

I. Specification

LABORATORY CASEWORK SECTION:

2.6 WORK SURFACES

A. Epoxy Resin Work Surface:

1. Manufacturer: Laboratory Tops, Inc.
2. Materials and Fabrication:

a. General: Material shall be a monolithic, filled epoxy resin product and shall consist of a polymerized cast resin material formulated to provide a work surface with high chemical resistance characteristics. The combination of epoxy resin and asbestos free inert materials shall be oven-cured in molds to obtain maximum chemical resistance, then removed from the molds and oven tempered to achieve maximum physical strength and stability. Surfaces shall have a uniform low-sheen surface and the finished material shall be extremely hard and resistant to scratches and abrasion.

b. Thickness:

SELECT ONE

- 1" thick (industry standard)
- 3/4" thick
- 1-1/4" thick

c. Edges and Corners: Exposed worksurface edges and corners, except as indicated, shall be furnished with a:

SELECT ONE

- 1/8" machined top edge with blended radius corners
- 1/4" machined radius top edge with blended radius corners
- 1/2" molded radius top edge with 1-1/2" molded radius corner (Contoura™)

d. Surface: Worksurfaces shall be furnished as:

SELECT ONE

- Flat
- 1/4" raised marine edge
- Flat with 1/4" raised marine edge only at epoxy sink locations

e. Backsplashes:

SELECT ONE

- Supplied loose for field application in the same material and thickness as countertops. Curbs as installed shall be 4" high, unless otherwise indicated on drawings. Curbs will be bonded to the tops at the jobsite. Include top mounted end curb where worksurfaces abut walls, fume hoods, and locations detailed on drawings.
- Integrally molded 4" high with 5/8" coved juncture to top surface. Loose curbs supplied where work surfaces abut walls, fume hoods, and locations detailed on drawings as well as around columns and uprights.

SELECT
ONE

- f. Color:
- Black Onyx
 - Platinum Gray
 - Pearl
 - Forest Green
 - Pacific Blue
- g. Warpage: Check work surface for warpage before fabrication. Measure in unrestrained condition. Work surface will be accepted for use if there is no gap exceeding 1/16" in a 36" (0.9m) span.
- h. Fabrication: Provide in longest practical lengths. All joints shall be bonded with a highly chemical and corrosion resistant epoxy grout. Provide 1/8" drip groove on underside of exposed edges set back 1/2" from edge at all sink areas and where shown on drawings. All exposed edges to be molded or finished.
- i. Thickness Tolerances: Each corner of top shall not deviate more than plus or minus 1/16" from nominal.
- j. Size Tolerances: Length, plus or minus 1/8". Width, plus or minus 1/16".
- k. Squareness: Compare the diagonal corner-to-corner measurements across the width of each work surface. The diagonal measurements must be within 1/16".
- l. Penetrations: Location of cutouts and drillings: Plus or minus 1/8". Sizes of cutout and drillings: Plus or minus 1/16".
3. Material Properties: Provide independent testing laboratory report certifying that the epoxy work surface meets or exceeds the following test criteria:
- a. Chemical Resistance:
- Test Methods:
- Volatile chemicals (organic solvents): A cotton ball, saturated with the test chemical (reagent) is placed in a one-ounce bottle (10 x 75mm test tube or similar container) with a reservoir of liquid above the ball. The container is inverted on the test material for a period of 24 hours at a standard temperature of 23° plus or minus 2°C. (73° plus or minus 4°F).
- Non-Volatile Chemicals: Five drops (1/4cc) of the test chemical are placed on the test material surface. The chemical is covered with a watch glass (25mm) for a period of no less than 24 hours at a standard temperature of 23° plus or minus 2°C. (73° plus or minus 4°F).

Evaluation Ratings:

After 24 hour exposure, exposed areas are washed with water, then a detergent solution, finally with naphtha, then rinsed with distilled water and dried with a cloth. Change in surface finish and function shall be described by the following (1-5) ratings:

- 1) No Effect: No detectable change in the material surface.
- 2) Excellent: Slight detectable change in color or gloss, but no change to the function or life of the work surface material.
- 3) Good: Clearly discernible change in color or gloss, but no significant impairment of surface life or function.
- 4) Fair: Objectionable change in appearance due to surface discoloration or etch, possibly resulting in deterioration of function over an extended period.
- 5) Failure: Pitting, cratering or erosion of work surface material; obvious and significant deterioration.

