

CASEWORK SPECIFICATION

DOCUMENT NUMBER: 12304

APPLICATION: ELEMENTARY, MIDDLE AND HIGH SCHOOL

01-15-03 - **general revisions**
12-10-96 - general revisions
08-12-94 - revised particleboard requirements
06-16-94 - revised
08-20-90 - original issue

NOTES:

Provide casework as required by the ed spec, in accordance with the attached specification. **The architect is required to review this prototype specification and alter it as necessary for the project by removing items which do not apply and adding or clarifying information as necessary.**

ATTACHMENTS:

Casework specification, dated 01-15-03.

SECTION 12304 - CASEWORK

01-15-03

PART I - GENERAL

1.01 RELATED DOCUMENTS

- A. General Conditions: Division 0 - Bidding and Contract Requirements, including but not limited to The General Conditions, Supplementary General Conditions, Special Conditions and General Requirements apply to all work in this Division. Refer to other Sections, Divisions and Schedules for work in connection with this Section.

1.02 GENERAL:

A. SCOPE OF WORK:

- 1. Provide all plastic laminate casework and accessory items as specified herein. Refer to plans for specific details and requirements.

1.03 RELATED WORK SPECIFIED ELSEWHERE:

- A. General millwork and custom cabinetry unless specified herein or so noted on plans as included within this section.
- B. Rubber, vinyl or other finished toe base.
- C. Locks master keyed to room doors and other special locks.
- D. Blocking within walls.
- E. Sinks, fittings, traps, stops, tail pieces, vacuum breakers and other fixtures, electrical and mechanical runs and connections.
- F. Fixture installation/services, connections: Setting and installation of equipment and fixtures, and related utility connections, are provided under other relevant Sections of the Project Specification governing that utility.

1.04 SUBMITTALS:

- A. Submit in accordance with General, Supplementary and Special Conditions.
- B. Submit Shop Drawings for approval in the form of one reproducible sepia and one print. Submit full size sample complete with hardware, drawers and adjustable shelves. Show materials, dimensions, cabinet cut details, anchoring devices, spacing and sizes, and sink locations. Show relation of material furnished under this section with connection or related work of other suppliers and trades. Confirm all dimensions and installation conditions prior to fabrication.
- C. Samples of colors shall be submitted upon award of contract for selection and coordination with other suppliers. Architect may request and retain samples and catalog cuts as required for accessory and special items.

1.05 QUALIFICATIONS:

- A. Provide casework and countertops furnished by a single manufacturer for single responsibility and integration with other trades.
- B. Casework must conform to design, quality of materials, workmanship and function of casework specified and shown on plans and as specified herein.
- C. Manufacturers shall submit evidence of at least five (5) years experience and installations for similar type of project. Manufacturers shall also show evidence of financial stability, plant facilities, catalogs and specifications. Full-sized samples complete with hardware, doors and adjustable shelves, catalogs and specifications, shall be submitted. Samples may be impounded by Owner and retained until completion of job for verification and compliance with the specifications.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All manufacturers must comply with the following specific minimum requirements:
 - 1. 1" thick shelves must be used on all cabinets 30" wide or greater.
 - 2. Backs of all cabinets shall be minimum 3/8" thick particle board and let-in on at least 3 sides, or 1/4" stapled onset hardboard, or 1/4" plywood or 1/2" thick onset particle board stapled and screw attached.
 - 3. All edges of drawer fronts and doors shall be finished with 3 mm thick color through PVC edging. All edges and corners must be rounded to a 1/8" radius.
 - 4. The cabinet base must be separate from the cabinet body and must be constructed of 4" high pressure treated material.
 - 5. All cabinets must have a minimum 3/8" thick installation rail for mounting to the wall, except where 1/2" thick material is provided.
 - 6. 1" thick Wall and Tall cabinet tops and bottoms must be used on all cabinets over 36" wide unless a built-in center support divider is provided.
 - 7. Laminated plastic edge banding will not be acceptable.
- B. Laminated Plastics/Finishes:
 - 1. High pressure plastic laminate, .028", for exposed cabinet surfaces shall meet NEMA LD3-1991 GP28 standards for vertical grade.
- C. Color Selection Available:
 - 1. Textured finish vertical surface grade from casework manufacturer's standard stock colors consisting of both wood grain patterns and solid colors. Minimum of 35 selections available.

