Design Guideline 104400
Fire Extinguishers

Scope

In general, follow the guidelines below when specifying fire extinguishers and fire extinguisher cabinets.

Related Sections

U-M Design Guideline Sections:
5.7 SBA Unit Substation Rooms
6.1 DG140000 Conveying Systems – General Requirements
6.2 DG210000 Fire Protection

Requirements of Regulatory Agencies

Perform all work in accordance with applicable codes, the State of Michigan Building Code, MIOSHA General Industry Safety Standards (Part8, Portable Fire Extinguishers), the NFPA 101 Life Safety Code (where applicable), and NFPA 10 Standard for Portable Fire Extinguishers.

University of Michigan does not accept code exceptions for fire extinguisher installation. Fire extinguishers shall be installed throughout all University buildings. Any deviations from this direction shall be reviewed and approved by OSEH, University Fire Safety Services.

Extinguisher mounting height to conform to the American with Disabilities Act (ADA) Guidelines and State of Michigan Barrier Free Requirements.

General Design Requirements Fire Extinguishers

Types of fire extinguishers:

1. ABC multipurpose dry chemical
    a. Provide UL-listed 4-A; 60-BC, 10-lb. nominal capacity, in enameled steel container.
2. BC carbon dioxide
    a. Provide UL-listed 10-BC, 10-lb. nominal capacity, enameled metal container.
3. “Class K” wet chemical
    a. Provide UL-listed, 6 or 9 liter capacity, stainless steel container, with wall-mounted instructional placard.
4. “Class D” dry powder
    a. Provide FM-approved, in enameled steel container, appropriately sized for the hazard being protected.

Other types of extinguishers (water under pressure, halon agent, aqueous film forming foam, wheeled extinguishers) may be appropriate for specific hazards that are not typically found on campus, but that

could be associated with a particular project (such as electrical power generating stations, heliports, indoor solid-fuel cooking appliances, etc.) The UM Design Manager and University Fire Marshal should be consulted regarding proper extinguisher selection for unusual applications.

Design professional to determine the appropriate applicable location for each extinguisher based on applicable codes and standards.

Specify units with the following characteristics:

Metal bodies, valve assemblies, discharge levers and carrying handles. Plastic or composite materials are not acceptable in these applications.

Rubber hoses. Fully rechargeable.

UL-listed, bearing UL "Listing Mark" for extinguisher type, rating, and classification.

Design Requirements Fire Extinguishers Cabinets and Mounting Brackets

Fire Extinguisher Cabinets can be fully recessed, semi recessed or surface mounted depending on location and code requirements.

- Size: To suit the type of unit being housed, but not less than 12 inches by 27 inches by 8 inches tub interior.
- Door and Frame Finish: Satin Stainless Steel
- Window: Approx. 2 inches by 24 inches, ¼ inch clear acrylic.
- Signage: Identify extinguisher cabinets with manufacturer's standard red lettering applied to cabinet door, spelling "FIRE EXTINGUISHER". Letter size, style and location selected by Design Professional.
- Locking fire extinguisher cabinets should not be used. If locking cabinets are desired based on an identified theft or vandalism concern, the UM Design Manager and University Fire Marshal should be consulted.

Mounting Brackets: Provide units designed to hold specified extinguishers. Mount brackets with expansion anchors to withstand a 200 pound load applied in any direction.

Signage: Identify bracket-mounted extinguishers with red letter decals with clear backgrounds, spelling "FIRE EXTINGUISHER" applied to wall surface or with three-dimensional projecting signs attached to the wall surface. Identify column-mounted extinguishers with red letter decals with white backgrounds, spelling "FIRE EXTINGUISHER" applied to the other column surface. Letter size, style and location selected by design professionals.

Application

In addition to providing units in accordance with code requirements, provide a 4A:60BC, 10 pound (nominal) capacity unit in each individual laboratory. Mount units next to laboratory exit doors, in full view.