Minimum acceptable test results shall be equal to or better than the following reagent rating:

Chemicals	Minimum Acceptable Results	Chemicals	Minimum Acceptable Results
Inorganic Acids – Corrosive		Organic Solvents	
Chromic Acid 40%	4	Acetone	2
Hydrochloric Acid 10%	1	Benzene	2
Hydrochloric Acid 37%	1	Carbon Tetrachloride	2
Nitric Acid 40%	1	Dimethyl Ether	1
Nitric Acid 70%	1	Dimethyl Formamide	1
Sulfuric Acid 60%	1	Ethyl Acetate	1
Sulfuric Acid 96%	5	Ethyl Alcohol 95%	1
Organic Acids – Corrosive		Ethylene Dichloride	1
Acetic Acid 5%	1	Heptane	1
Acetic Acid, Glacial	1	Isooctane	1
Citric Acid 1%	1	Kerosene	1
Oleic Acid	1	Methyl Alcohol	1
Phenol Solution 5%	1	Toluene	1
Alkaline Solutions – Corrosive		Organic Compounds	
Ammonium Hydroxide 10%	1	Aniline	1
Sodium Carbonate Sol 20%	1	Mineral Oil	1
Sodium Hydroxide 60%	1	Olive Oil	1
Sodium Hypochlorite Sol 4%	1	Soap Solution 1%	1
Potassium Hydroxide 15%	1	Transformer Oil	1
		Turpentine	1

- b. Hardness (ASTM D785):
Test Method: Hardness, Rockwell M “M” Scale; average of five readings.
Minimum Acceptable Test Results: Average value of 100 over the five samples.
- c. Water Absorption (ASTM D570):
Test Method: Specimens measuring 3" in length by 1" in width by the thickness of the material should be used. At least three specimens should be tested. After weighing, specimens should be entirely immersed in distilled water maintained at a temperature of 23° plus or minus 1°C. (73.4° plus or minus 1.8°F) for a period of 24 hours. The samples should then be removed, dried and weighed to the nearest 0.001g. The percentage of increase in weight calculated to the nearest 0.01% should then be calculated.
Minimum Acceptable Test Results: 0.01%
- d. Flammability or Rate of Burning (ASTM D794):
Test Method: Measure “Average Time of Burning (ATB)” as described in test. At least 5 samples (125 plus or minus 5mm in length by 12.5 plus or minus 0.2mm in width) should be tested.
Minimum Acceptable Test Results: ATB should equal zero.
- e. Porcelain Crucible - Test A (Non-Standard Test)
Test Method: a high-form porcelain crucible, size D, 15ml capacity, shall be heated over a Bunsen burner until the crucible bottom attains an incipient red heat. Immediately, the hot crucible shall be transferred to the top surface and allowed to cool to room temperature.
Minimum Acceptable Test Results: Upon removal of the cooled crucible, there shall be no blisters or cracks. Slight dulling or color change is acceptable.
- f. Heat Deflection @ 264 psi (ASTM 648)
Minimum Acceptable Test Results: 193°C (380°F)
- g. Falling Ball Impact Resistance (ERF 23-69):
Test Method: Careful attention to details of test procedure should be followed. A wooden supporting frame must be used with the test. Size of samples: 12" x 12" by the thickness of the material. 2lb steel balls should be used. Three or more samples should be tested. Maximum height of 8'.
Minimum Acceptable Test Result: No fracture to a height of 7'.
- h. Thermal Shock Resistance (Non-Standard Test):
Test Method: Two cubes (2" x 2" by thickness of material) are immersed in a dry ice/acetone bath maintained at minus 78°C. The cubes are allowed to remain in the bath for 15 minutes. Each cube is removed and immediately placed in a container of boiling water at 100°C. The procedure is repeated until failure occurs (i.e., cracking, warpage, distortion) for a series of five repetitions.
Minimum Acceptable Test Results: No visible changes should be observed.
- i. Flexural Strength and Modulus of Rupture (ASTM D790):
Test Method: Test specimens should be prepared from 1" thick production material with a support span 16 times the depth (thickness) of the beam. The original surface of the sample should be unaltered. Recommended sample size is 19.5" x 1.0" x 1.0" (length x width x depth). A minimum of five samples are to be tested. Testing should be carried out to failure of the test sample. Modulus of rupture should be measured as described in the ASTM method.
Minimum Acceptable Test Result: Flexural Strength: 10,000 psi - Modulus of Rupture: 1,000,000psi

