

SECTION 12351

METAL LABORATORY/SHOP CASEWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Metal cabinets and cabinet hardware.
- B. Countertops.

1.02 RELATED REQUIREMENTS

- A. Section 06100 - Wood blocking.
- B. Section 07900 - Joint Sealers.

1.03 REFERENCE STANDARDS

- A. SEFA 2.3 - Installation of Scientific Laboratory Furniture and Equipment; 2006.
- B. SEFA 3 - Work Surfaces; 2006.
- C. SEFA 7 - Laboratory and Hospital Fixtures; 2006.
- D. SEFA 8 - Laboratory Casework; 2006.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Large Components: Ensure that large components can be moved into final position without damage to other construction.

1.05 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Details of materials, component dimensions and configurations, construction details, joint details, attachments; manufacturer's catalog literature on hardware, accessories, and service fittings, if any.
- C. Shop Drawings: Casework locations, large scale plans, elevations, cross sections, rough-in and anchor placement dimensions and tolerances, clearances required, and utility locations, if any.
- D. Samples For Color Selection: Color charts for each different finish material.
- E. Test Reports: Independent laboratory reports showing compliance with chemical resistance requirements for cabinet finish.
- F. Certificate showing that casework meets the performance requirements of SEFA 8.
- G. Sample of all locks, door pulls, hinges, and interior hardware.
- H. Manufacturer's Installation Instructions.
- I. Maintenance Data: Manufacturer's recommendations for care and cleaning.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum fifteen years of documented experience.
- B. Mock-Up: Submit full size 18" wide base cabinet complete with drawers, door, adjustable shelf and counter top.
 - 1. Mock up may not remain as part of the work.
- C. Casework shall meet the performance requirements described in SEFA 8.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Design is based on the use of products manufactured by Kewaunee Scientific Corporation, Statesville, NC; 877-539-2863.
 - 1. Product: Research Collection Laboratory Furniture.
- B. Materials shall be the product of one manufacturer and shall be either the ones upon which the design is based or the products of a manufacturer approved prior to bid in accordance with Section 01600.

2.02 MATERIALS

- A. Galvanized Steel: Galvanized steel shall be 12, 14, 16, 18 and 20 gauge, hot-dipped, extra smooth, G90 coating, and shall be free of scale, ragged edges, deep scratches or other injurious effects.

2.03 METAL LABORATORY/SHOP CASEWORK

- A. Casework: Die-formed metal sheet; each unit self-contained and not dependent on adjacent units or building structure for rigidity; factory-fabricated, -assembled, and -finished.
 - 1. Style: Flush overlay.
 - 2. Steel Gauges:
 - a. Cases: 18 gauge.
 - b. Corner Gussets: 12 gauge.
 - c. Case and drawer suspension channels: 14 gauge.
 - d. Top and intermediate front horizontal rails, table aprons, hinge reinforcements, and reinforcement gusset: 16 gauge.
 - e. Drawer assemblies, door assemblies, bottom, bottom back rail, toe space rail, and adjustable shelves: 20 gauge.
 - 3. Structural Performance: In addition to the requirements of SEFA 3, 7 and 8, provide components that safely support the following minimum loads, without deformation or damage:
 - a. Base Cabinets: 200 pounds per square foot of cabinet top area.
 - b. Base Units Corner Gussets: 500 pounds per linear foot (744 kg per m) across the cabinet ends.
 - c. Suspended Units: Minimum 300 pounds (136 kg) static load.
 - d. Tables: 300 pounds (136 kg) on four legs.
 - e. Drawers: 150 pounds evenly distributed load.
 - f. Shelves: 40 pounds per square foot up to a maximum of 200 pounds with nominal temporary deflection, but without permanent set.
 - 4. Corners and Joints: Without gaps or inaccessible spaces or areas where dirt or moisture could accumulate.
 - 5. Edges and Seams: Smooth. Form counter tops, facing, and shelves from continuous sheets.
 - 6. Ends: Close open ends with matching construction.
 - 7. Welding: Electric spot weld; grind joints smooth and flush.
 - 8. Drawers and Doors: The outer drawer and door head shall have a channel formation on all four sides to eliminate sharp raw edges of steel and the top front corners shall be welded and ground smooth. Drawer and door, when closed, shall rest against the face of cabinet shell, creating a 3/4" overlay front with 1/8" reveal.
 - a. Product: Trademark Overlay - Style 11.
 - 9. Access Panels: Provide access panels for maintenance of utility service fixtures and fittings and mechanical and electrical components.
 - 10. Filler Panels: Where cabinets do not fit tight to adjacent construction, provide filler panels of matching construction and finish.
 - 11. Finish on Steel (Except Stainless Steel): Provide a finish on all surfaces having chemical

resistance equal to Level 0 (no change) or Level 1 (slight change of gloss or slight discoloration) according to SEFA 8.1.