2.01 MATERIALS CONTINUED:

2. Cabinet faces to be one color. End panels may match face or as selected from manufacturer's stock color selection.
 3. Total of five different colors available per project.
 4. Direction of wood grain to be vertical on door, end panels and exposed backs; horizontal on drawer faces, aprons and top rails.
- D. Plastic Laminate Balancing Sheet: Putty, light beige, dove grey or white colored .020" high pressure plastic laminate backing sheet shall be textured surface, and meet NEMA LD3-1991 GL-20 standards, and be of type and thickness to properly balance face-finish. Color subject to Architect's selection.
- E. Counter Top High Pressure Plastic Laminate: High pressure plastic laminate meeting NEMA LD3-1991 GP50 standards, satin or textured finish .050" thickness. Color as selected from manufacturer's stock standard patterns and solid colors.
- F. Polyester or Melamine Laminate: (Materials are used interchangeably within this specification. Either product is acceptable.)
1. Thermal acid resistant polyester resin impregnated laminate, permanently bonded to substrate.
 2. NEMA LD 3.3-1991 GP28, and LD3-1991 CL20 requirements, standards and tests shall apply.
 3. Putty, light beige, dove grey or white colored polyester laminate or pressure fused melamine for semi-exposed cabinet interiors behind doors and drawers, and interiors of all open cabinets. Color subject to standard with manufacturer.
- G. High Performance Particle Board Core:
1. Particle board shall be 45 to 47 lb. density, and balanced construction with moisture content not to exceed 8%. All particle boards shall meet or exceed the requirements for its type and classification under ANSI A208.1-1993 Grade M-3.
 2. In addition to the above, Particle Board shall meet the following minimum Performance Requirements. Submit compliance data from the manufacturer prior to fabrication:

Screw Holding, Face	250 lbs
Modulus of Rupture.....	2,400 psi
Modulus of Elasticity	400,000 psi
Internal Bond.....	80 psi
Surface Hardness	500 lbs
- H. Hardboard: Hardboard shall meet or exceed Commercial Standards CS-251 and Federal Specifications LLL-B-00810. Tempered hardboard 1/4" thick - smooth both sides.

- I. Edge Banding 3mm thick PVC solid, high impact, purified, color-thru, acid resistant, PVC edging machine-applied with hot melt adhesives, automatically trimmed for uniform appearance, buffed and corner-radiused for consistent design. Use for door/drawer edges. Color in white, putty, black, grey, or matching, as selected by Architect.
- J. Hardware: Hinges
1. Shall be heavy duty, five knuckle, 2-3/4", overlay type, hospital tip, .095 inch thick steel. Hinges shall have a minimum of eight (8) edge and leaf fastenings.
 2. One pair per door to 48" height. Two pair over 48" in height.
 3. Finish to be brushed chrome.
- K. Pulls:
1. Shall be Satin chrome 4" wire pull Stanley #4484 or equal.
- L. Sliding Door Hardware:
1. Sliding glass doors, 1/4" thick: K & V #P1092 anodized Ezy Roll Aluminum Track Assembly with steel ball bearing rollers, or equal.
- M. Drawer Slides:
1. Standard Drawers: Shall be equal to Fullerer FR2021, KV-1429, Blum 230E Minimum 100 lb. live-load rating, with in and out stops.
 2. File and Paper Storage/Poster Drawers: Full extension, minimum 100 lb. zinc plated or epoxy coated at manufacturer's option, equal to KV-8400, Blum 430E or Grant 329.
- N. Catches/Stops:
1. Provide 10 lb. magnetic catch for base and wall cabinets. Provide two 10 lb. magnetic catches at doors over fifty (50) inches in height. Catches to be slotted for adjustment and screw attached to bottom of fixed shelf or cabinet top.
 2. At double doors provide spring loaded catches on inactive leaf. Provide metal pull chain to 5' 0" A.F.F.
 3. Provide nylon rope stops where cabinet doors would otherwise hit adjacent surfaces.
- O. Adjustable shelf supports: To be twin-pin anti-tip with locking device to prevent accidental shelf slide-off. Load rating to be minimum of 150 lbs. each support without failure. Cabinet interior sides shall be flush, without shelf system permanent projection. Shelf clip to accommodate 3/4" and 1" shelves.
- P. Wardrobe Rod: To be 1-1/16" chrome steel rod, LH-362, supported by LH-363 chrome flange, or equal.

