



SHIP SAFETY BULLETIN

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Subject: Hydrostatic testing of pressure containers under the *Vessel Fire Safety Regulations*

Scope

This bulletin applies to Canadian vessels that are of

- more than 15 gross tonnage; or
- 15 gross tonnage or less and carrying more than 12 passengers.

This bulletin **does not** apply to pleasure craft, fishing vessels or certain other vessel types listed in subsection 101(3) of the *Vessel Fire Safety Regulations* (VFSR).

Purpose

The VFSR set out requirements that must be met for hydrostatic testing of pressure containers (cylinders), such as fire-extinguishing agent bottles.

Section 1.49 of the *Transportation of Dangerous Goods Regulations* (TDGR) outlines the pressure cylinder marking and product approval requirements for transportation of pressure cylinders to shore facilities for refilling, exchanging or requalification from a Canadian-flagged vessel.

Details

Part 1 or Part 2 Vessels

Vessels must meet the operational readiness and maintenance requirements of the *International Convention for the Safety of Life at Sea* (SOLAS), Chapter II-2, including all guidelines and recommendations.

Keywords:

1. Hydrostatic testing
2. *Vessel Fire Safety Regulations*
3. Pressure container

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The VFSR also require grandfathered vessels that are subject to the *Fire Detection and Extinguishing Equipment Regulations* to comply with the same operational readiness and maintenance requirements. Consult subsection 106(3) of the VFSR.

Consult the International Maritime Organization (IMO) *Revised Guidelines on Maintenance and Inspection of Fire Protection Systems and Appliances* (MSC.1/Circ.1432). The document's annex contains hydrostatic testing requirements for

- fixed gas fire-extinguishing systems, other than carbon dioxide (CO₂) systems (section 10.1);
- water mist, water spray and sprinkler systems (section 10.2);
- fixed dry chemical powder systems (section 10.3);
- wheeled (mobile) fire extinguishers (section 10.5); and
- breathing apparatus (section 9.4).

Consult the IMO *Guidelines for the Maintenance and Inspections of Fixed Carbon Dioxide Fire-Extinguishing Systems* (MSC.1/Circ.1318). The annex contains hydrostatic testing requirements for fixed CO₂ fire-extinguishing systems.

Consult the IMO *Improved Guidelines for Marine Portable Fire Extinguishers* ([Resolution A.951 \(23\)](#)). The annex contains the hydrostatic testing requirements for portable fire extinguishers.

Cylinders for fixed fire-extinguishing systems must meet the marking requirements of the standards referred to in section 124 of the VFSR. The TDGR include an exemption for the transportation of cylinders used in fixed fire-extinguishing systems on board vessels, for the purpose of refilling, exchanging or requalification. Vessels must meet the conditions of section 1.49 of the TDGR in order to benefit from that exemption.

Part 3 Vessels

Vessels must maintain their pressure containers in accordance with the manufacturer's instructions and the standards to which the system is certified or approved.

Fixed **carbon dioxide** (CO₂) fire-extinguishing systems

- are subject to subsection 345(1) of the VFSR;
- are required under the *Standard on Carbon Dioxide Extinguishing Systems* (NFPA 12) to be hydrostatic tested
 - after 12 years of service; and
 - before recharging if 5 years have passed after the last test date.

Fixed **gas** fire-extinguishing systems (other than carbon dioxide systems)

- are required to be tested by following the requirements of the TDGR¹ and must meet either
 - subsection 346(1) of the VFSR and the *Standard on Clean Agent Fire Extinguishing Systems* (NFPA 2001); or
 - paragraph 347(1)(a) of the VFSR and the *Standard for Fixed Aerosol Fire-Extinguishing Systems* (NFPA 2010).

Where test intervals differ between the TDGR, the National Fire Protection Association or the manufacturer's requirements, you must use the most frequent interval.

Cylinders for fixed fire-extinguishing systems must meet the marking requirements of the standards referred to in subsection 339(3) of the VFSR. The TDGR include an exemption for the transportation of cylinders used in fixed fire-extinguishing systems on board vessels, for the purpose of refilling, exchanging or requalification. Vessels must meet the conditions of section 1.49 of the TDGR in order to benefit from that exemption.

¹For further clarification of the applicable requirements of the TDGR, please contact the Transportation of Dangerous Goods Office in your region, which can be found at <https://www.tc.gc.ca/eng/tdg/menu.html>.