

Cargo Hose Pressure Testing — OCIMF GMPHOM 2009, BS EN 1765 & IMO Certification Practice

cBallast Technical Sourcing · Marine cargo, bunker and offshore mooring hoses — factory and in-service pressure testing · issued 2026-08-29 · cballast.com/documents/cargo-hose-pressure-testing-ocimf-gmphom-certification

Cargo hose pressure testing practice under OCIMF GMPHOM 2009 and BS EN 1765: factory hydrostatic test at 1.5× rated working pressure (RWP), 2× RWP burst test on prototype, 5× RWP minimum burst on production, electrical continuity (bonded and non-bonded/insulating hose types), vacuum test at 250 mmHg (10 in Hg), length change and elongation records. In-service test intervals per OCIMF ship-to-ship transfer guidance and terminal operator practice. Certificate content, retention period and IOPP record-keeping. Applicable to marine bunker hoses (BS EN ISO 1825), cargo hoses (BS EN 1765) and offshore mooring hoses (OCIMF GMPHOM 2009).

Cargo hose pressure testing — OCIMF GMPHOM 2009 & BS EN 1765

Marine and offshore cargo hoses are life-safety-critical bulk-liquid transfer components: a failure during discharge of crude oil, refined product, LPG or bunker fuel means an immediate pollution incident, fire risk and potential loss of the transfer connection. Pressure testing at manufacture, in service and after any repair verifies that the hose reinforcement, fittings and bond continuity meet the design working pressure with the code-required safety margin. The two governing standards are OCIMF GMPHOM 2009 (Guide to Manufacturing and Purchasing of Hoses for Offshore Moorings, 4th edition) for offshore floating and submarine hoses, and BS EN 1765 for shore-installed and STS (ship-to-ship) cargo hoses. Bunker hoses fall under BS EN ISO 1825. All three impose the same broad test envelope: hydrostatic pressure at 1.5× the rated working pressure (RWP), prototype burst at 2× RWP (with a minimum production burst of 5× RWP for OCIMF hoses), electrical continuity or insulation verification, and vacuum resistance where applicable.

Factory test schedule — every hose, before dispatch

Test | Value | Duration | Acceptance | Reference |

Hydrostatic proof | 1.5 × RWP | 15 min minimum | No leakage, no permanent deformation, elongation within recorded limits | GMPHOM 2009 §7.2 / BS EN 1765 §6.3 |

Electrical continuity (bonded hose) | < 25 :V ÆB×FðÖVæB Â -ç7F çF æV÷W0, 40 V DC test | Continuous bond between all metallic parts | GMPHOM 2009 §7.4 |

Electrical insulation (insulating hose) | > 25 k:V ÆB×FðÖVæB Â -ç7F çF æV÷W0, 500 V DC megger | No conductive path between end couplings | GMPHOM 2009 §7.4 |

Vacuum test | 250 mmHg (10 in Hg / 33 kPa vac.) | 10 min | No hose collapse, no vacuum drop > 12 mmHg in 10 min | GMPHOM 2009 §7.5 |

Length under proof | Elongation recorded | At end of hydrostatic hold | Elongation < 8 % of unpressurised length for reinforced hose | GMPHOM 2009 §7.3 |

Coupling pull-off (type test) | 2 × RWP × ID area | Type test only | No coupling movement | GMPHOM 2009 §8.3 |

Every production hose passes the hydrostatic, electrical and vacuum tests before dispatch. The burst test is a destructive type test performed on prototype and one hose per production batch to demonstrate minimum burst pressure — typically 5× RWP for OCIMF offshore hoses, 3-4× RWP for BS EN 1765 shore/STS hoses. The burst-tested hose is destroyed and discarded; the balance of the production batch is verified via the non-destructive hydrostatic proof.

Working pressure classes and test pressures

Hose class | Rated Working Pressure (RWP) | Hydrostatic proof (1.5×) | Type-test burst (min.) | Typical application |

10 bar (145 psi) | 10 bar | 15 bar | 50 bar | Bunker hose (heavy fuel oil) |

15 bar (218 psi) | 15 bar | 22.5 bar | 75 bar | Refined product cargo |

19 bar (275 psi) | 19 bar | 28.5 bar | 95 bar | OCIMF SPM crude |

21 bar (305 psi) | 21 bar | 31.5 bar | 105 bar | OCIMF floating cargo |

28 bar (406 psi) | 28 bar | 42 bar | 140 bar | Offshore CALM system |

40 bar (580 psi) | 40 bar | 60 bar | 200 bar | Umbilical service, subsea |

In-service testing — intervals & responsibility

In-service pressure test intervals depend on the hose service and the operator's fleet management programme. The industry convention:

Ship's bunker hoses — annual hydrostatic proof at 1.5 × RWP. Records held in the Oil Record Book (IOPP) and the ship's Safety Management System. Terminal operators may require a valid test certificate within 12 months before permitting a bunker transfer.

