



16710
CG-ENG
Policy Letter 02-23
August 2, 2023

From: D. H. Cost, CAPT
COMDT (CG-ENG)

To: Distribution

Subj: USCG ACCEPTANCE OF IMO GUIDELINES FOR HYDROSTATIC TESTING OF
CARBON DIOXIDE (CO₂) CYLINDERS ASSOCIATED WITH FIXED GAS FIRE
EXTINGUISHING SYSTEMS

Ref:

- (a) International Maritime Organization (IMO) MSC.1/Circ. 1318/Rev.1, Revised Guidelines for the Maintenance, and Inspections of Fixed Carbon Dioxide Fire-Extinguishing Systems (25 May 2021)
- (b) 46 Code of Federal Regulations (CFR) § 147.65, Carbon dioxide and Halon fire extinguishing systems
- (c) National Fire Protection Association (NFPA) 12, Standard on Carbon Dioxide Extinguishing Systems, 2022 Edition
- (d) 46 Code of Federal Regulations (CFR) § 30.15
- (e) 46 Code of Federal Regulations (CFR) § 70.15
- (f) 46 Code of Federal Regulations (CFR) § 90.15
- (g) 46 Code of Federal Regulations (CFR) § 108.105
- (h) 46 Code of Federal Regulations (CFR) § 114.540
- (i) 46 Code of Federal Regulations (CFR) § 125.170
- (j) 46 Code of Federal Regulations (CFR) § 136.115
- (k) 46 Code of Federal Regulations (CFR) § 175.540
- (l) 46 Code of Federal Regulations (CFR) § 188.15

1. Purpose. This policy letter responds to inquiries from ship owners and field personnel regarding the efficacy of reference (a) in accomplishing the goals of references (b) and (c).
2. Directives Affected. None.
3. Action. USCG Headquarters Units and Offices, Districts, and Sector Commanders should use this policy letter as they ensure compliance with U.S. statutory and regulatory requirements.
4. Background.
 - a. Due to conflicting hydrostatic testing requirements in references (a), (b), (c), and

manufacturer guidance (i.e., the inspection, testing and maintenance manual for firefighting systems), and multiple inquiries from the marine industry, the Coast Guard analyzed whether the requirements found in reference (a) are equivalent to requirements found in reference (b). In accordance with references (d)-(l), the Commandant may accept alternative arrangements if they are as effective as the requirements found in the regulations. The requirements for the hydrostatic testing of high-pressure CO₂ cylinders associated with fixed gas fire extinguishing systems are summarized below:

- i. U.S.-flagged vessels subject to inspection must comply with the requirements of reference (b) for CO₂ fire-extinguishing systems. In particular, 46 CFR § 147.65(a)(1) states, “cylinders must be retested at least every 12 years.” This requirement is consistent with the requirements in reference (c).
 - ii. The IMO recommends that vessels on international voyages follow the guidance set forth in reference (a), paragraph 6.1.2, which states that high pressure CO₂ cylinders should be subjected to periodical tests (hydrostatic and visual) at intervals not exceeding 10 years. At the initial 10-year inspection, at least 10% of the total number provided should be subjected to an internal inspection and hydrostatic test. If one or more cylinders fail, a total of 50% of the onboard cylinders should be tested. If further cylinders fail, all cylinders should be tested. Before the 20-year anniversary and every 10-year anniversary thereafter, all cylinders should be subjected to a hydrostatic test. This interval does not align with the requirements of reference (b) or (c).
- b. When comparing the 12-year CO₂ cylinder hydrostatic test interval in references (b) and (c) with the 10-year CO₂ cylinder hydrostatic test interval in reference (a) over the typical lifespan of a vessel (50 years), the number of tests conducted is the same, provided that no cylinder issues are discovered during the testing. For this reason, the Coast Guard has determined that the hydrostatic testing requirements for CO₂ cylinders in reference (a) provide an acceptable level of safety which is as effective as the hydrostatic testing requirements for CO₂ fire extinguishing systems in reference (b).

5. Policy.

- a. Based on the background information discussed above, this office has determined that hydrostatic testing requirements found in reference (a) are as effective as the requirements of reference (b). Therefore, owners and operators of U.S.-flagged vessels subject to inspection may follow the hydrostatic testing requirements found in reference (a) in lieu of reference (b) for their high-pressure CO₂ cylinders associated with fixed gas firefighting systems. Owners or operators who desire to change their existing hydrostatic testing requirements regime should notify their cognizant OCMI. Any changes should be properly documented in MISLE.

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- b. This determination does not apply to halon cylinders forming part of a fixed extinguishing system as specified in 46 CFR 147.65(b). The requirements in 46 CFR 147.65(c) still apply.
 - c. Note that paragraph 3 of the Annex to reference (a) states that maintenance and inspections should be carried out in accordance with the ship's maintenance plan having due regard to ensuring the reliability of the system. The onboard maintenance plan should be included in the ship's safety management system and should be based on the system manufacturer's recommendations including maintenance and inspection procedures and instructions and required schedules for periodic maintenance and inspections.
 - d. Therefore, when considering hydrostatic testing requirements, the vessel owner and operator should consider the system manufacturer's recommendations. Should there be a disparity between the manufacturer's recommendations and testing requirements found in references (a) and (b), the vessel owner and operator shall follow the most stringent testing requirement.
6. Disclaimer. While the guidance contained in this document may assist Coast Guard employees in advising industry, and other members of the public, in applying statutory and regulatory requirements, the guidance is not a substitute for applicable legal requirements as it is not a regulation itself. Each OCMI has discretionary authority on how best to address specific safety and security concerns within their area of responsibility. The guidance contained herein is neither intended to, nor does it impose legally binding requirements on any party outside the U.S. Coast Guard.
7. Changes. Changes to this policy will be issued as necessary. Suggestions for improvements of this policy should be submitted in writing to CGENG@uscg.mil.

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Manufacturers of USCG Approved CO₂ Extinguishing Systems