- a. Coating Type: Electrostatically applied enamel; minimum two coats.
 - b. Color: As selected from manufacturer's standard selection.
 - c. Preparation: Degrease and phosphate etch, and prime.
12. Stainless Steel Finish: No. 4, brushed finish.
 13. Separation: Use bituminous paint or non-conductive tape to coat metal surfaces in contact with cementitious materials and to separate dissimilar metals.
- B. Hardwood Countertops: Wood tops shall be 1" thick and shall be built up of maple strips, finger joint construction, in a natural finish, using urea resin glue and electronically cured. All tops shall have a 1/4" wide by 1/8" deep drip groove on underside and all exposed top edges and corners shall be radiused 1/4". One coat of sealer shall be applied to all surfaces.

2.04 FABRICATION AND HARDWARE

- A. Cabinet Hardware: Manufacturer's standard styles, exposed components stainless steel or dull nickel plated finish.
1. Finish of Exposed Components: No. 4 finish.
 2. Locks: Lock with 4 pin cylinder and 2 keys per lock. Locks shall have heavy duty interchangeable cylinder and shall have the capacity to be Masterkeyed and Grand-masterkeyed
- B. Shelves:
1. Shelves shall be formed down 3/4", returned back 7/8" and up 1/4" into a channel formation front and rear; formed down 3/4" at each end, shelves over 42" long shall be further reinforced with a channel formation welder to underside of shelf.
 2. Shelf Standards and Rests: Vertical chrome steel standards with rubber button fitted steel rests.
 3. Shelf Brackets: Vertical chrome steel standards with chrome steel arms.
- C. Swinging Doors:
1. Steel door assembly (two-piece) for solid pan swinging doors shall consist of an inner and outer door pan. Outer door pan shall be formed at all four sides. The corners on the pull side of the outer door pan shall be welded and ground smooth to prevent exposure of sharp edges of steel at these critical points. Inner door pan shall be flanged at all four sides with hinge reinforcements welded in place. The door assembly shall be 3/4" thick and contain sound deadening material.
 2. Hinges: Overlay Hinges shall be made of Type 304 stainless steel .089 thick, 2-1/2" high, with a five-knuckle bullet-type barrel. Hinges shall be rated for 150 lb. load. Hinges shall be attached to both door and case with screws through each leaf, welding will not be accepted.
 3. Catches: Magnetic.
 4. Pulls: Stainless Steel wire U-pulls, 4 inches (102 mm) wide, meeting CBC Section 1125B.4. Secure to drawers and doors with screws.
- D. Drawers:
1. Drawer bodies shall be made in one-piece construction including the bottom, two sides, back and front. They shall be fully coved at interior bottom on all four sides for easy cleaning. The top front of the inner drawer body shall be offset to interlock with the channel formation in drawer head providing a 3/4" thick drawer head.
 2. Pulls: Stainless Steel wire U-pulls, 4 inches (102 mm) wide, meeting CBC Section 1125B.4. Secure to drawers and doors with screws.
 3. Slides: Steel, full extension arms, ball bearings; capacity as recommended by manufacturer for drawer height and width.

2.05 ACCESSORIES

- A. Sound Deadening Material: Inorganic, for sandwich panel fabrication.
- B. Sealant: Sanitary type, specified in Section 07900.
- C. Base: Aluminum Diamond Plate Base in accordance with Section 09651.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify capacity of support framing and anchors.

3.02 INSTALLATION

- A. Perform installation in accordance with manufacturer's instructions and with SEFA 2.3.
- B. Use anchoring devices to suit conditions and substrate materials encountered.
- C. Set casework items plumb and square, securely anchored to building structure.
- D. Align cabinets to adjoining components, install filler panels where necessary to close gaps; seal joints between cabinets and countertops and adjacent construction.
- E. Separate dissimilar metals to prevent galvanic action.
- F. Replace units that are damaged, including those that have damaged finishes.

3.03 ADJUSTING

- A. Adjust operating parts, including doors, drawers, hardware, and fixtures, to function smoothly.

3.04 CLEANING

- A. Clean all components.

3.05 PROTECTION

- A. Do not permit finished casework to be exposed to continued construction activity.
- B. Repair damage that occurs prior to Substantial Completion, including finishes, using methods prescribed by manufacturer; replace units that cannot be repaired to like-new condition.

END OF SECTION