



Maritime and Coastguard Agency

Periodic Inspection and Testing of Seamless Steel Pressurised Gas Cylinders

Notice to all Shipowners, Masters and Officers of Ships, Recognised Organisations and Servicing Companies

This notice should be read in conjunction with BS EN 1968:2002 and BS EN 12863:2002

PLEASE NOTE:-

Where this document provides guidance on the law it should not be regarded as definitive. The way the law applies to any particular case can vary according to circumstances - for example, from vessel to vessel and you should consider seeking independent legal advice if you are unsure of your own legal position.

Summary

This note provides guidance on the recommended standards for inspection and testing of pressurised seamless steel gas cylinders for fire fighting appliances or other onboard purposes.

1 SOLAS Chapter II-2, Regulation 14 requires that "Fire-fighting systems and appliances shall be kept in good working order and readily available for immediate use". It further specifies that "Maintenance, testing and inspections shall be carried out based on the guidelines developed by the Organization".

2 Currently these guidelines are contained in MSC Circular 850 'Guidelines for the Maintenance and Inspection of Fire-Protection Systems and Appliances', however, this does not fully address maintenance requirements for pressure vessels used in fire fighting applications, specifying only that SCBA cylinders should be hydrostatically tested every 5 years.

3 MSC Circular 850 recommends that an external inspection is carried out annually. This should be undertaken by a competent person. A member of the ship's crew may be considered a competent person if they have received the necessary training, such as completing an approved Advanced Fire Fighting Course, and have sufficient experience. For additional guidance, they should also refer to the rejection limits contained in BS EN 1968:2002.

4 In situations where ship's crew do not have sufficient training or experience, it is strongly recommended that the required inspections are carried out by specialist shore-based personnel.

5 Similar requirements for fire appliances to be maintained in good order are contained in the Merchant Shipping (Fire Protection: Small Ships) Regulations 1998 No. 1011, Regulation 39 and the Merchant Shipping (Fire Protection: Large Ships) Regulations 1998 No. 1012, Regulation 50.

6 MGN 276 contains guidelines on the discharge and hydraulic testing of portable fire extinguishers, including CO₂ extinguishers. Other fire fighting appliances which contain pressurised gases include Emergency Escape Breathing Devices (EEBD) and various fire extinguishing gases.

7 EEBD's are very similar to SCBA sets and should be treated as per SCBA.

8 Medical oxygen cylinders should also be treated as per SCBA.

9 Reference should be made to BS EN 1968:2002, Annex B, for periods between internal examination and hydraulic testing of transportable seamless steel gas cylinders. Table 1 is based on this Annex. This standard does not apply to periodic inspection and testing of acetylene cylinders or composite (fully wrapped or hoop-wrapped) steel cylinders.

Table 1 — Intervals between periodic inspections and test (not applicable for acetylene cylinders) ^(a)

| Description | Gas type (examples) (b) | Internal Inspection and Test intervals |
|------------------|--|--|
| | | Period years |
| Compressed gases | Ar, N ₂ , He, etc. | 10 |
| | Air, O ₂ | 10 |
| | Self-contained breathing air (SCBA), O ₂ , etc | 5 |
| | Gases for underwater breathing apparatus (SCUBA) | 5 (c) |
| | CO | 5 |
| Liquefied gases | CO ₂ , N ₂ O etc. | 10 |
| Gas mixtures | i) all mixtures except; ii) mixtures completely in the gaseous state containing toxic and/or very toxic components. | 3, 5 or 10 years according to classification 3 years for groups TC, TFC, TOC 5 years for groups T, TF, TO 10 years for groups A, O, F where classification:- TC = toxic, corrosive TFC = toxic, flammable, corrosive TOC = toxic, oxidising, corrosive T = toxic TF = toxic, flammable TO = toxic, oxidising A = asphyxiant O = oxidising F = flammable |

(a) At all times certain requirements may necessitate a shorter time interval e.g. the dew point of the gas, polymerization reactions and decomposition reactions, cylinder design specification, change of gas service.

(b) This list of gases is not exhaustive. A full list of gases can be found in the International Carriage of Dangerous Goods by Rail (RID) and the International Carriage of Dangerous Goods by Road (ADR) regulations.

(c) For cylinders used for self-contained underwater breathing apparatus in addition to the full retest period of 5 years, an internal visual inspection needs to be performed every 2.5 years.

Dissolved acetylene cylinders

10 Acetylene cylinders differ from all other cylinders transporting compressed or liquefied gases because they contain a porous mass and normally a solvent in which the acetylene stored is dissolved. Reference should be made to BS EN 12863:2002 for the periodic inspection and maintenance of dissolved acetylene cylinders.

11 Due to the presence of this porous mass in the cylinder, neither a pressure test (hydraulic or pneumatic) nor a visual inspection of the internal surface of the shell is required by this standard.

12 An acetylene cylinder shall fall due for a periodic inspection on its first receipt by a filler after the expiry of the interval of 5 years in the case of non-monolithic massed cylinders, or 10 years in the case of monolithic massed cylinders.

More Information

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