SINKS AND ACCESSORIES SECTION:

1.3 SINKS

B. Epoxy Sinks (DropIn):

1. Manufacturer: Laboratory Tops, Inc.
2. Description: Integrally molded from filled thermosetting epoxy resin, and oven cured. Nominal wall thickness of 1/2" with all interior corners coved to 1-1/2" radius and bottoms pitched to the outlet opening.
3. Drop-In Sinks: Provide as shown on drawings:
 - a. Sink shall be installed such that the top edge of the sink is positioned 1/8" below the work surface with a 30° bevel from the top of the worksurface to the top of the sink lip. The sink joint shall not exceed 1/8" plus or minus 1/16".
 - b. Sealant: Join work surface and sinks with a 2-part epoxy grout or a lab grade silicone.
4. Sink Color: Black Onyx, Platinum Gray, Pearl, Forest Green or Pacific Blue as specified.
5. Sink Outlets:

SELECT
ONE

- Epoxy
 - a. Sink outlets shall accommodate a plastic disc strainer. Provide outlet with 1.93" outlet opening and 1.5" NPSM threads.
 - b. Outlet Color: Black Onyx, Platinum Gray, Pearl, Forest Green or Pacific Blue as specified.
- Polypropylene
 - a. Sink outlets shall accommodate a plastic disc strainer. Provide outlet with 1.93" outlet opening and 1.5" NPSM threads.
 - b. Outlet Color: Black Onyx, Platinum Gray, or Pearl as specified.

6. Sink Overflows

SELECT
ONE

- Epoxy
 - a. Sink overflows shall have an open intake located at least 2" lower than the sink rim when installed. The overflow base shall taper to fit all 1.93" outlet openings.
 - b. Overflow Color: Black Onyx, Platinum Gray, Pearl, Forest Green or Pacific Blue as specified.
- Polypropylene
 - a. Sink overflows shall have an open intake located at least 2" lower than the sink rim when installed. The overflow base shall taper to fit all 1.93" outlet openings.
 - b. Overflow Color: Black Onyx.

C. Epoxy Sinks (Undermount):

1. Manufacturer: Laboratory Tops, Inc.
2. Description: Integrally molded from modified thermosetting epoxy resin, and oven cured. Nominal wall thickness of 1/2" with all interior corners coved to 1-1/2" radius and bottoms pitched to the outlet opening.
3. Undermount: Provide as shown on drawings:
 - a. Sink shall be installed from underside of countertop.
 - i. Joint between top and sink to be joined with a lab grade silicone
 - ii. Sink supports to be provided by others.
4. Sink Color: Black Onyx, Platinum Gray, Pearl, Forest Green or Pacific Blue as specified
5. Sink Outlets:

SELECT
ONE

Epoxy

a. Sink outlets shall accommodate a plastic disc strainer. Provide outlet with 1.42" outlet opening and 1.5" NPSM threads.

b. Outlet Color: Black Onyx, Platinum Gray, Pearl, Forest Green or Pacific Blue as specified

Polypropylene

a. Sink outlets shall accommodate a plastic disc strainer. Provide outlet with 1.42" outlet opening and 1.5" NPSM threads.

b. Outlet Color: Black Onyx, Platinum Gray, or Pearl

6. Sink Overflows

SELECT
ONE

Epoxy

a. Sink overflows shall have an open intake located at least 2" lower than the sink rim when installed. The overflow base shall taper to fit all 1.42" outlet openings.

b. Overflow Color: Black Onyx, Platinum Gray, Pearl, Forest Green or Pacific Blue as specified.

Polypropylene

a. Sink overflows shall have an open intake located at least 2" lower than the sink rim when installed. The overflow base shall taper to fit all 1.42" outlet openings.

b. Overflow Color: Black Onyx.

D. Cupsinks:

1. Manufacturer: Laboratory Tops, Inc.
2. Epoxy Resin Cupsinks: Provide as shown on drawings.

SELECT
ONE

- Flush mounted cupsinks shall be of molded epoxy resin. Cove inside corners and pitch bottom to integral 1-1/2" NPSM threaded outlet.
- Surface mounted cupsinks shall be of molded epoxy resin. Cove inside corners and pitch bottom to integral 1-1/2" NPSM threaded outlet.
 - a. Sink Color: Black Onyx, Platinum Gray, Pearl, Forest Green or Pacific Blue as specified.