

Metal Casework Specifications

PART 1 - GENERAL

Summary: The following specification is written to provide the level of design expectation of the owner and architect in regards to the quality/functionality of the product and installation for the fume hoods.

1.1 SECTION INCLUDES

- A. Metal casework.

1.2 RELATED SECTIONS

- A. Division 11 Section, "Fume Hoods"
- B. Division 12 Section, "Countertops"
- C. Division 12 Section, "Plumbing Fixtures"
- D. Related Work to be Performed by Others:
 - a. Furnishing and installation of plumbing utilities and final connections.
 - b. Furnishing and installation of electrical utilities and final connections.

1.3 CASEWORK GENERAL DESIGN REQUIREMENTS

- A. Flush construction: Surfaces of doors, drawers and panel faces shall align with cabinet fronts without overlap of case ends, top or bottom rails. Horizontal and vertical case shell members (panels, top rails and bottoms) shall meet in the same plane without overlap, cracks or crevices.
- B. Frame styling: Front width of end panels and front height of top and bottom members 1 1/4".
- C. Self-supporting units: Completely welded shell assembly so that cases can be used interchangeably or as a single, standalone unit.
- D. Interior of case units: Easily cleanable with removable bottoms panned up. Base cabinets, 30" and wider, with double swinging doors shall provide full access to complete interior without center vertical post.
- E. Drawers: Sized on a modular basis for interchange to meet varying storage needs, and designed to be easily removable in field without the use of special tools.
- F. Case openings: Rabbeted joints sides and bottom of case opening for hinged doors and two sides for sliding doors in order to provide dust resistant case.
- G. Framed glazed doors: Identical in construction, hardware and installation to solid panel doors. Design frame glazed doors to be removable for glass replacement.

1.4 SUBMITTALS

- A. Shop Drawings: Indicate equipment locations, large scale plans, elevations, cross sections, rough in and anchor placement dimensions and tolerances and all required clearances.
- B. Product Data: Submit manufacturer's data for each component and item of equipment specified. Include component dimensions, configurations, construction details, joint details, and attachments, utility and service requirements and locations.
- C. Samples: Submit 3 x 6 inch samples of finish for casework, work surfaces and for other pre-finished equipment and accessories as required.



1.5 QUALITY ASSURANCE

- A. Single source responsibility: Casework, work surfaces, laboratory fume hood and equipment and accessories shall be manufactured or furnished by a single laboratory furniture company.
- B. Manufacturer's qualifications: Modern plant with proper tools, dies, fixtures and skilled employees to produce high quality laboratory casework and equipment, and shall meet the following minimum requirements:
 - a. Ten years or more experience in manufacture of fume hoods and equipment of type specified.
 - b. Ten installations of equal or larger size and requirements.
- C. Installer's qualifications: Factory trained and/or certified by the manufacturer.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Schedule delivery of casework and equipment so that spaces are sufficiently complete and material can be installed immediately following delivery.
- B. Protect finished surfaces from soiling or damage during handling and installation. Keep covered with polyethylene film or other protective coating.
- C. Protect all work surfaces throughout construction period with 1/4" corrugated cardboard completely covering the top and securely taped to edges. Mark cardboard in large lettering "No Standing."
- D. Waste Management and Disposal: The supplier of the casework is responsible for removing any waste or refuse resulting from the installation of, or work pertaining to the fume hoods; thereby leaving the project site clean and free of debris. Trash container/s to be provided by others.

1.7 PROJECT SITE CONDITIONS

- A. Building must be enclosed (windows and doors sealed and weather-tight).
- B. An operational HVAC system that maintains temperature and humidity at occupancy levels must
- C. be in place.
- D. Ceiling, overhead ductwork and lighting must be installed; prior to the delivery and installation of the fume hoods.
- E. Site must be free of any further construction such as "wet work."
- F. All painting is completed and floor tile located below fume hoods is installed.

1.8 WARRANTY

- A. Furnish a written warranty that Work performed under this Section shall remain free from defects as to materials and workmanship for a period of one (1) year from date of acceptance. Defects in materials and workmanship that may develop within this time are to be replaced without cost or expense to the Owner.
- B. The warranty specifically does not cover any product or hardware, which has been incorrectly installed, including poor climate conditions, exposed to excessive loads or abuse.
- C. The warranty is in effect while the product is being used as it was intended and owned by the original purchaser of the products and services covered.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: CiF Lab Solutions 53 Courtland Avenue, Vaughan, ON, Canada L4K3T2
- B. Substitution Limitations:
 - a. Substitutions will be considered only when other manufacturers submit substitution requests in accordance with procurement substitution and/or substitution procedures, or provide a comparable product with the following support information detailed below:
 - b. Written documentation stating specification compliance regarding construction, materials, and standard of quality and manufacturing techniques.
 - c. Note all deviations to the drawings and/or specifications in writing.
 - d. The owner, or its designated representative, reserves the right to reject any proposal that in their opinion fails to meet the criteria established by this specification. Such a decision shall be final.
- C. Approved
 - i. Hamilton
 - ii. Kewaunee

NOTE: Manufacturer's that are listed as basis of design or approved are still obligated to hold ALL specification requirements as called out in this document. There will be NO EXCEPTIONS in materials or fabrication permitted that have not been requested in writing and responded to with approval, during an RFI period prior to bid.

