I. PURPOSE
This policy establishes a guideline for the proper placement, sizing, and type of portable fire extinguisher to be used in the different hazard areas in all University of Rochester buildings.

II. PERSONNEL AFFECTED
This policy will affect the Fire Safety Unit.

III. DEFINITIONS

**Carbon Dioxide (CO2)** - A color, odorless, electrically non-conductive inert gas that is a suitable medium for extinguishing Class B and Class C fires.

**Class A Fires** - Fires in ordinary combustible materials, such as wood, cloth, paper, rubber, and many plastics.

**Class B Fires** - Fires in flammable liquids, combustible liquids, petroleum greases, tar, oils, oil-based paints, solvents, lacquers, alcohols, and flammable gasses.

**Class C Fires** - Fires that involve energized electrical equipment.

**Class D fires** - Fires in combustible metals such as magnesium, titanium and sodium.

**Class K Fires** - Fires in cooking appliances that involve combustible cooking media (vegetable or animal oils and fats)

**Clean Agent** - Electrically non-conducting, volatile, or gaseous fire extinguisher that does not leave a residue upon evaporations.

**Dry Chemical** - A mixture of finely divided solid particles, usually sodium bicarbonate, potassium bicarbonate, or ammonium phosphate-based with added particulate material supplemented by special treatment to provide resistance to packing and moisture absorption, and to promote proper flow. (For sizes and ratings see section VII part B)

**Dry Powder** - Solid materials in powder or granular form designed to extinguish Class D fires by crusting, smothering, or heat-transfer means. (For sizes and ratings see section VII part B)

**Halogenated Agents:**

- **Halocarbons** - Include HCFC, HFC, PFC, FIC Halon replacement agents. (For sizes and ratings see section VII part B)
- **Halon** - Are inert, and non-conductive gases used to extinguish fires by cooling the burning materials (For sizes and ratings see section VII part B)

**Travel Distance** - The Actual walking distance from any point to the nearest fire extinguisher fulfilling hazard requirements.

**Wet Chemical** - Wet chemicals include, but are not limited to, potassium carbonate, potassium citrate and are used as fire suppression agents. (For sizes and ratings see section VII part B)

**Portable Fire Extinguishers** - A portable device carried or on wheels and operated by hand, containing an extinguishing agent that can be expelled under pressure for the purpose of suppressing or extinguishing a fire.
Water Mist Fire Extinguisher- A water type portable fire extinguisher containing distilled water and employing a nozzle that discharges the agent in a fine spray. (For sizes and ratings see section VII part B)

Water Extinguisher- A portable fire extinguisher that contains water under pressure and employing a straight tip nozzle that discharges the agent in a straight stream. (For sizes and ratings see section VII part B)

Light (low) Hazard- locations where the total amount of Class A combustible materials, including furnishings, decorations and contents are of minor quantity. Small amounts of Class B flammables used for duplicating machines provided that they are kept in closed containers and stored safely.

Ordinary (moderate) Hazard- Locations where the total amount of Class A combustibles and Class B flammables are present in greater amounts than expected under Light (Low) Hazard.

Extra (High) Hazard- Locations where the total amount of Class A combustibles and Class B flammables are present in greater amounts than expected under Light (Low) Hazard. Both in storage, production use and/or finished product over and above those expected and classed as Ordinary (moderate) Hazards.

IV. RESPONSIBILITIES

A) The Fire Safety Specialist/Inspector is responsible for the proper selection sizing and placement of portable fire extinguishers in new construction and newly renovated areas. As well, the Fire Safety Inspector will be responsible for re-evaluating extinguisher placement for areas that have undergone a change in occupancy or use.

B) The chart found in Section VII part B designates responsibility for monthly “Quick Checks”, which can be found in Section VII part A.

V. PROCEDURES

A) Placement and Sizing for Class A Hazards Per NFPA 10 standard:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Light (low) Hazard Occupancy</th>
<th>Ordinary (moderate) Hazard Occupancy</th>
<th>Extra (High) Hazard Occupancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum rated single extinguisher</td>
<td>2-A</td>
<td>2-A</td>
<td>4-A</td>
</tr>
<tr>
<td>Maximum floor area per unit of A</td>
<td>3,000 ft sq</td>
<td>1,500 ft sq</td>
<td>1,000 ft sq</td>
</tr>
<tr>
<td>Maximum floor Area for Extinguisher</td>
<td>11,250 ft</td>
<td>11,250 ft</td>
<td>11,250 ft</td>
</tr>
<tr>
<td>Maximum travel distance to extinguisher</td>
<td>75 ft</td>
<td>75 ft</td>
<td>75 ft</td>
</tr>
</tbody>
</table>

