BOARD POLICY

EMERGENCY EYEWASH AND EMERGENCY SHOWERS

(Enacted February 7, 2018)

Background: The purpose of this policy is to address a minor inconsistency within the Board's regulations governing emergency eyewashes and showers. Specifically, 248 CMR, by way of a reference to 527 CMR, adopts an industry standard which appears to conflict with a component of the plumbing code. Per 248 CMR 10.13 (1) (l) 7. [with regards to Emergency Eyewash Stations]:

> "Existing laboratories shall be compliant with the most recent provisions of 527 CMR 10.02(2): *Fire Extinguishers"*

527 CMR 10.02(2) is adopted by the Board of Fire Prevention Regulations and states:

> "Drench/Deluge Showers, Hand Held Body/Face Washers and Deck Mounted Drench Hoses shall be installed in accordance with ANSI Z-358.1 and 248 CMR.

The inconsistency between 248 CMR and ANSI Z-358.1 is as follows:

248 CMR 10.13 (1)(l) 4 to 6 states:

> 4. The permanently mounted shower shall be capable of discharging a continuous spray at a rate of 30 gallons per minute and;
> 5. The systems shall be tempered to between 70 degrees F and 90 degrees F and be installed in a manner that prevents the stagnation of water in the piping that supplies permanently mounted showers and face/eye wash stations and;
> 6. An exception to the tempered water requirement is: in existing buildings where tempered water is inaccessible, cold potable water shall be permitted with prior permission of the fire prevention safety officer and the Inspector."

ANSI Z-358.1 allows a permanently mounted shower to discharge a minimum of 20 gallons per minute for 15 minutes at a temperature between 60 and 90 degrees.

It is the interpretation of the Board that the purpose behind the flow rate and temperature requirements is to prevent stagnation in piping servicing emergency eyewash and emergency showers. Further, it is the opinion of the Board that an installation in compliance with ANSI Z-358.1 generally meets this goal. Accordingly, the Board shall interpret the adoption of ANSI Z-358.1 by way of 248 CMR 10.13 (1)(l)7 as an alternate code compliant installation method which does not require compliance with 248 CMR 10.13 (1)(l) 4 to 6 when the following guidelines are adhered to.

The Policy will also clarify locations where emergency equipment is required:

248 CMR 10.13 (1)(l) 1. a. to c. states:

1. The systems shall be required in every school, college, university, or building laboratory newly constructed or renovated, or any room used for similar purposes wherein:
    a. corrosive or flammable liquids are handled;
    b. chemicals are stored or used; or
    c. where open flame devices are used.

OSHA requirements for emergency eyewashes and showers are found in 29 CFR, 1910.151 (c) and states:
Where the eyes of body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching of flushing of the eyes and body shall be provided within the work area for immediate emergency use.
If persons would not be exposed to injurious corrosive materials, as indicated in the Material Safety Data Sheets (MSDS) for each product, emergency equipment would not be required.

Summary: Under this policy, the Board is creating specific guidelines for the installation of emergency eyewash and emergency showers using tempered water and cold potable water which shall be deemed to comply with 248 CMR and its related adoption of ANSI Z-358.1. Additionally, this policy also creates guidelines for multiple fixture installations and to prevent stagnation of the potable water system supplying these fixtures

Policy:

I. New construction and/or substantial renovation projects consisting of six or more emergency fixtures where persons may be exposed to injurious corrosive materials.

A. A tempered water source shall be supplied in conjunction hot water generation and reduced in temperature to the ANSI Z-358.1 range (60 – 100 degrees F) by means of an adjustable tempering valve approved for emergency systems with domestic hot and cold makeup in order to insure a constant turnover of source water and prevent stagnation in the tempered water piping loop, and;

B. The tempered water loop piping for the emergency fixtures shall be capable of discharging a minimum of 20 gallons per minute for each emergency shower for 15 minutes with the system piping being sized for two emergency showers operating simultaneously, and;

C. The tempered water loop piping must be routed throughout the building in such a manner that supply piping to each emergency equipment fixture connection shall not exceed a developed length of 15 feet, and;

D. The permit holder shall provide the local plumbing & gas inspector

with a signed document from the owner or owner's agent assuring weekly flushing operation of each fixture as required by ANSI Z-358.1 and OSHA will be of long enough duration to empty the volume of supply water from the circulated tempered piping loop main to the fixture outlet.

E. Additional design features for emergency systems may be designed by a Massachusetts registered professional engineer. The design shall assure that the piping installation, including pipe sizing, dimension, and other aspects, meet the requirements for proper functioning and safety. Once the installation is complete but prior to final inspection, the installer must provide the Inspector with a written certification by a Massachusetts registered professional engineer that the installation complies with the design drawings and specifications. The Inspector shall not be responsible for approving or inspecting design specifications, but must ensure the installation adheres to the provisions of 248 CMR

II. Existing facilities and smaller renovation projects consisting of five or less emergency fixtures where persons may be exposed to injurious corrosive materials.

A. Whenever tempered water is available and may be utilized, the standards associated with new construction and substantial renovations shall apply.

B. Each Emergency showers shall be capable of discharging a minimum of 20 gallons per minute for 15 minutes with the system piping being sized for two emergency showers operating simultaneously, and;

C. The piping shall be installed in such a manner that supply piping from the main to each individual emergency equipment fixture connection shall not exceed a developed length of 15 feet, and:

D. The permit holder shall provide the local plumbing & gas inspector with a signed document from the owner or owner's agent assuring weekly flushing operation of each fixture as required by ANSI Z-358.1 and OSHA will be of long enough duration to empty the volume of supply water from the circulated tempered piping loop main to the fixture outlet.

E. Additional design features for emergency systems may be designed by a Massachusetts registered professional engineer. The design shall assure that the piping installation, including pipe sizing, dimension, and other aspects, meet the requirements for proper functioning and safety. Once the installation is complete but prior to final inspection, the installer must provide the Inspector with a written certification by a Massachusetts registered professional engineer that the installation complies with the design drawings and specifications. The Inspector shall not be responsible for approving or inspecting design specifications, but must ensure the installation adheres to the provisions of 248 CMR