stop with a secondary lock-out position. Load capacity to be 100 Lbs.
- G) Owner/Architect.
  - 1) Phenolic framed glass doors and solid phenolic doors: To be supported from top of door by extruded aluminum track. Fully adjustable steel carriers with two nylon wheels per carrier to be attached to door, two carrier assemblies to be attached to each door. Load capacity per door to be 75 lbs. Nylon floor guides to be attached to cabinet bottom to hold doors captive and insure proper sliding action. Glass to be 1/4" laminated safety glass.

- 2) Unframed glass doors: Doors to be 1/4" laminated safety glass with all edges polished. Bottom of door to receive extruded aluminum shoe track assembly, lower edge of glass to fit into the top of this track. The bottom of this same track to receive two metal wheel assemblies. Metal wheel assembly to ride on extruded aluminum track with flange which is to be screwed to top of wall cabinet bottom. Top of glass doors to receive snap-on silencing guide which is guided by extruded aluminum upper track that is screwed to the bottom of wall cabinet top.
- H) Locks: Drawer and hinged door locks to be disc tumbler cam locks in satin chrome finish, keyed alike and master keyed; with removable lock core for changing lock arrangements. Drawer cabinets which have locks that are keyed differently are to receive security panels located between drawers. Phenolic framed glass doors and solid phenolic sliding doors to have push type pin tumbler lock in satin chrome finish. Unframed glass doors to have sliding panel lock specifically designed to fit in bottom aluminum shoe track assembly.)
- I) Wardrobe Rod: 1-1/16"chrome plate steel rod supported by flanges.
- J) Cabinet Levelers: 3/8" Stem levelers attached to 4 hole steel mounting brace containing a strengthening rib for added reinforcement. Leveler access holes will be drilled in cabinet bottoms by special request only. When access holes are drilled, white plastic caps will be provided to cover holes.

### 3.00 Construction

#### 3.01 General

- A) All cabinet body components shall be secured utilizing concealed interlocking mechanical fasteners as approved by AWI400B.S.8-A, AWI1600B-S-4.A, sections 14 and 25 of the Woodwork Institute of California Manual of Millwork, and shall be especially designed for use in joining flat panels.
- B) All joints to be tight fitting and shall not rupture or loosen due to:
  - 1) Racking of casework during shipment and installation.
  - 2) Normal use.
  - 3) Seismic shock as tested and approved by the Woodwork Institute of California for casework used in schools and hospitals.
- C) All fastening devices shall be treated to deter or resist corrosion.
- D) All screws to be type 316 stainless steel.

#### 3.02 Construction Features

- A) General Conditions: All Cabinets
  - 1) All end panels, base cabinet bottoms, tall cabinet bottoms and tops, drawer body sides, drawer body fronts, drawer body backs, knee space rails, fillers, exposed finished back panels, toe kicks, drawer fronts, and doors to be 1/2" phenolic resin as described in section 2.01 of this specification.
  - 2) All fixed and adjustable shelves, cabinet rails, wall cabinet tops and bottoms to be 3/4" thick phenolic resin as described in section 2.01 of this specification.

- 3) All removable and fixed backs, drawer body bottoms, and removable knee space panels to be 1/8" phenolic resin as described in section 2.01 of this specification.
  - 4) Unless specified by Owner/Architect, all cabinets in woodgrain phenolic shall have the grain running parallel with the length of the component. Grain direction of drawer fronts shall be horizontal. Grain direction of doors shall be vertical.
- B) Base Cabinets
- 1) Cabinet end panels to be secured to cabinet bottom fixed backs and horizontal rails with a minimum of 14 interlocking mechanical fasteners.
  - 2) Cabinet base to be integral with cabinet end panels as a standard feature unless a separate base unit is specifically called for and indicated on plans. Standard integral base to have toe kick attached to cabinet end panels by means of steel angles and screws. Cabinet to be vermin proof.
  - 3) Cabinet end panels to be secured at top of base cabinet by 2 - 3/4" thick x 3 1/2" wide horizontal rails, 1/2" thick x 7 3/4" upper back. Cabinet end panels to be secured at bottom of base cabinet with a 1/2" thick bottom, 1/2" x 7 3/4" lower back, 1/2" thick integral toe kick panel.
  - 4) Removable cabinet back to be white 1/8" thick phenolic resin. Back to rest in grooves in the 1/2" thick upper and lower fixed backs. 1/8" thick back to be easily removable without the use of any tools.
  - 5) Drawer body sides, subfronts, and backs to be 1/2" thick white phenolic resin. Drawer body bottoms to be 1/8" thick white phenolic resin. Attachment of drawer body sides to drawer body fronts and backs to be a screwed butt joint. Drawer body sides, subfront and back to have 1/8" wide groove to receive and support drawer bottom.
  - 6) Locked drawers within the same cabinet which are keyed differently to have 1/2" thick phenolic resin security panels attached to cabinet end panels with a minimum of 4 concealed interlocking mechanical fasteners.
  - 7) All exposed interior surfaces to be white. All unexposed interior surfaces to be random in color.
  - 8) All cabinets to have independently adjustable 3/8" stem levelers. Levelers to be attached to cabinet end panels by means of a steel 4-hole mounting brace containing a strengthening rib for added reinforcement. Leveler access holes will be drilled in cabinet bottoms. White plastic caps will be provided to cover the holes.
  - 9) Color of exposed end panels to match color selection of drawer fronts, doors, knee space panels, and fillers. Construction fasteners used for attachment of cabinet end panels to horizontal cabinet members to be concealed. Visible construction fasteners or hole covers shall not be acceptable.

