

Part 1 General**1.1 Summary**

- .1 Unless otherwise indicated, follow the standards below when specifying Chemical Storage Cabinets. These standards are not intended to restrict or replace professional judgment.
- .2 The Project Manager will liaise with the end users for project specific needs. Consult with the Project Manager to obtain general layout and specific requirements.

1.2 Content

- .1 Are included in this section:
 - .1 Flammables and Acids storage cabinets.

1.3 Related McGill Guidelines

- .1 Laboratory Fume Hoods (11 53 13)
- .2 Laboratory Casework (section 12 35 53)
- .3 Chemical Fume Hood – HVAC (section 23 38 17)
- .4 McGill EHS Laboratory Design Guidelines
<http://www.mcgill.ca/ehs/laboratory/lab-design-guidelines>
- .5 McGill Laboratory Safety Manual:
<http://www.mcgill.ca/ehs/laboratory>
- .6 McGill Radiation Safety Policy Manual:
<http://www.mcgill.ca/ehs/laboratory/radiation/manual/>
- .7 McGill Biosafety Manual:
<http://www.mcgill.ca/ehs/laboratory/biosafety/manual/>
- .8 McGill Laser Safety Manual:
<http://www.mcgill.ca/ehs/laboratory/laser-safety/laser-safety-manual>

1.4 Design Requirements:

- .1 Coordination:
 - .1 Proper coordination of Mechanical and Electrical connections must be done from the preliminary design stage.
- .2 Cabinet types:
 - .1 For retrofit projects, new acids cabinets should match with existing cabinets and casework, preferably from the same manufacturer.
 - .2 The use of melamine-faced acids cabinets must be confirmed with McGill Design Services department beforehand. They must not be used in animal facilities or other high humidity areas.

1.5 Manufacturer / Installer Qualification

- .1 Manufacturer / Installer must be recognized as specializing in the manufacture and installation of Laboratory Casework, Laboratory Fume Hoods and /or Chemical Storage Cabinets:
 - .1 be a member of SEFA (Scientific Equipment and Furniture Association);
 - .2 have a 5 years' minimum experience in the industry;
 - .3 have a proven track record of on time delivery and installation of projects of similar scale and type.

1.6 Warranty

- .1 Three (3) years manufacturer's warranty for material defects, faulty workmanship, faulty installation, faulty functioning, including replacing and in-shop refinishing.

Part 2 Products**2.1 Performance**

- .1 The chemical storage cabinets must be factory and in-situ tested according to the Codes and Standards mentioned in McGill's Laboratories Design Guidelines for New or Renovated Spaces, and:
 - .1 Conform to function-specific requirements;
 - .2 Meet or exceed SEFA's requirements;
 - .3 Be factory and in-situ tested according to SEFA's procedures;
 - .4 Meet or exceed NFPA 30 – Flammable and combustible liquids code;
 - .5 Meet or exceed ULC C1275 – Storage cabinets for flammable liquid containers.

2.3 Materials

- .1 Pre-painted furniture grade Cold Rolled Steel (CRS):
 - .1 18 gauge (1,21mm/.048"CRS)
- .2 Paint finish: factory applied, chemical resistant thermosetting polyester enamel, sprayed applied by electrostatic process, and baked;
- .3 Stainless Steel: type 316, no 4 finish (satin);
- .4 Fasteners for interior and exterior: type 316 stainless steel, screws must be counter sink type, exposed fasteners are not acceptable;
- .5 High density polyethylene (HDPE): white, 6,4 mm thick (¼");
- .6 Melamine resin flat pressed board, plastic-coated on both sides, 19mm thick, in accordance with DIN 68765 (abrasion resistance S, coating grade 2 – coating greater than 0.14mm – emission rating E1).

2.4 Chemical cabinets:

- .1 Generalities:
 - .1 Metal construction preferably with same exterior finish as the fume hood, 18 gauge (1,21mm/.048"CRS, 1,27mm/.050"SS);
 - .2 Full height piano door hinges;
 - .3 Handle lockable at two positions, keying of lock as per the project requirements;
 - .4 Levelling bolt at each corner: 8mm x 38mm (5/16" x 1½") type 316 stainless steel threaded bolt;
 - .5 All fasteners: stainless steel.

- .2 Flammable liquids (solvents) cabinets:
 - .1 Painted yellow;
 - .2 Self-closing/latching with a fusible link (70°C (160°F));
 - .3 Marked with “ATTENTION - PRODUITS INFLAMMABLES – GARDER LOIN DU FEU” and “WARNING – FLAMMABLES – KEEP FIRE AWAY”

- .3 Acids cabinets
 - .1 Metal acids cabinets:
 - .1 Painted Blue;
 - .2 Interior and doors lined with a one piece molded chemical resistant high density polyethylene (HDPE) liner;
 - .3 With adjustable high density polyethylene (HDPE) shelf (three integral shelf position);
 - .4 Bottom of inside liner with integrated seamless edge to prevent leakage to the exterior, 6.4 mm (¼”) high;
 - .5 Air grilles at top and bottom of each door;
 - .6 Marked with “ACIDES – DANGER– ACIDS”
 - .2 Melamine-faced acids cabinets:
 - .1 Made of a melamine resin flat pressed board, which is plastic-coated on both sides, 19mm thick, in accordance with DIN 68765 (abrasion resistance S, coating grade 2 – coating greater than 0.14mm – emission rating E1);
 - .2 The rear wall should be notched made of the same material, 10mm thick;
 - .3 The rear panel in the cabinet interior shall additionally be designed as a baffle. When a grid width is greater than 600mm, the shelves and lower base are made of coated OSB board (22mm thick);
 - .4 Trays to store the reagents shall be made of Polypropylene and the surface load carrying capacity is 30kg. The shelf and the shelf bracket should be connected geometrically with each other in a fashion so that completely pulling out the shelf can be effectively avoided;
 - .5 The load capacity of every shelf bracket is, 50kg min;
 - .6 Internal hinges are powder coated to avoid corrosion;
 - .7 Marked with “ACIDES – DANGER– ACIDS”

**2.5****Preferred Products**

- .1 The threshold level of compliance with the Furniture Emissions Evaluation standards listed in 01 84 19 Part 4 must be met by 100%.
- .2 For products with low VOC emissions that may contribute to LEED® v4 EQ Credit Low-Emitting Materials, refer to:
 - .1 SCS Global Services <https://www.scsglobalservices.com/certified-green-products-guide>
 - .2 Intertek <http://www.intertek.com/furniture/etl-environmental-voc-certified/>

- .3 Refer to 09 91 26 for preferred painting products, and 01 84 19 Part 2 for wet-applied products emissions evaluations.

Part 3 Installation

3.1 Chemical storage cabinet installation

The chemical storage cabinets must be levelled (1.5mm/3m ($1/16$ " in 10'-0") maximum deviation tolerance).

END OF SECTION