SECTION 12 35 50.56
LABORATORY CASEWORK AND WORK SURFACES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Laboratory Casework and Cabinetry.

B. Solid Phenolic Composite Laboratory Work Surfaces.

1.2 REFERENCES

A. American Woodwork Institute, Section 400.

B. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

C. SEFA 3-2003, 8-1999 Recommended Practices.

D. Chemical resistance test per SEFA 8.

1.3 SUBMITTALS

A. Submit under provisions of Section 013000

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Shop Drawings: Submit shop drawings indicating room sizes, layout, cabinet dimensions, material thickness, size and location of fixture holes, utility, and sink cut outs.

D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full standard stocking color range of available colors and patterns.

E. Verification Samples: For each finish product specified, two samples, minimum size 4 inches (101mm) square representing actual product, color, and patterns.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Single manufacturer with a minimum of fifteen years experience will provide all primary products specified in this section.

B. Installer Qualifications: Single installer approved by the manufacturer with a minimum of ten years demonstrated experience in installing products of the same type and scope as specified in this section will install all products listed.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of hazardous materials in accordance with requirements of local authorities having jurisdiction.

1.6 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.7 WARRANTY

A. At project closeout, the selected manufacturer shall warrant and provide to the owner or owners representative an executed copy of a warranty for a period of one-year after Project Acceptance Date, that all products and equipment shall be free from defects in material and workmanship.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. **Basis of supply or fabrication**: Total Laboratory Solutions
www.PhenolicResinLabs.com
Ph: 480.488.6421
Email: Sales@PhenolicResinLabs.com

B. **Basis of Design**: Trespa Solid phenolic flat panels based on 30% thermosetting resins homogenously reinforced with 70% wood fibers and manufactured under high pressure and temperature to form a composite panel. Panels to have an integrated, decorative surface with pigmented resins cured using 'Electron Beam Curing' (EBC) technology, rendering the panel highly chemical resistant and highly antibacterial activity of > 99.99% reduction after 24 hours using testing method based on JIS Z 2801: 2000.

C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 WORK SURFACES / BENCH TOPPINGS

A. General: Solid phenolic composite panel construction with black core.

1. Model: Trespa TopLab Plus - Laboratory Grade
2. Thickness: minimum 3/4" (20mm) or industry standard maximum 1" (25mm).
3. Finish: Crystal Smooth Finish
4. Exposed edge Finish: 1/8 inch bevel (3mm) or 3/16 inch (4.75mm) radius.
5. Backs and Side Splashes: Supplied loose, cut to size, field applied in the same material and color as countertops. Applied splash may be 3/4 inch (20mm) or 1 inch (25mm) thickness. Curbs as installed shall be 4 inch high (100mm) typical, unless otherwise indicated on drawings. Backsplash and return side splash curbs will be bonded to the tops at the jobsite with two part epoxy resin adhesive. Include top mounted end curb where work surfaces abut walls, cabinets, fume hoods, and locations detailed on Drawings.
6. Maximum length without seam, up to 97 inch 2464mm) or 120 inch (3048mm).
7. Drip grooves of 1/8 inch depth, 1/8 inch wide (3mm) and set back 1/2 inch (12.5mm) on the underside at front of exposed edges.
8. Color: Chosen From Manufacturer's standard color range, to include:

***TRESPA TOPLAB PLUS COLORS**:*

- Color: **Black** T90.0.0. - Industry Standard **In Stock** 1/2"; 5/8"; 3/4" and 1" Thick
- Color: **Slate Gray** T70.0.0 **In Stock** 3/4" and 1" thick
- Color: **Mystic White** T18.0.1. **In Stock** 3/4" and 1" Thick
- Color: **Regular White** T03.0.0. **In Stock** 3/4" and 1" Thick
- Color: **Silver Grey** T03.4.0. **In Stock** 3/4" and 1" Thick
- Color: **Pastel Grey** T03.1.0. Limited Stock 3/4" Thick
- Color: **Polar Green** T30.0.1.
- Color: **Limestone Yellow** T05.0.1.
- Color: **Glacier Blue** T21.1.1.
- Color: **Canyon Red** T09.3.4.
- Color: **Speckled - Pastel Grey/Silver** D02.1.0.
- Color: **Black Craquele** / CO-09 - Available 3/4"

B. Performance:
1. Modulus of Elasticity: 1,500,000 psi minimum.
2. Shear Strength: 2000 psi minimum.
3. Compressive Strength: 24,000 psi minimum.
4. Weight: 93 pcf maximum.
5. Fire Performance: Maximum flame spread of 25 per ASTM E 84 (Class 1, Class A) for panels 5/8 inch (16mm) thick and greater.
6. Porosity: Nonporous surface and edges.
7. Microbial Characteristics: Will not support microorganism growth.
8. Chemical Resistance: Provide panel with minimum performance in accordance with chemical resistance test per SEFA 8.

