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| This guide specification was prepared utilizing 3-part format recommended by the Construction Specifications Institute (CSI), and generally incorporates recommendations from their SectionFormat™/Page Format™, and MasterFormat™, latest Editions, insofar as practicable.  Carefully review and edit the text to meet the Project requirements and coordinate this Section with the remainder of the Specifications and the Drawings.  Where bracketed text is indicated, e.g. [text], make appropriate selection and delete the remainder of text within additional brackets, highlighting, and bold face type, if any.  Consult the manufacturer for assistance in editing this guide specification for specific Project applications where necessary.  This Specification was current at the time of publication but is subject to change. Please confirm the accuracy of these specifications with the manufacturer prior to use. |

SECTION 12 35 53.23

**SOLID-PLASTIC LABORATORY CASEWORK**

PART 1 GENERAL

1. SUMMARY:
2. Section Includes:
   1. Solid-plastic, Regular or Flame Retardant Virgin Polypropylene, with optional PVC, or PVDF Cabinetry
   2. Cabinet hardware including Hinges; Drawer Stops; Handles and Closures
   3. Work surfaces: Shelving, Sinks and Accessories
   4. Fixtures (if specified), shipped loose for field installation.
   5. Fume Hoods, Special Storage Cabinets, Carts and Bench units
3. GENERAL REFERENCES:
4. Comply with all applicable trade standards, ordinances, building codes and regulations and those standards and references listed (where applicable)
   1. Scientific Equipment and Furniture Association (SEFA©)
   2. Americans with Disabilities Act (ADA)
   3. American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE)
   4. American Society for Testing and Materials (ASTM)
   5. National Electrical Manufacturer’s Association (NEMA)
   6. American National Standards Institute (ANSI)
5. RELATED SECTIONS:
6. Division 6: Wood backing in walls for Laboratory Casework and accessory anchorage
7. Division 9: Metal backing in walls for Laboratory Casework and accessory anchorage
8. Division 15: Mechanical
9. Division 22: Plumbing - Furnishing and installation of plumbing utilities and final connections.
10. Division 26: Electrical - Furnishing and installation of electrical utilities and final connections.
11. SUBMITTALS:
12. Shop Drawings; submit manufacturer’s data for each item including dimensions, materials, configurations and construction details.
13. Provide installation instructions, materials needed and maintenance information.
14. If required; supply material samples 3” x 3” and hardware samples.
15. Certification if needed; supply SEFA certification stating cabinetry is made to SEFA standards.
16. Delivery, Storage and Handling.
    1. Comply with manufacturer's written instructions.
    2. Deliver casework to Project site in an undamaged condition in manufacturer's original sealed packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
    3. Inspect casework on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
17. Do not deliver or install equipment until the following conditions have been met.
    1. Windows and doors are installed, and the building is secure and weather tight.
    2. Space is heated to at least 50-degree F.
    3. Ceiling, overhead ductwork and lighting are all installed.
    4. All painting is completed, and flooring is finished.
    5. Protect finished cabinet surfaces from soiling or damage during handling and installation
    6. Cover work surfaces with cardboard and mark in large letters “NO STANDING”. The equipment Is supplied with a protective film that should be left in place until installed and then removed.
    7. When ambient temperatures are 32 degrees F, or below, careful handling is highly recommended as Polypropylene gets very brittle at those temperatures.

1. MATERIALS:
2. Stress relieved with UV inhibitors Polypropylene in ¼”, ½”, ¾” and 1” Thicknesses
3. Fully seam welded joints with hot air or nitrogen
4. Standard glossy white in color with an option in glossy black
5. Polypropylene Hinges, Handles and Door Stops attached with Polypro screws
6. Minimum of two hinges per door
7. Two pulls for drawers 24” or wider
8. Drawer slides are UHMW (ultra-high molecular weight) self-lubricating Polyethylene
9. Windows are Clear Polycarbonate (Lexan)
10. Seismic restraining lips ½” tall will be on all removable shelves
11. Caulking, RTV or Adhesives to be water resistant
12. QUALITY ASSURANCE:
13. Comply with the provisions of the Building Code, these specifications, and standards referenced in Article 1.02 REFERENCES, except where more stringent requirements are shown on the Drawings or specified herein.
14. Manufacturer: A firm with undivided responsibility for the fabrication of casework and performed at a single location.
15. Installer: The manufacturer or an installer authorized by the manufacturer to install laboratory casework, with at least 10 years of successful experience installing casework similar to that specified.
16. Catalog Standards: Manufacturer's catalog numbers may be shown on Drawings for convenience in identifying certain laboratory cabinet work. Unless modified by Drawings and Specifications, catalog description for indicated number constitutes requirements for each such cabinet.
17. Chemical and physical resistance of exterior finish of casework shall conform to SEFA minimum standards.
18. WARRANTY:
19. Manufacturer's standard form in which manufacturer agrees to repair or replace casework that fails in materials or workmanship within specified warranty period.
    1. Failures include, but are not limited to
20. Manufacturer defects;
21. Structural failure;
22. Warping, and;
23. Finish.
    1. Failures do not include:
24. Damages caused by misuse, abuse, or modifications made by the Owner.

