

**Section 4: FLAMMABLE LIQUID STORAGE CABINETS**

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## ASU Laboratory Standard &amp; Design Guide

**A. Regulations, Standards and References**

IFC Chapter 50 and 57, 2012 Edition

NFPA 30 and 99

Any applicable references from all chapters and standards from IFC, NFPA, or Arizona State Statute applies

**B. Scope**

1. Flammable liquid storage cabinets are intended for the storage of flammable and combustible liquids. This Guide applies to all Arizona State University facilities, including leased properties. It covers the design, construction, and installation of Flammable Liquid Storage Cabinets; the Guide does not address the proper use of Flammable Liquid Storage Cabinets.
2. Deviations from the Design Guideline must be reviewed and approved by EHS.
3. This document does not relinquish the owner or contractor from adhering to any and all applicable codes and standards for this project, requirements presented by the ASU Environmental Health and Safety (EHS), and including the requirements set forth in the ASU Design Guidelines.

**C. Design**

1. Flammable Liquid Storage Cabinets must be UL listed and must meet Arizona State University Fire Marshal specification requirements.
2. All cabinets must be UL listing and have EH&S approval to assure minimum level of quality consistent with code requirements, university requirements and good practice. All cabinets must have ASU Fire Marshal review of all installations/use and approve all installation/use to assure compliant with installation, ventilation, exposure control and maximum allowable quantities control per control zone, per physical and health hazard categories.
3. Where flammable liquid storage cabinets are required, they shall be designed such that they do not exceed 120 gallons for the combined total quantity of all liquids (i.e., Classes 1, 2, and 3).
4. One or more Flammable Liquid Storage Cabinets are required for laboratories which store, use, or handle 10 or more gallons of flammable or combustible liquids (combined).

**D. Labeling**

1. Flammable Liquid Storage Cabinets shall be conspicuously labeled in red letters on contrasting background "FLAMMABLE - KEEP FIRE AWAY."
2. Any signage must be reviewed and approved by the ASU Fire Marshal's Office, University

## Flammable Liquid Storage Cabinets Requirements

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Architect's ASU Laboratory Standard & Design Guide Office, and coordinated  
through our Shop. Facilities Management Sign

3. When flammable or combustible liquids present multiple hazards, the laboratory design shall address the storage requirements for each hazard.
4. This must be reviewed by the ASU Fire Marshal and EHS Laboratory Safety staff and approved with any stipulations to meet university specifications for storage and use.

**E. Construction**

1. New Flammable Liquid Storage Cabinets must be constructed of steel.
2. Wood cabinets are not UL listed or EH&S approved.
3. Flammable Liquid Storage Cabinets shall be constructed as follows:
  - a. Minimum wall thickness of 0.044 inches (18 gauge).
  - b. Double walled construction with a minimum air gap of 1-1/2-inches between the walls including the door, top, bottom, and sides.
  - c. Tight-fitting joints, welded or riveted.
  - d. Liquid-tight bottom with a door sill of at least 2 inches.
  - e. Three-point latch on doors.
4. Cabinet doors shall be self-closing and self-latching.
5. Flammable Liquid Storage Cabinets are not required to be vented except for odor control of malodorous materials. Vent openings shall be sealed with the bungs supplied with the cabinet or with bungs specified by the manufacturer of the cabinet. If vented, cabinet should be vented from the bottom with make-up air supplied to the top. It shall be vented outdoors to an approved location or through a flame arrester to a fume hood exhaust system. Construction of the venting duct should be equal to the rating of the cabinet.

**F. Location**

1. Flammable Liquid Storage Cabinets shall NOT be located near exit doorways, stairways, or in a location that would impede egress.
2. Flammable Liquid Storage Cabinets must NOT be wall mounted.
3. Wall mounted cabinets are not UL Listed or Fire Marshal Approved.
4. Laboratory design must ensure that Flammable Liquid Storage Cabinets are NOT located near an open flame or other ignition source.