Q. Coat Hooks:

1. Single coat hooks: Ives 581 Satin Aluminum, or equal.
2. Double coat hooks: Ives 582 Satin Aluminum, or equal.

R. Molded Trays:

1. High impact polyethylene with card holders, Putty finish.
2. Sizes: 10-1/2" W x 3-1/2" H x 19" D
14-1/2" W x 3-1/2" H x 19" D
3. Trays shall glide on structural polyethylene continuous side rails, adjustable
1" on center. Putty finish.

S. Molded Personal Pencil Drawer: Chemical resistant, high density polyethylene with in-stop and out-stop features. Compartmented drawer body and slides in white, putty or stonegrey.

T. Locks: To be 5 disc tumbler locks keyed alike within each room and master keyed. Dull chrome finish.

1. Hinged doors and drawers National Lock No. M4-7054C/L, or equal.
2. Sliding doors, 13/16" thick, National Lock No. M4-0057-001, or equal.
3. 1/4" sliding glass door. Lock to be National Lock # 8140, or K & V #965 NP, or equal.

U. Detailed Requirements for Cabinet Construction:

1. Sub-Base:

- a. Cabinet Sub-base: To be separate and continuous (no cabinet body sides-to-floor), pressure treated 2 x 4 or pressure treated plywood with concealed fastening to cabinet bottom. Ladder-type construction, of front, back and intermediates, to form a secure and level platform to which cabinets attach. Inset 1/4 inch at cabinet finished ends for a recessed vinyl base condition.

2. Cabinet Top and Bottom - Wall and Base:

- a. Base cabinet bottoms to be putty, light beige, dove grey, or white colored polyester laminated particle board interior side, 3/4" thick with phenolic neutral colored backer sheet on a concealed side.
- b. At sink locations, base cabinet box to be exterior grade plywood, sides, front, rear and bottom with finish materials as specified.
- c. Solid sub-top to be 3/4" and furnished for all base cabinets.
- d. Wall cabinet and library stack bottoms and tops shall be 3/4" thick where less than 36" wide and 1" thick where greater than 36" wide.

- e. Exterior underside of exposed wall cabinet bottoms to be polyester laminate. Assembly devices to be concealed on bottom side of wall cabinets.
 - f. Exposed body edges including the top of Wall and Tall cabinets shall be 1mm FlatEdge in color to match 3mm edging.
3. Cabinet Tops - Wall and Tall Cabinets:
- a. Tops of Wall and Tall cabinets to be edge banded with 1mm Flatedge PVC. Tops to be covered with polyester laminate.
4. Cabinet Ends:
- a. Putty, light beige, dove grey, or white colored polyester laminated particle board interior side, 3/4" thick with phenolic neutral colored back sheet on concealed side. Holes drilled for adjustable shelves 1-1/4" on center.
 - b. To properly anchor hinges, provide full-height solid wood, covered with plastic laminate, at all tall cabinets scheduled to receive doors.
 - c. Exposed exterior cabinet ends to be laminated with plastic laminate.
 - d. Exposed edges to be 1mm Flatedge in color to match 3mm edging.
5. Fixed and Adjustable Shelves:
- a. Putty, light beige, dove grey, or white colored polyester laminated particle board two sides. Leading exposed edge of shelves to be edged with 1mm FlatEdge PVC, putty, black or grey in color.
 - b. Thickness: standard shelving to be 3/4" thick. Provide 1" thick shelving where 30" wide and over. Provide 1" thick shelving at all open cabinets regardless of width.
 - c. Instrument storage shelves to be 3/4" thick consisting of 1/8" tempered hardboard laminated to top and bottom of 1/2" particle board core. Front leading edge rabbeted to receive 3/4" x 3/4" extruded metal edge.
 - d. Library stack shelving to be 1" thick.
6. Cabinet Backs:
- a. Standard cabinet back to be 3/8" thick let in on at least 3 sides, prefinished putty, light beige, dove grey or white for use on all cabinets with or without doors. Rear, unexposed, side of back to receive continuous hot melt glue at joint between back and sides/top/bottom/ for sealing against moisture and vermin, and further contribute to case rigidity, or 1/4" stapled onset hardboard, or 1/2" stapled and screwed onset particle board.

