



UNITED STATES COAST GUARD

U.S Department of Homeland Security

TOWING VESSEL SAFETY NOTICE

Towing Vessel National Center of Expertise

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Notice 02-12

Servicing of Shipboard CO2 Fire Suppression Systems

“What you don’t know can kill you”

This Safety Notice addresses servicing of CO2 fire suppression systems aboard towing vessels by referencing informative guidance, and discussing common issues.

The purpose of installing CO2 fire suppression systems is to protect spaces such as engine rooms, generator rooms, galleys, and paint lockers in the event of a fire. In many cases, companies rely on fire suppression service technicians to maintain, inspect, and test these systems.

Unfortunately, some service providers are not servicing systems in accordance with the National Fire Protection Association (NFPA) standards and/or the system’s Manufacturing Design, Installation, Operation and Maintenance Manual, as required by [46 CFR 27.100\(d\)](#).

It is critical that fire suppression systems function as designed when needed. Proper maintenance, inspection, and testing is most effective when conducted by trained personnel. Improper maintenance, inspection and servicing of these systems could lead to serious injury, death or vessel loss.



Guidance for design, installation, maintenance, inspection and testing of these systems can be found in the following references:

1. Nameplate or the Manufacturing Design, Installation, Operation and Maintenance Manual.
2. U. S. Code of Federal Regulations, Title 46 (Parts [25.30-15](#), [27.101](#), [27.303](#), [27.305](#), and [76.15](#))
3. [USCG Navigation and Vessel Inspection Circular 6-72](#), “Guide to Fixed Fire-Fighting Equipment aboard Merchant Vessels”.
4. [NFPA No. 12 titled “CO2 Fire Extinguishing Systems” \(latest edition\)](#).
5. [International Convention for Safety of Life at Sea \(SOLAS\), latest edition](#). (Applicable when SOLAS rules apply).

Issue #1 Service Technician Competency: There are no requirements for fire suppression service technicians to be licensed or certified by the Coast Guard or another regulatory authority to conduct inspections of fire suppression systems. Vessel owners and operators must ensure their contracted fire suppression service technicians are competent and properly certified by the manufacturer.

A properly trained fire suppression service technician will hold a training certification from the system manufacturer. Owner/operators should also ensure fire suppression service technicians follow the manufacturer’s service manual and applicable NFPA standards.

Issue #2 Crew Knowledge: Credentialed mariners are the single most critical component for ensuring that fire suppression systems are being properly maintained and tested. Crewmembers should have enough knowledge to verify that the system is being maintained, inspected, and tested properly and ready for immediate use. They are also required to be familiar with all of the vessel’s firefighting characteristics as per [46 CFR 15.405](#). A best practice would be to conduct fire suppression system training when technicians are aboard.

Issue #3 Checking Cylinder Levels: Some fire suppression service technicians continue to use liquid level indicators to verify the cylinder levels. Weighing cylinders is the only acceptable method to determine cylinder levels. Liquid level indicators are not an acceptable alternative and [Navigation and Vessel Inspection Circular 8-73](#), “Alternate Means of Determining the Weight of CO2 in Fire Extinguishing Systems”, has been cancelled.

Issue #4 Compare the Service Agreement with NFPA 12: Some fire suppression service technicians fail to conduct annual maintenance and operational tests in accordance with the requirements of NFPA 12. Companies need to ensure annual servicing conforms with NFPA 12 standards as follows:

- No changes to the size, type, and configuration of the hazard and system.
- Test all time delays for operation.
- View audible alarms and visual signals for operation.
- Observe proper warning signs are installed.
- Operationally test pressure switches for ventilation shutdown.
- Check proper operation of main stop valve and cylinder release from remote operating pull or pressure activation stations.
- Witness discharge flow through all nozzles.

Issue #5 Underway Servicing: Occasionally, fire suppression service technicians are servicing CO2 systems while towing vessels are underway. Since a fire suppression system must be disabled to be properly maintained, inspected and tested, a towing vessel will temporarily be at risk in the event of a fire. Vessel owner/operators should schedule servicing at times when the vessel is not underway and take steps to ensure fire suppression servicing technicians are not exposed to the hazards of an engine room underway, such as rotating machinery.