

TYPE EXAMINATION CERTIFICATE

This is to certify:**That the Flexible Hoses of Non-Metallic Material with Permanently Fitted Couplings**with type designation(s)
Double Carcass Floating Hose

Issued to

Shenyang Haiyue Oil Hose Co., Ltd.
Fushun, China

is found to comply with

OCIMF Guide to Manufacturing and Purchasing Hoses for Offshore Moorings, Fifth Edition – 2009**Application :****See page 2****Temperature range:** -20 °C to +82 °C**Max. working press.:** 15 bar(g)**Sizes:** 24"Issued at **Høvik** on **2017-10-18**This Certificate is valid until **2022-10-17**.for **DNV GL**DNV GL local station: **Dalian**Approval Engineer: **Maheshraja Venkatesan****Marianne Spæren Marveng**
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Examination Certificate and not to the approval of equipment/systems installed.



Product description

24" Double Carcass floating hose with end fittings in accordance with OCIMF GMPHOM2009 consisting of a primary Carcass (lining, body & cover as explained below) and a second carcass with second carcass of lining, body & cover with the following constructional features:

- Lining : an elastomeric layer made of synthetic rubber
- Body : reinforcing steel wire cord impregnated with elastomers and embedded wire helix
- Cover : an elastomeric layer made of synthetic rubber
- Floatation : layer of cross linked polyethylene foam interleaved with bonding compound
- End fittings : End flanges made of ASTM A105 according to class 150 from ASME B16.5

Application/Limitation

This certificate covers double carcass floating hose which is prototype tested as described in OCIMF GMPHOM2009 and to be installed in various Mooring & Floatation systems with the following design data:

- Design pressure : 15 bar
- Minimum bending radius : 3600 mm (at 0 bar)
- Max. elongation : 2.5% (at 15 bar)
- Max. flow velocity : 21 m/s

All Double Carcass Hoses shall be provided with a leak detection system such that the operator of the hose system can determine when product has escaped from the primary Carcass. The leak detection system may be integral to the hose Carcass or end fitting or may be an attachment.

Lifting lugs are not covered under the scope of approval.

Production test, inspection and test certificates shall be in accordance with OCIMF GMPHOM2009 section 2.

Packing of each hose assembly shall be in accordance with OCIMF GMPHOM Sec.2 [2.7].

Type Examination documentation

Tests carried out

Material Tests, Adhesion Tests, Buoyancy Recovery Test, Weight Test, Collar Test, Torsion Test, Tensile Test, Dynamic Test, Minimum Bend Radius Test, Bending Stiffness Test, Hydrostatic Pressure Test, Kerosene Test, Vacuum Test, Electrical Test, Burst Test, Double Carcass Burst Test & Crush Test

Marking of product

Each hose shall be permanently and legibly marked, in letters not less than 10 mm high in diametrically opposed positions at both ends, with a label in a contrasting non-fading colour providing, as a minimum, the following information:

- Manufacturer's name or trademark
- Reference to applicable OCIMF Guide latest issue, e.g. 'OCIMF 2009'
- Nominal inside diameter (in mm)
- Pressure rating (in bar)
- Manufacturer's serial number
- Month and year of manufacture
- Hose type - 'Double Carcass'
- Manufacturer's product code
- Factory measured temporary elongation

Each end fitting shall be marked as per OCIMF GMPHOM Sec.1 [1.5.2].

Job Id: **262.1-023585-1**
Certificate No: **TAP000012H**

Certificate Retention Survey

For retention of type examination, a DNV GL surveyor shall perform a survey every second year, to verify that the conditions for the type examination (TE) have not been altered. The main scope of the assessment will normally include:

- verification of the TE applicant's production and quality system with respect to ensuring continued consistent production of the type approved products at the TE applicant's own premises and at other companies that are given the responsibility for manufacturing of the products
- review of the TE documentation and that this is still used as basis for the production
- review of possible changes to the design, the material and the performance of the product
- verification of the product marking

Regardless of whether or not changes have been made in the hose design or manufacturing process, prototype tests should be redone within a maximum interval of 10 years (i.e., before 2027-06-10) in order to claim compliance with the requirements of OCIMF GMPHOM.