



A UTC Fire & Security Company

Badger Fire Protection
www.badgerfire.com

TECHNICAL BULLETIN

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Subject: Commercial Kitchen Hand Portable Fire Extinguisher Requirements

The minimum fire protection requirements for commercial kitchen cooking operations are primarily covered in NFPA-96 the standard for "Ventilation Control and Fire Protection of Commercial Cooking Operations". This standard addresses kitchen cooking equipment requirements for public and private cooking operations, except single dwelling units where residential equipment is being used. In the 2008 edition of this standard, Chapters 10 and 14 contain the following hand portable fire extinguisher references.

NFPA-96 Fire Extinguishing Equipment-Portable Fire Extinguishers

- 10.2.1 Fire extinguishing equipment shall include both automatic fire extinguishing systems as primary protection and portable fire extinguishers as secondary backup.
- 10.2.2 A placard identifying the use of the extinguisher as a secondary backup means to the automatic fire extinguishing system shall be conspicuously placed near each portable fire extinguisher intended to be used for protection in the cooking area.
- 10.10.1 Portable fire extinguishers shall be installed in kitchen cooking areas in accordance with NFPA-10 and shall be specifically listed for such use.
- 10.10.2 Extinguishers shall use agents that saponify upon contact with hot grease such as sodium bicarbonate and potassium bicarbonate dry chemical and potassium carbonate solutions. (Note: NFPA-10 only recognizes Class K listed portable extinguishers.)
- 10.10.3 Class B gas-type portables shall not be permitted in kitchen cooking areas.
- 10.10.4 Manufacturer's recommendations shall be followed.
- 10.10.5 Other fire extinguishers in the kitchen area shall be installed in accordance with NFPA-10.

NFPA-96 Fire Extinguishing Equipment for Solid Fuel Cooking

- 14.7.5 Listed fire-extinguishing equipment for solid fuel-burning cooking appliances, where required, shall comply with chapter 10 and shall use water based agents.
- 14.7.6 Fire extinguishing equipment shall be rated and designed to extinguish solid fuel cooking fires, in accordance with the manufacturer's recommendations.
- 14.7.7 The fire-extinguishing equipment shall be of sufficient size to totally extinguish fire in the entire hazard area and prevent re-ignition of the fuel.
- 14.7.8 All solid fuel appliances (whether or not under a hood) with fire boxes of 5 cubic feet volume or less shall at least have a 2A rated water spray extinguisher or a 6L (1.6 gal) wet chemical extinguisher listed for Class K fires in accordance with NFPA-10 in the immediate vicinity of the appliance.

Besides establishing minimum fire extinguisher protection recommendations for various occupancy types and fire classifications, the NFPA-10 "Portable Fire Extinguisher" standard specifically recognizes cooking appliance hazards. A new fire classification was established to better address commercial kitchen cooking appliances.

(Continued on Next Page)

Class K fire hazards are specifically identified as those fires in cooking appliances that involve combustibles cooking media. NFPA-10 requires Class K listed and labeled fire extinguishers for the protection of cooking appliance hazards. The maximum travel distance between the extinguisher and the appliance hazard shall not exceed 30 feet and an instructional placard is to be posted at this extinguishers location, stating the fire protection system shall be activated prior to using the extinguisher. (2010 NFPA-10 paragraphs 5.5.5, 5.5.5.3 and 6.6.2)

To properly address the other class "A", "B" and "C" fire hazards typically found within kitchen cooking areas, various NFPA-10 extinguisher requirements must be referenced. NFPA-10 specifically identifies cooking areas as "High Hazard" occupancies and various minimum 4A:40B:C fire rating requirements must be addressed within cooking area occupancies. (2010 NFPA-10 paragraphs, 1.1.2, 5.4.1, 5.4.2, 6.2.1.1, 6.3.1.1 and 6.4.1)

Based on many years of experience, Badger Fire Protection is happy to provide the following minimum fire extinguisher selection and placement suggestions within commercial kitchen cooking areas.

Protection of Commercial Kitchen 'Cooking Area Occupancies'

For the protection of any class "A", "B" and "C" fire hazards within a kitchen cooking occupancy, Badger suggests its 4A:80B:C rated 10 pound "multipurpose" dry chemical fire extinguisher model be selected and placed so coverage travel distances do not exceed 50 feet.

Protection of Commercial Kitchen 'Cooking Appliance Hazards'

- (a) For the protection of cooking appliances protected by wet chemical fire suppression systems, Badger recommends a Class K rated WC-100 extinguisher model having a minimum 6 liter capacity of agent be placed and placarded, so the maximum travel distance to any cooking appliance not exceed 30 feet.
- (b) For the protection of any cooking appliance not protected by a UL-300 listed fire suppression system, Badger recommends the larger WC-250 class K rated model having 2.5 gallons of agent be selected and placed so the maximum travel distance to any appliance not exceed 30 feet. (Because there may be no suppression system to automatically shut down heat and power to the cooking appliance, operators must be instructed to turn off all appliance heat and power prior to attempting use of class "K" extinguishers.)
- (c) For the protection of solid fuel cooking appliances containing up to 5 cubic feet of solid fuel protected with liquid fire suppression systems, Badger recommends the selection of either (2) WC-100 class K rated 6 liter models or a single WC-250 class K rated 2.5 gallon model be selected.
- (d) For the protection of solid fuel cooking appliances containing up to 5 cubic feet of solid fuel that are not specifically protected by a liquid fire suppression system, the minimum selection of (2) WC-250 class K rated 2.5 gallon models is recommended.

Badger also strongly suggests, special fire extinguisher training instruction be provided to kitchen employees stressing the importance that electric power, heat and fuel to the cooking appliance be properly shutdown prior to initiating the use of class K extinguishers on cooking appliances.

Extinguisher installers should always check with the local authority having jurisdiction prior to installing fire extinguishers to ensure there are no additional local compliance requirements.

Additional product information and bulletins regarding Badger fire extinguishers are also available through the Badger web site at www.badgerfire.com.