B) Placement and Sizing For Class B Hazards Per NFPA 10 standard:

<table>
<thead>
<tr>
<th>Type of Hazard</th>
<th>Basic Minimum Extinguisher Rating</th>
<th>Maximum Travel Distance to Extinguisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light (low)</td>
<td>5-B</td>
<td>30 Feet</td>
</tr>
</tbody>
</table>
C) Fire extinguishers with a Class C rating shall be required where energized electrical equipment may be directly involved in a fire and or be with in the immediate vicinity of a fire. Placement and sizing of extinguishers for Class C fires will be based on the anticipated Class A or Class B hazard.

D) Fire extinguishers for Class D fires shall be located so that travel distance from the Class D hazard to the extinguisher does not exceed 75 feet. Extinguisher size shall be based on the type of combustible metal, its particle size, and area to be covered as well as recommendations from the extinguisher’s manufacture.

E) Class K fire extinguishers shall be placed so that travel distance from the hazard to the extinguisher, does not exceed 30 feet.
   a. Class K extinguishers shall be placed in all food preparation areas that utilize commercial cooking equipment involving vegetable or animal oil and fats.
   b. Class K extinguishers shall be placed in conjunction with a Type I kitchen hood system to provide secondary protection to the hoods suppression system.

F) Extinguisher for business occupancies (office areas) will be based upon NFPA standards for Light (low) Hazard occupancies.

G) Special Hazard Areas:
   Are still required to adhere to the minimum requirements of extinguisher size and placement for Class A, B and C hazards. These areas contain specific hazards either to property or life that necessitate the placement of specialized portable fire extinguishers.
   a. Extinguisher type and placement for Intensive Care Units (ICU), and Operating Rooms:
      i. Water Mist extinguisher shall be placed in all ICU’s and OR’s phasing out Halogenated and CO2 extinguishers in an effort to provide safe and reliable protection to patients.
      ii. Water Mist extinguishers have a 2A-C rating making them safe for use around energized electrical equipment and pose no health hazards to patients or user.
   b. Extinguisher type and placement for Magnetic Resonance Imaging (MRI) rooms:
      i. Water Mist extinguishers shall be phased into all MRI areas replacing halogenated extinguishing agents.
      ii. Water Mist extinguishers are safer for use around patients.
      iii. As well, all Water Mist extinguishers in production by Amerex® are non-ferrous and safe for use around MRI equipment.
c. Extinguisher type and placement for Radiology areas:
   i. Water Mist extinguisher shall be placed in all Radiology areas phasing out Halogenated and CO2 extinguishers in an effort to provide safe and reliable protection to patients, as well as protecting high cost equipment.

d. Research laboratories will not necessarily be required to have an extinguisher inside of the room, if there is sufficient coverage from extinguishers placed in the corridor.
   i. Exceptions:
      - An outside regulatory agency requires extinguishers be placed inside the laboratory for the work that is being done
      - There is a sufficient risk involved with the work being done within and the University Fire Marshal’s Office determines an extinguisher is needed.

e. Extinguisher type and placement for mechanical equipment rooms:
   i. Mechanical rooms shall be equipped with either a dry chemical or CO2 extinguisher properly sized for the hazard of the occupancy. (Most mechanical rooms are assessed as ordinary hazards)

f. Extinguisher type and placement for Telecommunication equipment rooms:
   i. Shall be protected by extinguishers containing a Halogenated extinguishing agent to protect the equipment from further damage should the extinguisher need to be used.
   ii. With the phase out of Halon 1211 and 1301, clean agents (Halotron I, FE-36) with similar properties to Halon, which are safe for the ozone, are being introduced.

g. Exceptions to extinguisher requirements:
   i. Assembly Group A occupancies equipped throughout with quick-response sprinklers, fire extinguishers shall be required only in special hazard areas.
   ii. Business Group B occupancies equipped throughout with quick-response sprinklers, fire extinguishers shall be required only in special hazard areas.
   iii. Assembly Group A-5 occupancies intended for the participation in or viewing outdoor activities the travel distance to reach an extinguisher shall not apply to the spectator seating portions.

h. Obsolete Fire Extinguishers
   i. The NFPA 10 2013 edition has added to the list of obsolete fire extinguishers. These additions include the following:
I) Pressurized water fire extinguishers manufactured prior to 1971
2) Any stored-pressure extinguisher manufactured prior to 1955
3) Any extinguisher with 4B, 6B, 8B, 12B, and 16B fire ratings
4) Dry chemical stored pressure extinguishers manufactured prior to October of 1984