2.2 MATERIALS

- A. Steel: High quality, cold rolled mild steel meeting requirements of ASTM A366; gauges U.S. Standard.
- B. Minimum gauges:
 - a. 20 gauge: Solid door interior panels, door exterior panels, drawer fronts, back panels, drawer bodies, security panels and sloping tops.
 - b. 18 gauge: Ends, bottoms, bases, vertical posts, shelves, access panels, table legs and frames, leg rails and stretchers.
 - c. 16 gauge: Top front rails, top rear gussets, intermediate horizontal rails.
 - d. 14 gauge: Door and case hinge reinforcements and front corner reinforcements.
 - e. 11 gauge: Table leg corner brackets and gussets for leveling screws.
- C. Glass for glazed swinging and sliding doors and/or unframed doors:
 - a. 6mm Clear Float Glass.

2.3 FABRICATION

- A. Base Units and Cases:
 - a. Base units: End panels and back reinforced with internal reinforcing front and rear posts.
 - b. 24", 31" and 36" high wall cases and 84" high cases: Formed end panels with front and rear reinforcing post channels; back shall be formed steel panel, recessed 3/4" for mounting purposes.



- c. Posts: Front post fully formed. Shelf adjustment holes in front and rear posts shall be perfectly aligned for level setting.
 - d. Secure intersection of case members with spot and mig welds.
 - e. Base unit backs: Provide drawer units without backs and cupboard units with removable backs for access to services behind units.
 - f. Bottoms: Base units shall have one piece removable bottom with front edge formed into front rail, rabbeted for swinging doors and drawers.
 - g. Base for base units: 4" high x 3" deep with formed steel base and 11 gauge die formed steel gussets at corners. Provide 3/8" diameter leveling screw with integral bottom flange of minimum 0.56 sq. in. area at each corner, accessible through removable bottom.
- B. Drawers:
- a. Drawer fronts: 3/4" thick, double wall construction, pre-painted prior to assembly and sound deadened.
 - b. Drawer bodies: Bottom and all sides formed into one piece with bottom and sides coved and formed top edges.
 - c. Drawer suspension: 100 lb. full extension drawer slides for full access and operation.
- C. Doors:
- a. Solid panel doors: 3/4" thick, double wall, telescoping box steel construction with interior pre-painted and sound deadened.
 - b. Frame glazed doors: Outer head to be one piece construction. Inner head to consist of top, bottom and side framing members which are removable for installation or replacement of glass. Provide continuous vinyl glazing retainer to receive glass. In all other respects, framed glazed door construction and quality shall match solid panel doors.
 - c. Sliding doors – solid or framed glazed: Design for tilt-out removal.
 - d. Unframed sliding glass doors: Glass with edges ground set in extruded aluminum shoe with integral pulls, wheel assemblies and top and bottom extruded aluminum track. Provide rubber bumpers at fully opened and closed door position.
- D. Shelves:
- a. Form front and back edges down and back 3/4". Form ends down 3/4".
 - b. Reinforce shelves over 36" long with welded hat channel reinforcement the full width of shelf.
 - c. Pull out shelves: Same suspension as specified for drawers.
- E. Hardware:
- a. Flush drawer and door pulls: Clear anodized extruded aluminum.
 - b. Hinges: Institutional type, five knuckle projecting barrel hinges, minimum 2 1/2" long, type 302 or 304 stainless steel. Provide two hinges for doors up to 36" high; three hinges for doors over 36" high. Drill each leaf for three screw attachment to door and frame.
 - c. Door catches: Adjustable type, spring actuated nylon roller catches.
 - d. Shelf clips: Die formed steel, zinc plated, designed to engage in shelf adjustment holes.

2.4 TABLE FRAMES

- A. Table frames: 4" high "C" channel front and back aprons, end rails and cross rails.
- B. Table drawers: Provide front and back rails; drawer unit, hardware and suspension same as specified for base unit drawers.
- C. Legs: 2" x 2" steel tube legs with welded leg bracket. Attach legs with bolts to front and back of apron. Each leg shall have a recessed leveling screw and a black, coved vinyl or rubber leg shoe, 2" in height.



- D. Leg rails and stretchers: Channel formed.

2.5 METAL FINISH

- A. Preparation: Spray clean metal with a heated cleaner/phosphate solution, pretreat with iron phosphate spray, water rinse, and neutral final seal. Immediately dry in heated ovens, gradually cooled, prior to application of finish.
- B. Application: Electrostatically apply powder coat of selected color and bake in controlled high temperature oven to assure a smooth, hard satin finish. Surfaces shall have a chemical resistant, high grade furniture quality finish of the following thicknesses:
 - a. Exterior and interior surfaces exposed to view: 1.5 mil average and 1.2 mil minimum.
 - b. Surfaces not exposed to view: 1.0 mil average.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Casework installation:
 - a. Set casework components plumb, square, and straight with no distortion and securely anchored to building structure. Shim as required using concealed shims.
 - b. Bolt continuous cabinets together with joints flush, tight and uniform, and with alignment of adjacent units within 1/16" tolerance.
 - c. Secure wall cabinets to solid supporting material, not to plaster, lath or gypsum board.
 - d. Abut top edge surfaces in one true plane. Provide flush joints not to exceed 1/8" between top units.

3.2 ADJUSTING

- A. Repair or remove and replace defective work, as directed upon completion of installation.
- B. Adjust doors, drawers, hardware, fixtures and other moving or operating parts to function smoothly.

3.3 CLEANING

- A. Clean finished casework, touch up as required.

3.4 PROTECTION OF FINISHED WORK

- A. Provide all necessary protective measures to prevent exposure of equipment from exposure to other construction activity.
- B. Advise contractor of procedures and precautions for protection of material, installed laboratory casework and fixtures from damage by work of other trades.

END OF SECTION