

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Divisions 22 Plumbing:
 - .1 Water piping from faucets, stop valves, and connection to piped utilities in adaptable casework uprights.
 - .2 Waste and vent piping, and connection to laboratory sinks and neutralization tanks.
 - .3 Faucet fixtures.
- .2 Division 26 Electrical: for installation of electrical outlets and cover plates, and for connection of electrical services
- .3 Division 27 Communications: for installation of communications data outlets and cover plates, and for connection of data services.

1.2 REFERENCES

- .1 National Fire Protection Association (NFPA)
 - .1 ANSI/NFPA 30-2012, Flammable and Combustible Liquids Code
- .2 Canadian Standards Association (CSA)
 - .1 CSA C22.2 No.42, General Use Receptacles, Attachment Plugs and Similar Devices
 - .2 CSA C22.2 No.42.1, Cover Plates for Flush Mounted Wiring Devices
- .3 Scientific Equipment and Furniture Association (SEFA)
 - .1 SEFA 2-2010, Installation of Scientific Laboratory Furniture and Equipment
 - .2 SEFA 3-2010, Work Surfaces
 - .3 SEFA 7-2010, Laboratory and Hospital Fixtures
 - .4 SEFA 8M-2010, Laboratory Grade Metal Casework
 - .5 SEFA 10-2013 Adaptable Lab Furniture Systems
- .4 Underwriters Laboratories (UL)
 - .1 UL 962-2008, Household and Commercial Furnishings
 - .2 UL 1275-2005, Flammable Liquid Storage Cabinets

1.3 ADMINISTRATIVE REQUIREMENTS

- .1 Coordination:
 - .1 Coordinate mechanical and electrical requirements for proper and correct installation of plumbing and

- electrical rough-in and other affected Sections for rough opening dimensions required for installation.
- .2 Coordinate reinforcement in walk-in cooler panels for wall mounted cabinets and shelving.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data: Submit manufacturer's data and installation instructions for each type of laboratory casework unit, fixtures, accessories, hardware, safety cabinets, and drying racks.
- .3 Shop Drawings: showing plans, elevations, ends, cross-sections, service run spaces, location and type of service fixtures. Include fume hood elevations with casework elevations.
 - .1 Details of laboratory casework construction and related and dimensional position, with sections. Use alpha-numeric designations indicated on Drawings.
 - .2 Include layout of units with relation to surrounding walls, doors, windows, in-wall electrical outlets and other building components.
 - .3 Coordinate shop drawings with other trades involved.
 - .4 Indicate in-wall blocking and rough-in requirements for coordination with other trades.
- .4 Samples:
 - .1 For Initial Selection: Submit duplicate samples of manufacturer's colour chips showing full range of colours available and finishes.
 - .2 For Verification: Submit duplicate samples of:
 - .1 Each type worksurface material, 150 by 150 mm including external corner, and marine edge on sink units.
- .5 Certification/Test Reports: Include independent certified laboratory test reports verifying compliance with specified chemical and physical resistance requirements.

1.5 CLOSEOUT SUBMITTALS

- .1 Closeout Submittals: Submit in accordance with Section 01 78 00 - Closeout Submittals.
 - .1 Provide recommended procedures cleaning and maintenance.

1.6 QUALITY ASSURANCE

- .1 Work surface construction and performance characteristics: in compliance with SEFA 3, SEFA 7, and SEFA 8 or 10

standards. If requested, submit independent, third party testing validating products comply with specifications.

1.7 DELIVERY, STORAGE AND HANDLING

- .1 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .2 Protect finished surfaces from soiling and damage during handling and installation. Keep covered with protective covering.
- .3 Collect and separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction Waste Management and Disposal.

1.8 AMBIENT CONDITIONS

- .1 Do not deliver or install equipment until the following conditions have been met:
 - .1 Ceiling, overhead piped services, ductwork, lighting, and power and data services are installed.
 - .2 Painting is completed and flooring is installed.

Part 2 Products

2.1 SYSTEM DESCRIPTION

- .1 Work surfaces:
 - .1 Worksurfaces: adjustable on 50 mm increments.

2.2 DESIGN AND PERFORMANCE REQUIREMENTS

- .1 Chemical Resistance of Phenolic Resin Worksurfaces: Submit independent testing laboratory report certifying that worksurfaces are capable of withstanding test procedures in accordance with SEFA 8, for chemical spot test.
 - .1 Test procedure: Apply five drops of each reagent listed in SEFA 8 to each surface and cover with 25 mm watch glass, convex side down; test volatiles using one ounce bottle stuffed with saturated cotton. After 24 hour exposure flush surface, clean, rinse and wipe dry.
 - .2 Evaluation ratings: Change in surface finish and function described as follows:
 - .1 Level 0 = no detectable change in surface material.
 - .2 Level 1 = slight detectable change in colour or gloss, but no change to the function or life of work surface material.