SPECIFIER Select: When warranties are required, verify with Owner's counsel that warranties stated in this Article are not less than remedies available to Owner under prevailing local laws.

* 1. Warranty Period: Provide a written warranty for 1 year from the date of acceptance or substantial completion, whichever is later. Stipulate that defects that develop within the warranty period shall be removed, repaired and/or replaced at no additional cost to Owner.

PART 2 PRODUCTS

1. MANUFACTURER:
2. Acceptable Manufacturers:

LABAIRE Systems (LAS), a Division of ACTIVAR Plastics Products Group

9650 Newton Avenue South

Bloomington, Minnesota 55431

1. Substitutions: Manufacturers seeking approval of their products are required to comply with the Owner's Instructions to Bidders.
2. MANUFACTURED UNITS:
3. Casework: "LAS" Series cabinets, including doors, drawers, and related components.
   1. Face Style: Flush overlay; door and drawer faces cover cabinet fronts with only enough space between faces for operating clearance.
   2. Cabinet Style: Face frame.
4. CASEWORK FABRICATION:
5. General Standard Base Cabinets 22” Deep (Sitting Height ~ 29” Tall or Standing Height ~ 35” Tall):
   1. Each base cabinet has a completely welded shell assembly which is rigid and self-supporting for use interchangeably in a group of cases or for single use. Each piece is complete and can be relocated at any time without any finish work needed. Each unit has a uniform clearance around door and drawers.
   2. Case bottoms are a pan type and sealed for liquid containment.
   3. Each cabinet has a toe kick that is 3” deep x 4” tall.
   4. Each cabinet has a front and back top flange for mounting of countertop.
   5. Cabinets that have a door fabricated as one-piece construction and can be easily removed.
   6. Cabinets that have a drawer are fabricated as one-piece construction and can be easily removed.
   7. Each door cabinet has an adjustable shelf
   8. Base cabinets can be supplied with all types of fillers (rear / front / island / corner)
6. General Standard Wall Cabinets 12” Deep (24” Tall or 30” Tall):
   1. Each wall cabinet has a completely welded shell assembly which is rigid and self-supporting for use interchangeably in a group of cases or for single use. Each piece is complete and can be relocated at any time without any finish work needed. Each cabinet can have a sloped top if required. Each cabinet can have a hinged door or sliding door and can have windows if required.
   2. Each wall cabinet has (2) adjustable shelves with 1” incremental adjustments.
   3. Wall cabinets can be supplied with (front or corner) fillers.
7. General Standard Tall Cabinets:
   1. Each tall cabinet has a completely welded shell assembly which is rigid and self-supporting for use interchangeably in a group of cases or for single use. Each piece is complete and can be relocated at any time without any finish work needed. Each cabinet can be open, hinged door(s) or sliding doors.
   2. Each tall cabinet has adjustable 1” liquid containment shelves with 1” incremental adjustments. Shelf load is typically 10 lbs. per square foot.
   3. Wall cabinets can be supplied with front fillers.
8. General Standard Adjustable Wall Shelving:
   1. Each wall shelf has a completely welded shell assembly which is rigid and self-supporting for use interchangeably in a group of shelves or for single use. Each piece is complete and can be relocated at any time without any finish work needed. Shelf load is typically 10 lbs. per square foot. Each shelf has 1” liquid containment.
   2. Each wall shelf needs (2) upright standards for every 24” of shelf.
   3. Standard shelf lengths are: 18” / 24” / 36” / 48”
   4. Standard shelf depth ~ 12”
   5. Standard height ~ 4.25”
9. Tall Cabinet Options:
   1. Standard Widths: 24” / 30” / 36” / 48”
   2. Standard Height: 60” / 84”
   3. Standard Depths: 18” / 22”
   4. Sloped Tops
   5. Clear Widows
   6. Front vents with exhaust fitting
10. General Standard Tables:
    1. Each table has a completely welded assembly which is rigid and self-supporting.
    2. Each table has a non-adjustable shelf welded in place.
    3. Each table has adjustable leg levelers.
    4. Standard tables have 1” Polypropylene tops but can be substituted with either Epoxy Resin or Phenolic. Tops come standard with 1” overhang all around.
11. Table Options:
    1. Standard Lengths: 48” / 60” / 72” / 96”
    2. Standard Depths of 30” / 36”
    3. Standard Heights of 30” / 36”
    4. Drawers or Doors
    5. Pneumatic height adjustment ~ nominal 12”
12. Hardware: Install hardware uniformly and precisely prior to shipping insofar as practicable; ship remainder of hardware loose, for installation in the field.
    1. Adjust and align hardware so that moving parts operate freely and contact points meet accurately.
    2. Each hinge consists of (2) halves with a center pin and is (5) Knuckle Type.
    3. Each door/drawer pull is molded white Polypro and is fastened with Polypro screws to backside.
    4. Catch is an encapsulated magnet press fit into door and door frame.
13. CASEWORK WORK SURFACES:
14. Epoxy Resin, Phenolic or Polypropylene is the recommended types.
    1. Standard depth is 30”, with a 4” tall back splash, and 1” overhang in the front and sides.
    2. Sinks can be a drop-in style, welded to underside of countertop or under mount with sink supports.
15. FIXTURES:
16. Sinks:
    1. Standard molded sinks
    2. Custom Fabricated sinks
    3. ADA sinks
17. Faucets:
    1. Premanufactured faucets
    2. Fabricated or custom faucets
    3. ADA faucets
18. Wall or Deck Mount Plastic Turrets:
    1. Air
    2. Nitrogen
    3. Vacuum
    4. Lab Water
    5. DI / RO Water
    6. Teflon™ Eye Wash Gun