- b. Exposed exterior backs to be 3/4" particle board faced with high pressure plastic laminate and balanced with .020" high pressure cabinet liner.

7. Doors and Drawer Fronts:

- a. Plastic laminated doors and drawer fronts to be 13/16" thick for all hinged and sliding doors. Core materials to be 3/4" thick (1" thick at doors over 48" high) minimum, 45 lb. density particle board bonded on exterior with high pressure laminate and with putty, light beige, dove grey or white .020" high pressure cabinet liner balancing sheet on interior face. Drawer fronts and hinged doors are to overlay the cabinet body. Maintain a maximum 1/8" reveal between pairs of doors, between door and drawer front, or between multiple drawer fronts within the cabinet.
- b. Exposed edges to be 3mm thick PVC, color as selected by Architect. Corners and both edges to be machine-radiused and buffed to a consistent 3mm radius.
- c. Stile and Rail doors to be 13/16" thick plastic laminate door with 1/4" plate glass. Available hinged or sliding. All exposed lite-opening edges to be trimmed and glazed with extruded vinyl glazing bead.
- d. Sliding glass doors to be 1/4" thick tempered plate glass with ground and polished edges. Fitted with etched and anodized aluminum shoes and nylon rollers.
- e. Provide door stops/holders where necessary to prevent door from opening into adjacent cabinets, mirrors, etc.

8. Drawers:

- a. Drawer fronts shall be applied to separate drawer body component sub-front.
- b. Sides and back of drawers to be 1/2" thick putty, light beige, dove grey or white colored fiberboard conforming to ANSI A 208.2; sub-front same, to be 5/8" thick.
- c. Fiberboard to be of uniform density and meet the following minimum standards:
 - Screw Holding, Face 320 lbs.
 - Screw Holding, Edge..... 230 lbs.
 - Modulus of Rupture..... 4,500 psi
 - Modulus of Elasticity 500,000 psi
 - Internal Bond..... 100 psi
- d. Exposed top edge to be 1mm FlatEdge PVC, White or Putty in color.

- e. Drawer sides shall be dadoed or rabbeted to receive front and back, glued, machine squared and held under pressure while pinned together.
 - f. Drawer bottom to be polyester laminate, 1/4" thick tempered hardboard, housed and glued into front, sides and back with underside of drawer to receive continuous hot melt glue at joint between bottom and back/sides/front for sealing and rigidity, or 1/2" thick prefinished particle board with color to be putty, light beige, dove grey, or white screwed directly to the bottom edges of the drawer box. Reinforce drawer bottoms as required with intermediate spreaders, 1 at 24", 2 at 36" and 4 at 48" width.
 - g. Paper storage drawers fitted with full width hood at back.
 - h. All drawers shall have roller guides as specified.
9. Vertical and Horizontal Dividers:
- a. Tempered hardboard 1/4" thick, smooth both faces. Secured in cabinet with molded plastic clips.
 - b. Putty, light beige, dove grey or white colored polyester laminated particle board 3/4" thickness. Secured in cabinet with molded plastic clips or dowels. Front edge to be 1mm FlatEdge PVC.
10. Door/Drawer Spreaders:
- a. Provide 1" x 2" minimum x full width putty, light beige, dove grey or white finished cabinet body spreaders immediately behind all door/drawer and multiple drawer horizontal joints to maintain exact body dimensions, and close off reveal. Front edge to be matching laminate or 1mm FlatEdge PVC, as per Architect's selection.
11. Countertops:
- a. High pressure plastic laminate bonded to particle board core. Thickness as shown on plans and specifications. Underside to be properly balanced with heavy gauge backing sheet. Edges to be high pressure plastic laminate to match horizontal surface color. Furnish countertops in design as shown on drawings. Provide continuous tops for counter type cabinets fixed in a line.
 - b. At all sink locations, provide high pressure plastic laminate bonded to exterior grade plywood. Thickness as shown on plans and specifications.