2.3 CASEWORK AND CABINETRY

A. Basis of Supply or Fabrication: Total Laboratory Solutions
www.PhenolicResinLabs.com
Ph: 480.488.6421
Email: Sales@PhenolicResinLabs.com

B. Basis of Design: RESISTOP Solid Phenolic produced with decorative kraft papers impregnated with Phenol Formaldehyde Resins (Phenolic Resins) with melamine resin on surface faces with a clear protective overcoat, integrally compression molded under high heat and pressure to form a composite panel.

1. Fire resistance: Core meets Underwriters Laboratories (UL) Class A fire resistance per ASTM E 84.
2. Fire resistance: Core meets Underwriters Laboratories (UL) Class B fire resistance.
3. Colors:
    a. Core / Edge Color - Black
    b. Finish: CA = Cashmere finish; MA = Matte Finish
    c. Interior color: White S-550 CA-Elegant White or same color as exterior, as indicated on drawings.
    d. Exterior Color: Chosen From supplier's standard color range, to include:

Solids: S405 CA-Black; S-406 CA-Silver Grey; S-407 CA-Ivory;
S-431 CA-Willow Grey; S-434 CA-Charcoal Slate grey; S-436 CA-Sand;
S-444 CA-New Sand; S-445 CA-Almond; S-463 CA-Antique White;
S-466 CA-Bright Red; S-486 CA-Beige; S-513 CA-Denim Blue; S-517 CA-Saguenay;
S-542 CA-Limousine Grey; S-548 CA-Custom Grey; S-550 CA-Elegant White;
S568 CA-Midnight Blue.

Patterns: P-203 CA-Van Gogh Charcoal; P325 CA-Brushed Pewter; P500 CA-Black Stone; P999 CA-Pewter; P623 CA-Brushed Aluminum; P885 CA-Black Grit; P886 CA-Grey Grit.

Wood Grains: W-403 CA-Natural Anegre; W-405 CA-Cherry Brandy; W-138 CA-Burnished Cherry: W-1531 CA-Gold Speckle Maple; W-1538 CA-Fruity Pear; W-1539 CA-Architectural maple; W-372 CA-Mahogany; W230 CA-Sliced Red Oak; W411 CA-Copper Wood; W417 CA-Spiced Walnut; W425 CA-Burnished Rosewood.

Note: Unless specified otherwise in architectural drawings, all cabinets in wood grain Solid Phenolic shall have grain running parallel with the length of the component. Grain direction of all drawer fronts shall be horizontal. Grain direction for all doors shall be vertical.

C. Doors: 1/2 inch (13 mm) thick solid phenolic composite material.
   1. Corners: Rounded.
   2. Edges: Crescent profile; machine polished and free from tooling imperfections.

D. Cabinet Bodies:
   1. Exposed edges: Straight profile; eased edges to remove sharpness; machine polished and free from tooling imperfections.
   2. Cabinet Sides and Bottoms: 1/2 inch (13mm) thickness.
   3. Door and Drawer Heads: 1/2 inch (13mm) thickness.
   4. Horizontal Rail Supports: 1/2 inch (13mm) thickness.
   5. Cabinet Backs: 1/4 inch (6mm) thickness.
   6. Wall Cabinet Backs: 1/2 inch (13mm) thickness.
   7. Cabinet Shelves: 3/4 inch (19mm) thickness.
   8. Fixed Shelves: ¾" inch (19mm) thickness.
   9. Middle Stretchers: 1/2 inch (13mm) thickness.
   10. Security Panels: 1/2 inch (13mm) thickness.
   11. Drawer Box: 5/8" (16mm) thickness.
   12. Top Stretcher: 3/4 inch (19mm) thickness.

E. Ancillary Panels: Finished end panels and closures fabricated of 1/2 inch (13mm) thick solid phenolic composite material.

2.4 CABINET HARDWARE

A. Hinges: Heavy duty stainless steel. Aximat 300 Thin Panel 344.75.051, fixed pin, and all edges eased. Each to have a minimum of four screw attachment holes. Hinges to accommodate 1/2 inch (13 mm) door thickness. Meets or exceeds ANSI/BHMA A156.9-2003 load and cycle tests.
   1. One pair per door to 36 inch (914mm) height.
   2. One and one half pair per door 36 inch (914mm) through 60 inch (1524mm) height
   3. Two pair per door over 60 inch (1524mm) height.
   4. Hinge to allow for no door protrusion at 140 degrees of opening and have integral stay-close feature.

B. Pulls to be 316 stainless steel satin 4 inch (102mm) wire pull.
   1. Drawers less than 24 inches (610mm) in width to receive one pull.
   2. Drawers over 24 inches (610mm) in width to receive two pulls.
   3. Doors receive one pull.

C. Adjustable shelf supports: Shelf clips to be nickel-plated 1/4 inch (6mm) angular with riveted pin to engage shelf in such a way as to avoid slippage and movement of shelf.