PART 3 – EXECUTION

1. Examination
2. Examine substrates, areas, and conditions, with installer present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Notify the **Construction Manager** of conditions detrimental to performance of the work and recommended corrections. Where the installation and its completion will be delayed due to existing conditions, follow notification immediately with a written report. Proceed with installation only after unsatisfactory conditions have been corrected.
3. INSTALLATION:
4. General: Install casework plumb, level, true, and straight with no distortions. Shim as required, using concealed shims. Where casework abuts other finished work, scribe, and apply filler strips for accurate fit with fasteners concealed where practicable.
5. Base Cabinets: Set cabinets straight, plumb, and level. Adjust sub-tops within 1/16-inch of a single plane. Fasten each individual cabinet to floor at toe space, with fasteners spaced 24 inches on center. Bolt continuous cabinets together. Secure individual cabinets with not less than 2 fasteners into floor, where they do not adjoin other cabinets. Where required, assemble units into one integral unit with joints flush, tight, and uniform. Align similar adjoining doors and drawers to a tolerance of 1/16-inch.
6. Wall Cabinets: Securely fasten to solid supporting material, e.g. wood blocking in light gage steel-framed walls, not plaster, lath, or gypsum board. Anchor, adjust, and align wall cabinets as specified for base cabinets.
7. Work Surfaces:
   1. General:
8. Fasten work surfaces by screwing through base units into underside of work surfaces using manufacturer's recommended fasteners and practices.
9. Locate field joints as shown on final Shop Drawings, factory prepared so there is no job site processing of top and edge surfaces.
10. Form seams to align adjacent surfaces flush, without evidence of joinery where possible.
11. Provide cutouts for sinks and lavatories, including holes for faucets and accessories.
12. Provide holes and cutouts required for mechanical and electrical service fixtures.
    1. Workmanship:
13. Abut top and edge surfaces in one true plane, with internal supports placed to prevent deflection. Provide flush hairline joints using clamping devices.
    1. At stone-type material joints, use manufacturer's recommended adhesives with holding devices to provide joint widths not more than 1/16-inch wide, filled and flush with abutting edges.
14. After installation, carefully dress joints smooth, remove surface scratches, clean, and polish entire surface.
15. Provide scribe moldings for closures at junctures of top, curb, and splash with walls, as recommended by manufacturer for materials involved. Except where welding is utilized, use chemical resistant, permanently elastic sealing compound where recommended by manufacturer.
16. Adjust casework and hardware so that doors and drawers operate smoothly without warp and bind.
17. Coordinate sequence of work with mechanical, plumbing, and electrical trades.
18. CLOSEOUT SUBMITTALS:
19. Submit in accordance with Lab Planners or Architects direction
    1. Maintenance Data: Include detailed instructions for maintenance of casework.
    2. Job specific warranty information.
    3. Supply cleaning information for the different plastics used.
    4. Supply part numbers of replaceable equipment, such as handles, hinges and screws.

END OF SECTION