- .3 Level 2 = clearly discernible change in colour or gloss, but no significant impairment of work surface function or life.
- .4 Level 3 = objectionable change in appearance due to surface discolouration or etch, possibly resulting in deterioration of function over an extended period.
- .5 Level 4 = pitting, cratering or permanently etching of work surface material; obvious and significant deterioration.
- .3 Acceptance Criteria: maximum four Level 4 conditions.

2.3 MATERIALS

- .1 Phenolic resin: decorative high-pressure compact laminates consisting of layers of wood-based fibres impregnated with thermosetting resins, decorative surface layers, and scratch- and chemical-resistant transparent topcoat. No added urea-formaldehyde material. Allow for up to two colours.
 - .1 Density: 1400 kg/m³, to ASTM D792
 - .2 Modulus of elasticity: 8,000 N/mm² to ASTM D638.
 - .3 Chemical resistance: meets SEFA 3.
 - .4 Tensile strength: ≥70 MPa to ASTM D638.
 - .5 Flexural strength: ≥100 MPa to ASTM D790.
- .2 Sealant: mildew-resistant silicone.
 - .1 Maximum VOC Content: 250 g/L (less water) in accordance with SCAQMD Rule 1168.

2.4 COMPONENTS

- .1 General: refer to drawings for component configuration.

2.5 WORKSURFACE FABRICATION

- .1 General:
 - .1 Fabricate laboratory worksurfaces and backsplashes from materials indicated.
 - .2 Fabricate segmented tops in units of modular sections with demountable fastenings for ease of relocation, unless indicated otherwise. Provide individual top for each side of double-frame rear frame assemblies.
 - .3 Cut holes for service fixtures, fittings, accessories, and equipment.
 - .4 Notch worksurfaces at vertical uprights, columns, and other projections.
 - .5 Round or chamfer exposed edges and corners of cutouts.
 - .6 Finish exposed edges and surfaces in same manner as specified for work surface.

- .7 Make allowances around periphery and where fixed objects pass through or project into worksurface material to permit normal movement without restriction.
- .8 Worksurface lengths: single piece at each unit.
- .9 Provide backsplash/sidesplash on worksurfaces set against permanent partitions, and at movable partitions.
- .2 Phenolic Resin: 25 mm thick, except 12 mm thick for side and backsplash.
 - .1 Backsplashes: 100 mm high, except where indicated otherwise, site applied.
 - .2 Provide steel channel reinforcing at worksurfaces with aprons spanning 1070 mm or greater. Edge of worksurface capable of supporting 90 kg point load.

Part 3 Execution

3.1 EXAMINATION

- .1 Ensure following list of building conditions are completed prior to installation of casework and fixtures. Conduct joint review with Departmental Representative and installer prior to installation to confirm following requirements are met:
 - .1 Floor finish: completed prior to casework installation.
 - .2 Wall finish: complete including final painting.
 - .3 Branch electrical circuits, including grounding conductors: in place.
 - .4 Where mechanical, electrical and HVAC service lines will be behind or under casework, service access or stubs shall have been installed at appropriate rough-in point.
 - .5 Service lines for water: flushed clean of dirt, capped and tested for leaks before connection of service fittings.
- .2 Fit to fixed casework and actual construction. If it is not possible, or practical, to take field measurements before fabricating, provide adequate installation tolerances and scribe or trim to fit.
- .3 Verify field dimensions and that adjacent walls are square prior to installation.

3.2 INSTALLATION OF WORKSURFACES

- .1 Scribe worksurfaces to abutting surfaces where required due to field conditions.

- .2 Workmanship: Abut top and edge surfaces in one true plane. Provide flush hairline joints.
- .3 Tolerances: Provide joint widths not more than 1.5 mm wide at any location, filled and flush with abutting edges. Horizontal alignment of top surface of joints for their entire length shall be within 1 mm. Align front edges of abutting pieces.
- .4 Surface Finish: After installation, dress joints smooth, remove surface scratches, clean and polish entire surface.

3.3 SINK INSTALLATION

- .1 Set stainless steel sinks and drop-in sinks flush with worksurface. Secure and support in accordance with manufacturer's recommendations.

3.4 CAULKING

- .1 Apply small continuous bead of silicone sealant at junction of work surface or backsplash and adjacent permanent partition.

3.5 CLEANING AND PROTECTION

- .1 Repair or remove and replace defective work as directed by the Departmental Representative upon completion of installation.
- .2 Clean shop-finished surfaces, touch-up and remove or refinish damaged or soiled areas, as acceptable to Departmental Representative. Clean and polish work surfaces and sinks.
- .3 Protection: Protect materials fixtures from damage by work of other trades.

END OF SECTION