VI. REFERENCES
2) State Fire Code of New York State, Chapter F6 Building Services and Systems F609, Commercial Kitchen Hoods
4) Fire Code of New York State, F9 Fire Protection Systems, F906 Portable Fire Extinguishers
6) Ansul® Water, Cleangaurd, Dry chemical, and Carbon Dioxide extinguisher specification sheets.
7) OSHA 1910.157

VII. APPENDICES/FORMS
A. Portable Fire Extinguisher “Quick Checks” procedure –
http://www.safety.rochester.edu/fire/ExtinguisherQuickChecks.html

B. Building Listing

<table>
<thead>
<tr>
<th>Fire Safety Inspector Responsible for:</th>
<th>Fire Safety Inspector Responsible for:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RIVER CAMPUS-ACADEMIC</strong></td>
<td><strong>RIVER CAMPUS - RESIDENTIAL LIFE</strong></td>
</tr>
<tr>
<td>612 Wilson Blvd. (Department of Public Safety)</td>
<td>Alpha Delta Phi</td>
</tr>
<tr>
<td>685 Mt. Hope Ave. (EH&amp;ES)</td>
<td>Anderson Tower</td>
</tr>
<tr>
<td>Advancement (Alumni Advancement Center - AAC)</td>
<td>Burton Hall</td>
</tr>
<tr>
<td>Beach &amp; Lamb Hall</td>
<td>Crosby Hall</td>
</tr>
<tr>
<td>BMEQ /Geargen Bldg.</td>
<td>Delta Kappa Epsilon</td>
</tr>
<tr>
<td>Computer Studies Building - Carlson Library</td>
<td>Douglass Leadership House (formerly Delta Upsilon)</td>
</tr>
<tr>
<td>Fawer Stadium</td>
<td>Drama Center</td>
</tr>
<tr>
<td>Frederick Douglass Commons</td>
<td>Gilbert Hall</td>
</tr>
<tr>
<td><strong>MEDICAL CENTER/ESM/MAG</strong></td>
<td><strong>SMH</strong></td>
</tr>
<tr>
<td>Children’s School at UMMC (day care)</td>
<td>3000 Area</td>
</tr>
<tr>
<td>Data Center - 300 Science Park</td>
<td>5000 Tower</td>
</tr>
<tr>
<td>Eastman School of Music</td>
<td>6-4300</td>
</tr>
<tr>
<td>Eastman Community SLC</td>
<td>1-5500</td>
</tr>
<tr>
<td>Eastman Main Building</td>
<td>5-3200</td>
</tr>
<tr>
<td>ESM Messinger Hall</td>
<td>Access Center</td>
</tr>
</tbody>
</table>
UNIVERSITY OF ROCHESTER
ENVIRONMENTAL HEALTH & SAFETY

Policy No.: FS004
Title: Selection and Placement of Fire Extinguishers
Revision No.: 7
Page 6 of 8
Approved by: Mark Cavanaugh
Prepared by: Mark Militello

Greeley Hall
Hillcourt (FSI) - 6 bldgs

Geneva Hall
Chambers House

Goergen Athletic Center - count as 3 bldgs
Fairchild House

Hoje Akam Gym
Gale House

Jewett Center/Field House
Kendrick House

Lakefront
Munro House

Grounds Building (512, 514, 516) (UFS Annex)
Siler House

Grounds gas Island
Hoeing Hall

Harkness Hall
Lowry Hall

Hazardous Waste Building
O’Brien Hall

Heppane Engineering Building
Peli Upson

Hayes Hall
SBA Halls - count as 1 bldg

Hitchcock Hall (Habibell & Lander Aud.)
Danforth Dining Ctr

Hylan Building
Gannett Hall

Interfaith Chapel
Gates Hall

Lattimore Hall
Hollister Hall

LaChance Hall (Werner School)
Morgan Hall

Melani Hall
Sigma Alpha Mu

Meyre Hall
Sigma Chi (FSI)

Rettner Hall (MAIC)
Sigma Epsilon House (formerly CLC/Quad Annex)

Rush Rhees Library
Theta Chi

Sage Art Center
Tiemman Hall

Schlegel Hall (includes Gleason Hall)
Wilder Tower

Spurrier Hall

Strong Auditorium

Taylor Hall

Todd Union

University Facilities Services (UFS/UFC)

University Health Service

Wallis Hall (aka Administration Bldg)

Wegman Hall

Wilmot Annex (aka NYS Ctr for Adv. Technology)