Ship-to-ship (STS) cargo hoses — hydrostatic proof before every STS operation (per OCIMF/CDI STS Guide). Continuous visual inspection during the transfer; hose retired immediately on any evidence of blistering, cover cut through to reinforcement, or coupling slippage.

Terminal cargo hoses (shore-based) — annual hydrostatic proof; length-change recorded and compared with the previous test to detect creep. Terminal operator procedure typically requires 6-month visual + electrical continuity check between full pressure tests.

Offshore floating hoses (SPM/CALM systems) — per OCIMF GMPHOM 2009 recommendation, hose strings are pulled and pressure-tested annually. Individual hose replacement follows the string-length change criterion (typically > 10 % elongation over new-hose baseline) and the visual retirement criteria in GMPHOM 2009 Table 10.1.

Submarine (subsea) hoses — per OCIMF, subsea hoses are typically not lifted for pressure test but replaced on scheduled service intervals (typically 10 years for CALM system reinforced submarine hoses) or on service-condition indication from ROV inspection.

Certificate content — what a pressure-test certificate must record

Field | Content | Retention |

Hose manufacturer | Full company name and address of the hose manufacturer | Full service life + 5 years |

Hose serial number | Unique per hose, permanently marked on the coupling or a metal band | Full service life + 5 years |

Nominal bore (ID) | DN or inches | Same |

Overall length | Measured unpressurised; recorded to ± 10 mm | Same |

Rated Working Pressure (RWP) | bar or psi | Same |

Test pressure applied | Actual reading in bar or psi | Same |

Test duration | Minutes at test pressure | Same |

Elongation at test | % length change under proof | Same |

Electrical continuity/insulation | Measured : " ÷ " 3© | Same |

Vacuum result (if applicable) | Pressure drop over hold period | Same |

Test date | DD-MMM-YYYY | Same |

Tester signature and qualification | Signed by qualified test operator; class-society or independent body countersignature for offshore hoses | Same |

Next test due date | Based on service and operator schedule | Same |

Class-society approval reference | DNV, ABS, LR, BV, RINA, KR, NK, CCS, PRS approval number if applicable | Same |

Certificates are typically retained for the full service life of the hose plus 5 years (or per the operator's document retention policy, whichever is longer). For SPM and CALM offshore installations, class-society-approved certificates are audited during the annual and 5-year renewal surveys of the mooring system. For terminal cargo hoses, the pressure-test certificate is a routine terminal operator audit item and typically covered by the Vessel Inspection Questionnaire (VIQ) rating.

Retirement criteria (visual and mechanical)

A hose is retired — regardless of its test certificate status — on any of the following (OCIMF GMPHOM 2009 Table 10.1 and BS EN 1765 §7):

Cover cut, tear, gouge or crack exposing the reinforcement.

Blister or bulge in the cover exceeding 25 mm diameter or 5 mm height.

Kink, twist or permanent deformation of the hose body.

Elongation under proof exceeding 10 % of the new-hose baseline.

Coupling movement (any slippage detected at end coupling under proof).

End-fitting corrosion penetration exceeding 20 % of the fitting wall thickness.

Electrical continuity failure (bonded hose only) — measured resistance > 25 : " ÷ " à

Any failed pressure test.

Any indication of internal reinforcement corrosion (from tube colour change or visible rust in the hose cover).

Certificate templates and record keeping

cBallast supplies OCIMF GMPHOM 2009 / BS EN 1765-formatted pressure test certificate templates in 10-pack replacement documentation sets. Each certificate carries the standard content list above and records the class-society reference for offshore installations. Templates are supplied as a printed pack or as an editable PDF/spreadsheet on request. For fleet-wide implementation, cBallast can supply a customised template with the vessel operator's ISM SMS document-control reference and revision index.

Related standards and references

OCIMF Guide to Manufacturing and Purchasing of Hoses for Offshore Moorings (GMPHOM) — 4th ed., 2009. Available from the Oil Companies International Marine Forum.

BS EN 1765:2016 — Rubber hose assemblies for oil suction and discharge services (STS/shore terminal).

BS EN ISO 1825:2010 — Rubber hoses and hose assemblies for fuelling and defuelling aircraft — also referenced for marine bunker hose test.

OCIMF Ship-to-Ship Transfer Guide (Petroleum, Chemicals, Liquefied Gases) — 4th ed. 2011, joint with CDI, ICS and SIGTTO.

MARPOL Annex I & Annex II — the IMO regulatory framework driving cargo transfer documentation.

IMO Resolution MEPC.107(49) — the revised guidelines for 15 ppm oil-water separators (adjacent equipment often certified in the same bunker record).

Related products on cBallast

Cargo hose factory pressure test certificate template pack (10 certificates)

15 ppm bilge oily water separator, 1.0 m³/h IMO MEPC.107(49)

Cargo hoses on cBallast

Bunker hoses on cBallast

Hoses & flexible connections category

The test values and procedures above are the OCIMF GMPHOM 2009 and BS EN 1765 published requirements. The controlling standard for a specific hose installation may be more stringent (operator SMS, class-society condition, terminal operator agreement). Verify against the controlling documents for the specific service before applying this reference.

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