2.5 ACCESSORIES

A. Laboratory Window sills / Stools - Provide solid phenolic Trespa Laboratory window sills as indicated on contract drawings.
   1. Model: TopLab Plus.
   2. Thickness: 3/4 inch (20mm) or 1 inch (25mm).

B. Laboratory Shelving - Provide solid phenolic Trespa Laboratory shelving as indicated on architectural drawings.
   1. Model: TopLab Plus.
   2. Thickness: 3/4 inch (20mm) or 1 inch (25mm).

C. Pegboards / Drying Racks - Provide solid phenolic Trespa Laboratory Pegboards / Drying Racks as indicated on contract drawings.
   1. Model: TopLab Plus.
   2. Thickness: 1 inch (25mm).

2.6 WORK SURFACE FABRlCATlON

A. All exposed edges of tops to be sanded or machine polished to a smooth finish and, except as indicated below, rounded to a 1/8 inch (3mm) radius at the front top edges and at vertical corners.

B. Form square edges on all backsplashes and shelves.

C. Seam Joinery:
   1. Tight joint fastening.
   2. Biscuit joints.
   3. Butt joints.

D. Rout cutouts for drop-in epoxy sinks forming openings to mount minimum 3/8 inch (9 mm) deep supporting flanges flush to the work surface.

E. Routed and sand cutouts for under-mounted sinks or machine polish to form smooth edged openings with the top edge radius of 1/8 inch (3mm). Finish bottom edge of sink opening smooth with the edge broken to prevent sharpness.

F. Sink Corner cutout radius to be not less than 1/4 inch (6mm).

G. Provide drip groove where indicated.

2.7 CABINETRY FABRICATION

A. Each cabinet is complete, modular, and rigid, permitting relocation at any time.

B. Cabinets incorporate full overlay and European style design. The door and drawer heads create a 1/8 inch (3.2mm) horizontal and vertical reveal.

C. Phenolic resin to fasten vertical and horizontal members. Rabbet and dado construction. Exposed edges on cabinet components, doors and drawer heads to be machined polished black core and enclose underside of toe space.

D. Drawer and cupboard units:
   1. Base cabinets to consist of drawers, cupboard doors or a combination of as shown in Contract Drawings.
   2. All base cabinets shall have removable back panels from the inside of the cabinet for access to the pipe spaces to the rear of the cabinet as available in the cabinet design.
   3. Cupboard units to be provided with an adjustable shelf. Shelf clips to be 1/4 inch (13 mm) nickel plated, angular with riveted pin to engage shelf in such a way as to avoid slippage and horizontal movement of shelf.
   4. Sectional units have 4 inch (102mm) high by 2 1/4 inch (57mm) deep toe space members unless otherwise noted on Contract Drawings.
   5. Drawers are Grass Zargen epoxy coated steel drawer system fabricated of 5/8 inch (16mm) thick solid composite phenolic resin material and have an epoxy coated full extension 100 lbs. (45kg) drawer guides as standard. Drawer bottoms of matching 5/8 inch (16mm) material.

E. Match all and floor storage cabinets and cases match to design and construction of sectional units specified.

F. Framed glazed doors: Identical in construction, hardware and installations to solid panel doors. Frame glazed doors to be removable for glass replacement utilizing a clear retainer clip.

G. Base:
   1. Curb mounted base.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 CABINETRY INSTALLATION

A. Install cabinets in locations as shown on shop drawings per manufacturer's instructions.

B. Install cabinets plumb, level, square, rigid, and flush.

C. Install all required trim, fillers, end panels, and closures per manufacturer's instructions.

D. Use hardware supplied or recommended by the manufacturer.

E. Correct and/or replace damaged components as directed by architect.

3.4 WORK SURFACE INSTALLATION

A. Install work surfaces as manufactured by this specification as per approved shop drawings.

B. Fix work surface panels with blind fastenings into the back or underside of the panel. Use #10, type A sheet metal screws sized to stop at least 1/8 (3mm) short of the finished face. Drill panels with 11/64 (4.4mm) diameter high speed drill bit aligned with 7/32 inch (5.5mm) clearance holes in the supporting structure.

C. Epoxy drop-in sinks to be set in beds of epoxy adhesive in grooved recess cutout.

D. Epoxy Under Mount sinks to be installed using steel sink supports, supplied with sinks. Under-mounted sinks may be supported by brackets blind-fixed to the underside of the work surface or supported by casework cradles.

E. Form field joints using manufacturer's recommended adhesive. Form inconspicuous and non-porous joints.

3.5 CLEANING AND ADJUSTMENT

A. Clean all surfaces in accordance with manufacturer's instructions. Do not use abrasive cleaners.

B. Adjust doors and locks for smooth operation without binding.

C. Lubricate door hinges and locks per manufacturer's instructions.

3.6 PROTECTION

A. After installation, protect the work surfaces from damage. Keep free from paint, plaster, cement scratches, or any other destructive forces. Repair as required.

END