Wilmot Building

Wilson Commons

6/10/2019

Occupants Responsible for:

RIVER CAMPUS-ACADEMIC
575 Mt. Hope Ave. (Office of Comm Development- FACILITIES)
Brooks Landing (Cohort Group)

590 Mt. Hope Ave. (Investment Office-FACILITIES)
delKiewiet Tower (Rochester Mgmt)

668 Mt. Hope Ave. (Elmwood & Berry Bldg-FACILITIES)
Galer House (Rochester Mgmt)

** FSU to conduct annuals on 575/590/630/668/685
& 692 Mt. Hope

RIVER CAMPUS - RESIDENTIAL LIFE
630 Mt. Hope Ave. (President’s House- FACILITIES)

692 Mt. Hope Ave. (President’s House-FACILITIES)

5250 Mt. Hope Ave. (Mail Services) (Rochester Mgmt)

Graduate Mohonetties-3 bldgs (SLL) (Rochester Mgmt)

Riverview (Somerset)

University Park - 33 bldgs (Rochester Mgmt)

Valentine Tower (Rochester Mgmt)

Whipple Park - 9 bldgs (Rochester Mgmt)

ERIC FSC Responsible for:

SMH FSC Responsible for:

RIVER CAMPUS-ACADEMIC

RIVER CAMPUS - RESIDENTIAL LIFE

MEDICAL CENTER/ESM/MAG

SMH

630 Mt. Hope Ave. (President’s House- FACILITIES)

Brooks Landing (Cohort Group)

Behavioral Health (315 Science Park)

Behavioral Health (R-Wing/Psychiatry)

Broome Child Advocacy Center (BACH)

Cardiology/Cardiology Rehab (S. Clinton)

Clinical Lab (474 Collins St., Avon)

Clinical Lab (2 Ryan Drive, Geneseo)

Clinical Lab (800 Ayrault Rd., Fairport)

Clinical Lab (2300 W. Ridge Rd., Greece)

Clinical Lab (400 Red Creek, Henrietta)

Clinical Lab (3509 Thomas Drive, Lakeside)

Clinical Lab (6026 Hilton Parma Corners Rd., Hilton)

Clinical Lab (809 E. Ridge Road, Irondequoit)

Clinical Lab (1026 Hilton Parma Corners Rd., Hilton)

Gates Hall

Eastman Dental Center

AMBULATORY SURGICAL CENTER (Sawgrass Dr.)

Ambulatory Surgical Center (Sawgrass Dr.)

RIVER CAMPUS-ACADEMIC

RIVER CAMPUS - RESIDENTIAL LIFE

MEDICAL CENTER/ESM/MAG

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Clinical Lab (809 E. Ridge Road, Irondequoit)

Clinical Lab (1026 Hilton Parma Corners Rd., Hilton)
### C. Extinguisher Ratings

<table>
<thead>
<tr>
<th>Extinguisher Size</th>
<th>2 1/2 gal</th>
<th>5lbs</th>
<th>10lbs</th>
<th>15lbs</th>
<th>20lbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extinguishing Agent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td>2A</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Water Mist</td>
<td>2A:C</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>n/a</td>
<td>5B:C</td>
<td>10B:C</td>
<td>10B:C</td>
<td>10B:C</td>
</tr>
</tbody>
</table>
**VIII. REVISION HISTORY**

<table>
<thead>
<tr>
<th>Date</th>
<th>Revision No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/20/2011</td>
<td>1</td>
<td>Updated building listing</td>
</tr>
<tr>
<td>6/1/2012</td>
<td>2</td>
<td>Updated Portable Fire Extinguisher “Quick Checks”</td>
</tr>
<tr>
<td>10/30/2013</td>
<td>3</td>
<td>Updated building listing and added Clean Agent extinguisher information</td>
</tr>
<tr>
<td>3/19/2014</td>
<td>4</td>
<td>Added OSHA 1910.157 as a reference</td>
</tr>
<tr>
<td>7/29/2015</td>
<td>5</td>
<td>Updated building listing</td>
</tr>
<tr>
<td>6/21/2016</td>
<td>6</td>
<td>Updated building listing and removed sprinkler exemptions</td>
</tr>
<tr>
<td>6/10/2019</td>
<td>7</td>
<td>Triennial review and added new RC buildings</td>
</tr>
</tbody>
</table>

*Extinguisher ratings may vary between different manufacturers despite the use of the same extinguishing agent. An extinguisher rating should always be verified prior to placement and use of the extinguisher.*

*No number is assigned to the rating of Class D, Class K, or Class C extinguishers*