IN FORCE | FIRE-FIGHTING

# Fixed CO2 systems: every interval in one table, and the two that are usually run wrong

The intervals for a fixed carbon dioxide system are not the same for passenger ships and cargo ships, and two separate blocks of work are commonly merged into one. What MSC.1/Circ.1318/Rev.1 requires, at what interval, and where the cylinder testing regime changed in 2021.

**ISSUED**
September 2026

**APPLIES TO**
High and low pressure fixed CO2 systems

**REFERENCE**
MSC.1/Circ.1318/Rev.1 · SOLAS II-2/14

**AT A GLANCE**

- MSC.1/Circ.1318/Rev.1 (25 May 2021) supersedes the original circular and governs CO2 system maintenance.
- Two blocks at what looks like the same interval fall due at different surveys on a cargo ship.
- Cylinder hydrostatic testing: 10 per cent at 10 years, all cylinders before the 20-year anniversary, and every 10 years after that.
- CO2 cylinder contents above 90 per cent of nominal charge, not 95.

## 01 The governing text

SOLAS II-2/14 requires the system to be kept in good working order and an onboard maintenance plan. MSC.1/Circ.1318/Rev.1, dated 25 May 2021, exists to demonstrate compliance with that regulation and supersedes the original MSC.1/Circ.1318. It was approved at MSC 103 to clarify the hydrostatic testing regime for high-pressure CO2 cylinders. MSC.1/Circ.1432 states in paragraph 1 that it does not cover fixed CO2 systems, which is why the two circulars carry different figures for some similar-sounding checks.

## 02 Monthly, at least every 30 days

- All stop valves in the closed position.
- All releasing controls in the proper position and readily accessible.
- All discharge piping and pneumatic tubing intact and undamaged.
- All high-pressure cylinders in place and properly secured.
- Alarm devices in place and not apparently damaged.

- Low-pressure systems additionally: pressure gauge in the normal range, liquid level within the proper level, main service valve and vapour supply valve secured open.

## 03 Annual

- Boundaries of the protected space inspected for modifications that create openings that cannot be closed.
- Storage containers inspected for damage, rust or loose mounting. Leaking, corroded, dented or bulging cylinders are retested or replaced.
- Piping inspected for damage, loose supports and corrosion; nozzles checked for obstruction.
- Manifold checked to verify flexible discharge hoses and fittings are tight.
- Entrance doors close properly and carry warning signs; remote releasing controls carry clear instructions and indicate the space they serve.

## 04 The two blocks that get merged, and should not be

| BLOCK | INTERVAL |
|---|---|
| 6.1: contents, hydrostatic test dates, piping flow test | At least biennially (2 years ± 3 months) in passenger ships, or at each intermediate, periodical or renewal survey in cargo ships |
| 6.2: release heads, cables and tubing, controls, alarms and time delay | At least biennially in passenger ships, or at each renewal survey in cargo ships. Carried out by service technicians trained to a standard accepted by the Administration |

The 6.1 block: high-pressure and pilot cylinders weighed or their contents verified by other reliable means, to confirm the charge is above 90 per cent of nominal, otherwise refilled; on low-pressure tanks the liquid level is checked against the amount needed for the largest hazard; hydrostatic test dates checked; discharge piping and nozzles tested for blockage by flowing dry air or nitrogen.

The 6.2 block: activating heads tested for correct function at full working pressure through the pilot lines where possible; pull cables checked for free movement; pneumatic tubing checked for leakage; pilot gas cylinder charge verified; all controls, warning devices and the time delay tested. Afterwards controls are verified in position, interlocks reset and stop valves returned to closed.

## 05 Five-yearly

Paragraph 7 is one sentence: at least once every five years, internal inspection of all control valves should be performed.

## 06 Cylinder hydrostatic testing: the part that changed in 2021

| ANNIVERSARY | WHAT IS REQUIRED |
|---|---|
| Every 10 years | Periodical tests at intervals not exceeding 10 years. At the 10-year inspection at least 10 per cent of the cylinders receive internal inspection and hydrostatic test |
| If one or more fail | 50 per cent of the cylinders on board are tested; if further cylinders fail, all of them |
| Before the 20-year anniversary | All cylinders hydrostatically tested |
| Every 10-year anniversary after that | All cylinders again |
| Flexible hoses | Replaced at the maker's interval, not exceeding 10 years |

The circular refers to ISO 18119:2018 for periodic inspection and testing of cylinders. While cylinders are ashore, the quantity remaining on board must continue to satisfy chapter 5 of the FSS Code.

## 07 Two figures that look like errors and are not

**90 per cent, not 95.** MSC.1/Circ.1318/Rev.1 requires CO2 contents above 90 per cent of nominal. The 95 per cent figure in MSC.1/Circ.1432 is for other fixed gas systems; that circular expressly excludes CO2.

**Alarm function testing is not annual.** Monthly is a check that alarm devices are in place and undamaged. The functional test sits in the 6.2 block. The annual functional alarm test comes from MSC.1/Circ.1432, which does not apply to CO2.

### WHAT TO DO NOW

- Check which block falls due at the next survey on each ship.
- Find the oldest cylinder test date and plan the 10 and 20-year steps.
- Check the fitting dates of the flexible hoses.
- Keep the service report in the format of the circular's example service charts.

### HOW OZ MARITIME CAN HELP

- One service plan for the whole CO2 system
- Weighing or liquid-level measurement, blow-through and release-side tests
- Hydrostatic testing with the quantity on board kept compliant
- Service report following the example charts of MSC.1/Circ.1318/Rev.1

**Ask our engineers · Türkiye +90 216 591 07 39 · Europe +31 164 313 000 · 24/7 +31 6 24 11 76 73 · info@ozmaritime.com**

### SOURCES


- IMO MSC.1/Circ.1318/Rev.1
- IMO MSC.1/Circ.1432 and MSC.1/Circ.1516
- Marshall Islands MN 2-011-14


This bulletin summarises the requirements as we read them on the date of issue. It is general technical information, not legal advice, and does not replace the text of the instruments, your flag Administration's notices, your classification society's rules or the equipment maker's instructions, which take precedence for your vessel. Check your flag, not a general claim.