12. Workmanship:
- a. All exposed exterior cabinet surfaces to be GP28 decorative high pressure plastic laminate, color as selected from casework manufacturer's standards, minimum 35 colors/wood grains available. Laminate surface/backer to core under controlled conditions, by approved and regulated laminating methods to assure a premium lamination.
 - b. Cabinet parts, shall be accurately machined and bored for premium quality grade joinery construction utilizing automatic machinery to insure consistent sizing of modular components.
 - c. Sides, top and bottom may be fastened securely with dowel construction or "Mod-Eez" joint structural fastening system. "Mod-Eez" clips shall be placed in strategic points throughout the cabinet insuring absolute rigid cabinet joinery. Top of base cabinet and between top drawers shall consist of wood frame fastened to the body with "Mod-Eez" system clips. When using "Mod-Eez" method, seal interior perimeter with clear silicone sealant after cabinet placement.
 - d. End panels shall be doweled to receive bottom and top. Back panel shall be fully secured into cabinet sides, top and bottom to insure rigidity and fully closed cabinet.
 - e. Drawer bottom shall be fully housed into sides, back and subfront. Sides of drawer shall be fully dadoed or rabbeted to receive drawer back, locked in fully to subfront, fastened with glue and mechanical fasteners, or as specified herein.
 - f. 3/8" thick minimum hang rails shall be applied to back of all wall, base and tall cabinets for extra rigidity and to facilitate installation and contribute to cabinet structure.
 - g. Rear of cabinet back and underside of drawer bottom joints to receive a continuous bead of hot melt adhesive to add to unit body strength and develop moisture seal, where specified herein.
 - h. All cases shall be square, plumb and true.
 - i. Provide removable back panels and closure panels for plumbing access where shown on Architectural and/or Plumbing Drawings.
 - j. Provide filler panels at sides and tops. Scribe fillers to wall and secure to adjacent cabinet. Seal casework fillers to adjacent wall.

PART 3 - EXECUTION

3.01 COORDINATION:

- A. Coordinate work of this Section with related work of other Sections as necessary to obtain proper installation of all items.

- B. Verify site dimensions of cabinet locations in building prior to fabrication.

3.02 INSTALLATION:

- A. Storage and Protection: Casework shall be protected in transit. Store under cover in a ventilated building not exposed to extreme temperature and humidity changes. Do not store or install casework in building until concrete, masonry, and plaster work is dry. Do not install casework over carpet.
- B. Workmen: Install casework under the supervision of the manufacturer's representative with factory-trained mechanics authorized by manufacturer.
- C. Workmanship:
 - 1. Erect casework straight, level and plumb and securely anchor in place. Scribe and closely fit to adjacent work. Cut and fit work around pipes, ducts, etc.
 - 2. Install all items complete and adjust all moving parts to operate properly.
 - 3. Leave surface clean and free from defects at time of final acceptance.
 - 4. Wall cabinets shall be supported by sufficient and adequate fasteners. Adequate blocking shall be attached to the studing system or masonry wall before the wall is finished. Cabinets shall be attached to the wall using a minimum of one fastener at top and bottom for each 12 inches of length (i.e., minimum 4 fasteners per 12" width, 2 top and 2 bottom.) The use of plastic anchors is strictly prohibited. Attach to wall using tapcons or lead shields and screws.
- D. Guarantee: All materials shall be guaranteed for a period of five years from manufacturer's defects and workmanship.
- E. Clean-Up: Remove all cartons, debris, sawdust, scraps, etc., and leave spaces clean and all casework clean inside and out and ready for Owner's use.

END OF SECTION