

Maintenance and testing of portable fire extinguishers

About

In order to ensure that they are available and operate properly when needed, Minnesota State Fire Code (MSFC) 906 requires that hotels properly inspect, test and maintain their portable fire extinguishers.

Applicable standards

Minnesota State Fire Code 906.2 requires that portable fire extinguishers be inspected and maintained in accordance with NFPA 10, Standard for Portable Fire Extinguishers, 2010 Edition.

Visual inspections

Portable fire extinguishers are required to be visually inspected when initially placed in service and at least monthly thereafter. These visual inspections, intended to help ensure that each extinguisher is in its designated place and will operate if needed, can be performed by facility staff.

A pressure gauge in the “normal” or “operable” range is not a 100 percent guaranty that the extinguisher will perform as intended.

A broken seal, for example, may be an indication that someone has used the extinguisher and discharged a portion of the contents too small to affect the pressure gauge. NFPA 10, 7.2.2, therefore, requires that the monthly inspection verify a number of things including:

- Extinguishers are in their designated places
- There are no obstructions to access or visibility
- Safety seals are not broken or missing
- There is no evidence of physical damage, corrosion, leakage or clogged nozzle
- Pressure gauge readings are in the proper range or position
- Operating instructions are legible and facing outward
- Fullness – confirmed by weighing or lifting

Where circumstances warrant, some fire extinguishers may have to be inspected more frequently. Examples of such circumstances might include extinguishers that are oftentimes found obstructed during monthly inspections or extinguishers located in areas where they are subject to tampering, theft or mechanical injury.



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Obviously, any problems found during the monthly inspection must be corrected immediately. Some problems trigger a need for full maintenance or even replacement of the extinguisher. For example: Full maintenance procedures must be performed whenever an inspection of a rechargeable fire extinguisher reveals any of the following problems:

- Full maintenance procedures must be performed whenever an inspection of a rechargeable fire extinguisher reveals any of the following problems:
 - Operating instructions are not legible
 - Safety seals are broken or missing
 - Fullness can't be confirmed (as determined by weighing or lifting)
 - There is evidence of physical damage, corrosion, leakage or a clogged nozzle
 - Pressure gauge readings are not in the operable range or position

Maintenance

“Maintenance” is a thorough examination and repair, as needed, of your facility’s portable fire extinguishers and is covered in NFPA 10, 7.3. Maintenance is required at least once a year – more frequently when indicated by a routine monthly inspection, as discussed earlier. Maintenance is also required whenever extinguishers undergo hydrostatic testing.

Because maintenance is required to include a thorough examination of the mechanical parts, extinguishing agent and expelling means of each portable fire extinguisher, it must be performed by an approved extinguisher servicing company. A more detailed look at what annual maintenance entails can be found in NFPA 10. It should be noted that new tamper seals are required to be installed whenever maintenance is performed on rechargeable fire extinguishers.

Six-year maintenance

Every 6 years, stored pressure fire extinguishers that require a 12-year hydrostatic test (e.g. dry chemical extinguishers) must be emptied and proper maintenance procedures performed [see NFPA 10, 7.3.1.2.1]. The exception to this rule is nonrechargeable extinguishers, which are required to be removed from service 12 years from the date of manufacture. Again, this maintenance must be performed by an approved extinguisher servicing company.

Hydrostatic testing

At certain intervals, fire extinguishers are required to be pressure tested using water or some other noncompressible fluid to help prevent unwanted failure or rupture of the cylinder [see NFPA 10, Chapter 8].

This is called hydrostatic testing and includes both an internal and external examination of the cylinder. Because this testing requires special training and equipment, it needs to be performed by an approved extinguisher servicing company.



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Hydrostatic testing intervals for fire extinguishers are outlined in NFPA 10 8.3.1. Test intervals for some of the most commonly found extinguishers are as follows:

- Pressurized water, carbon dioxide and wet chemical extinguishers – every 5 years
- Dry chemical extinguishers – every 12 years

As mentioned earlier, the exception to the rule for hydrostatic testing is nonrechargeable stored pressure extinguishers (e.g. dry chemical extinguishers), which are required to be removed from service 12 years from the date of manufacture.

Documentation Requirements

Almost as important as conducting required inspection, testing and maintenance is documenting the fact that it occurred. NFPA 10 requires that these services be properly recorded. What follows is a brief synopsis of some of the major documentation requirements you need to be aware of.

Monthly inspections

NFPA 10, 7.2.4 requires that records be kept of all extinguishers inspected, including those needing corrective action. The date the inspection was performed and the initials of the person performing the inspection must be recorded on a tag or label attached to each extinguisher. As an alternate, the monthly inspections can be recorded on an inspection checklist maintained on file or in an electronic system that provides a permanent record.

Maintenance

Annual maintenance is also required to be recorded on a tag or label attached to each extinguisher that indicates the month and year the maintenance was performed and the name of the person or company performing the service. In addition to the tag or label, it is recommended that a permanent record be kept for each extinguisher that indicates at least the following:

- The date maintenance was last performed and by whom
- The date the extinguisher was recharged and by whom
- The date 6-year maintenance was last performed and by whom
- The date the extinguisher was hydrostatically tested and by whom

Six-year maintenance is required to be recorded on a metallic label, or similar durable material, affixed to each extinguisher that indicates the month and year the maintenance was performed, the initials or name of the person performing the service and the name of the company they represent. Old maintenance labels must be removed at the time any new labels are affixed to the extinguisher.

Recharging

When extinguishers are recharged, a tag or label must be attached to each extinguisher that indicates the month and year recharging was performed and the name of the person or company performing the service.



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In addition, each extinguisher that has undergone maintenance that includes an internal examination or has been recharged is required to have a “Verification of Service” collar installed around the neck of the extinguisher. The exception to this rule is carbon dioxide extinguishers that have been recharged without removal of the valve assembly.

The “Verification of Service” collar, usually made of plastic, serves as visual proof that the extinguisher was disassembled and maintenance performed. It must be of a type that cannot be removed without the removal of the valve assembly and must include the month and year the service was performed.

Sample extinguisher record

A sample extinguisher record has been developed to serve as a guide that you can use in creating your own record. A completed record is provided to serve as an example of how the record is expected to be filled out.

It’s important that at least two people in your facility know where the documentation on your facility’s fire extinguishers is kept to increase the likelihood that it can be readily provided if requested during an inspection. This documentation needs to be maintained for the life of the extinguishers.

Questions

Any questions related to this issue should be directed to the code specialist with the SFMD at 651-201-7221 or you can e-mail questions to fire.code@state.mn.us.