- C) Wall Cabinets
    - 1) Cabinet end panels to be secured to cabinet top and bottom with a minimum of 8 interlocking mechanical fasteners.
    - 2) Cabinet end panels to be rabbeted to receive cabinet back.
    - 3) Hanging cleat to be 3/4" thick phenolic attached to cabinet top with screws. Matching hanging cleat to be attached to the wall.
    - 4) All interior components to be white.
    - 5) All exposed end panels to match color of doors and cabinet bottom. Construction fasteners used for attachment of cabinet end panels to vertical cabinet members to be concealed. Visible construction fasteners or hole covers shall not be acceptable.
  - D) Tall Cabinets
    - 1) Cabinet end panels to be secured to cabinet top, fixed shelf, and bottom with a minimum of 12 interlocking mechanical fasteners.
    - 2) Cabinet base to be integral with cabinet end panel as a standard feature unless a separate base unit is specifically called for and indicated on plans. Standard integral base to have toe kick attached to cabinet end panels by means of steel angles and screws. Cabinet to be vermin proof.
    - 3) Cabinet end panels to be rabbeted to receive cabinet back.
    - 4) All interior components to be white.
    - 5) Color of exposed end panels to match doors.
- 4.00 Countertops
- 4.01 Phenolic Resin
- A) 1" thick phenolic resin countertops as shown on drawings and as described in section 2.01 of this specification.
- 4.02 Stainless Steel
- A) Stainless Steel, Type 304, non-magnetic, 18-8, Galvanized, cold rolled steel, 16 gauge throughout. Shall be fabricated in one piece, where practicable, with welded corners, channel exposed edges and reinforced with three (3) full length hat shaped galvanized channels. Sink bowls, where required, shall be fabricated with horizontal and vertical corners covered to a 1" (2.54) radius, corners made spherical without fillers or solder, and welded to top. Back and/or end splashes shall be integral with top and covered at point of turn up to a 3/8" (0.95) radius. Exposed edges of sink tops shall be provided with integral inverted "V" nosing. After fabrication, a moisture proof, sound deadening, mastic shall be applied to the underside of the top and outside of sink bowls. All welding shall be accomplished by heliarc method with all exposed welds ground smooth. All exposed surfaces shall be free of pit marks, weld seams and scale, and polished to a stain finish.
- 5.00 Execution
- 5.01 Shipping
- A) All casework shall be blanket wrapped and delivered to jobsite in furniture vans.
- 5.02 Casework Installation
- A) Casework shall not be delivered to jobsite until building has become adequately dry and secure.

- B) Installation shall be by Casework Manufacturer's authorized representative.
  - C) Casework is to be installed plumb and true, and is to be securely anchored in place. Scribe casework fillers as necessary for a tight fit.
  - D) Wall cabinets shall be securely fastened to horizontal blocking, not to plaster, lath, or wallboard. Reinforcement of stud walls shall be provided by appropriate trade during erection of walls. Casework Manufacturer shall accurately locate blocking requirements on shop drawings.
  - E) Install countertops on base cabinets using screws.
- 5.03 Cleaning and Protection
- A) Empty drawers of dust and dirt. Wipe out cabinet interiors to remove dust and dirt. Remove pencil and other marks from cabinets and countertops. Remove all packaging, scraps, and debris resulting from installation activities.
  - B) Make final adjustment to doors and drawers. Doors shall swing freely, catches shall hold securely, and all doors shall be aligned both vertically and horizontally. Drawers shall open and close smoothly, without binding and without excessive slide play.
  - C) Keys shall be appropriately labeled and turned over to the Owner.

**BMT/NELSON CASEWORK INC. RESERVES THE RIGHT TO CHANGE THIS SPECIFICATION WITHOUT NOTICE OR OBLIGATION TO INCORPORATE IMPROVED MATERIALS, HARDWARE, OR MANUFACTURING TECHNIQUES.**

End of Section 12304