

National Laboratory Specialists

Metal Cabinet Specification

Section 12345

Part 1 – General

1.01 SCOPE:

- A. The casework contractor shall furnish all material, equipment, tools, labor and insurance required to perform a complete installation in accordance with this specification and applicable drawings.

1.02 WORK INCLUDED:

- A. Furnish all laboratory casework and equipment, deliver to the job-site, assemble, level, scribe and secure to floors or walls as required.
- B. Furnish and deliver to the mechanical and electrical contractors all sinks, troughs, outlets, overflows, traps, fixtures, switches and receptacles as specified and called for on the drawings.

1.03 WORK BY OTHERS:

- A. Furnish, deliver and install all electrical work, conduit, wiring, mechanical service piping, shut off valves, drain lines, vents, revents, special piping to meet local codes, vacuum breakers, ductwork and fume hood blowers.
- B. Receive, store, distribute, install and connect all electrical service fixtures, plumbing service fixtures, drain fittings, traps, cupsinks and sinks supplied by the casework contractor. All framing, bucks, plaster grounds and reinforcement of walls, floors, and ceilings to support the casework.

1.04 MANUFACTURERS:

- A. All laboratory casework covered by this specification shall be the product of one manufacturer. Manufacturers furnishing equipment shall have been engaged in work of this type, for at least five years and shall have completed five installations of equivalent size.
- B. Approved laboratory casework manufacturers are:

National Laboratory Specialists (888)-457-5554
Hamilton Products
Kewaunee Scientific

1.05 SAMPLES:

- A. All bidders, upon request shall be required to submit a sample cabinet made in accordance with this specification. Samples shall be delivered, at no cost to the architect or owner, to a destination set forth by the architect, seven days prior to bid date as a condition of approval of each bidder.

Samples shall be full size, production type samples with the approximately dimension of 24w x 30h x 22”d, with one drawer and one door.

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Samples may be held by the owner or architect to insure that all equipment delivered conforms in every respect to the sample.

1.06 DRAWINGS:

- A. The casework contractor shall furnish three sets of drawings for approval., describing and/or illustrating all equipment covered by this contract. Fabrication must not be started until prints with the architects “Final Approval” stamp affixed thereon, have been returned to the manufacturer.

1.07 GUARANTEE:

- A. The casework contractor shall guarantee all materials and workmanship of equipment provided under this contract for a period of one year from date of shipment. Any defects due to the use of improper materials or workmanship, occurring within that time shall be promptly rectified by this contractor at his own expense upon notification by the owner or architect of this condition.

Part 2 – Metal Casework Construction

2.01 MATERIALS:

- A. All materials shall be of the highest quality, whether they be finished parts used in assembly, raw material, or materials and workmanship furnished by others, as part of the completed project.

- B. All steel used in the manufacture of metal casework shall be cold rolled, prime grade or better. Steel shall be inspected prior to fabrication and certified to be free of rust, pits, scratches, or any other defect(s) which prevent parts from being made to blueprint specifications.

2.02 GAUGES:

Gauge specifications for individual steel parts shall be as follows:

- A. Aprons 18-Gauge
- Back Panels 20-Gauge
- Bottom Panels 18-Gauge
- Door & Drawer Outer Pan 20-Gauge
- Door & Drawer Inner Pan 20-Gauge
- Drawer Bodies 20-Gauge
- Legs, 2” square tubing 18-Gauge
- Shelves 18-Gauge
- Side Panels 18-Gauge
- Table Frames 18-Gauge
- Shelf Support Brackets 14-Gauge

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2.03 CONSTRUCTION:

A. Cabinets:

Cabinets shall be constructed of prime 18-gauge steel for the sides, backs and toe space. 1" x 18 gauge steel tubing shall be used for the top front and back rails. Each front joint is to be welded and ground flush to provide a smooth surface. A 4' high x 3' deep toe space shall be standard. Four corners are to be fitted with a stamped and welded 14 gauge leveling gusset plate, and a plated leveling screw. Leveling screws are provided with a slot for easy adjustment, and non-marking nylon glides.

Removable back panels shall be furnished on all cabinets. Cabinet bottom will be panned up to contain spills and removable for easy cleaning maintenance.

B. Doors – Base Cabinet Doors:

Doors shall be double pan construction, with insulating material fastened to the inside for sound deadening, and strength, to prevent panning and bending. Hinges are five knuckle gauge stainless steel, fastened to both the door and cabinet frame with zinc plated steel screws. Door catches plated, friction roller type. Door closes onto nylon bumpers for noise dampening, and over nylon spacers for alignment.

C. Drawers:

Drawer bodies shall be one-piece 20-gauge construction fully covered on all four sides horizontally and formed out of one sheet of steel.

D. Drawer Suspension:

Drawers shall operate on full extension, ball bearing, zinc plated, drawer suspension rated to withstand 10,000 cycles at 100 lbs.

E. Shelves:

Shelves shall be constructed of 18-gauge steel, with channels formed on both the front and back edges. K & V shelf clips are made from 14 gauge steel, and are to be adjustable vertically in 1" increments. Sliding shelves shall use the same ball bearing slides as drawer units.

F. Fabricated Accessories:

All accessories required for specific installations shall be fabricated and finished to the same material and quality standards as the base units they will be made to compliment.

G. Wall Cabinets

Wall cabinets shall be made to the same quality standards as base units. Material used, as noted above. Shelf hangers are to be constructed of 14 gauge steel, and to easily adjust vertically in one inch increments.

Shelves are to be constructed with channel type fronts and backs, as well as flanged ends with nylon glides. Wall units to have open fronts, sliding glass, framed glass

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sliding and swinging, or sliding and swinging steel doors as specified. Glass is plate, ground on all exposed edges.

Sliding door units to be furnished with extruded top and bottom channels as well as ball bearing rollers. All wall units are to be furnished with hanger brackets for ease of installation.

H. Floor Units

Floor units shall be made to the same quality standards as base units. Material used, as noted above.

Shelves and shelf hanger construction, same as wall units.

Floor units to be furnished with the same front and door configurations as the above described wall units.

2.04 FINISH:

- A. All surfaces shall be painted or plated, whether they are exposed or not. Paint is to be a chemically resistant baked on epoxy powder coat enamel, conforming to Metal-Arc standards.

GENERAL

This specification establishes the performance and appearance requirements for the interior decorative coatings and used on laboratory products. The material to be used for the coating will be applied dry over metallic substrates. The material must be available in a number of colors matched to Metal-Arc standards.

Manufacturability

The material shall be such that it can be applied in multiple coatings where need, without undercoat sanding. The shelf life of the material shall be six (6) months at not more than 77 degrees without deterioration of properties.

Appearance

<u>Description</u>	<u>Test Procedure</u>	<u>Requirement</u>
A. Color	AES-C-0100	Pass
B. Light Resistant	QUV A Apparatus	48 hours w/o change in color or gloss
C. Thickness	Mill Gauge	See page 3 of 3
D. Glass	ASTM D523-80	30 Degree + 5 Matte
	60 Degrees Glossmeter	20 Degree + 5 Black

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Performance

A. Hardness	ASTM D3363-74 (no indentation)	3-H Min.
B. Impact Resistance	ASTM D2794-69	120 in-lbs w/o cracking
C. Flexibility	ASTM D522-60	No cracking or loss of adhesion at bend
D. Abrasion	Tabor abrasor CS 10 Wheel	14 mg. Max. weight loss per 100 cycle
E. Humidity	ASTM D2247	288 hours exposure w/ no loss of adhesion or blistering
F. Salt Spray	ASTM B117-64	144 hours exposure w/ no rust
G. Adhesion		90 of the squares show finish
H. Chemical Resistance	A door shall be removed cabinets and laid Flat and level on a horizontal surface. Chemical spot tests shall be made by applying 10 drops (apx. 0.5 cm ³) of each reagent listed in Table 1 to the surface to be tested. Each reagent spot shall be open to the atmosphere. Ambient temperature shall be 68-72° F (68-72° C) After one hour, chemical shall be flushed away with cold water and the surface washed with detergent and warm water at 150° F (65° C) Surface shall then be examined under 100 degree foot candles of illumination.	A Max. of three failure from the classifications shall be acceptable.

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NON-WORKING SURFACES

All other than above unexposed surfaces .75 C

<u>CONDITION</u>	<u>SURFACE "A"</u>	<u>SURFACE "B"</u>	<u>SURFACE "C"</u>
Blemish	No	Not permitted on surfaces easily detected from an arms length.	Yes
Water Spot	No	Not permitted on surfaces easily detected from an arms length.	Yes
Sag	No	Slight	Yes
Over Cure	No	No	Yes
Under Cure	No	No	Yes

Installation

- A. **Casework Installation:**
1. Set Casework components plumb, square and straight with no distortion and securely anchor to building structure.
 2. Bolt or screw continuous cabinets together with tight flush joints.
 3. Abut top edge surfaces in one true plane. Provide flush joints not to exceed 1/8".
- B. **Adjusting:**
1. Repair or remove and replace any defective work as directed by the Architect upon completion of installation.
- C. **Cleaning:**
1. Clean shop finished casework, touch up as required.
 2. Clean countertops with diluted dishwashing liquid and water.
- D. **Protection of Finished work.**
1. Cover all horizontal surfaces with corrugated card board and mark "DO NOT STAND".

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