



Certificate no.:  
**TAP00002Y3**

# TYPE APPROVAL CERTIFICATE

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## This is to certify:

that the Bulk Loading Hoses with Permanently Fitted Couplings

with type designation(s)  
**VH-12S-F-SP, 12" single carcass floating hose**

issued to  
**VH-Marinetech Co., Ltd**  
**Shenyang,, Liaoning Province, China**

is found to comply with  
**OCIMF Guide to Manufacturing and Purchasing Hoses for Offshore Moorings, Fifth Edition – 2009**

## Application:

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See page 2.  
**Temperature range:** -20°C to +82°C  
**Max. working press.:** 21 bar  
**Sizes:** 12"

Issued at **Høvik** on **2024-11-28**

This Certificate is valid until **2029-11-27**.

for **DNV**

DNV local unit: **Dalian NB & CMC**

Approval Engineer: **Maheshraja Venkatesan**

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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 Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

## Product description

12" Single Carcass floating hose with end fittings in accordance with OCIMF GMPHOM 2009 consisting of carcass 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                                                 |
| Flotation    | : | layer of cross linked polyethylene foam interleaved with bonding compound                     |
| End fittings | : | End flanges made of ASTM A106 Gr. A/B or API5L Gr. A/B according to class 300 from ASME B16.5 |

## Application/Limitation

This certificate covers single carcass floating hose assembly prototype tested as described in OCIMF GMPHOM2009 suitable for use with crude oil and liquid petroleum product (other than LPG and LNG) having the following design data:

|                           |   |                    |
|---------------------------|---|--------------------|
| Design pressure           | : | 21 bar             |
| Minimum bending radius    | : | 1800 mm (at 0 bar) |
| Max. permanent elongation | : | 0.07% (at 21 bar)  |
| Max. temporary elongation | : | 2.5% (at 21 bar)   |
| Max. flow velocity        | : | 21 m/s             |

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].

This Type Approval certificate is not valid for designs, components, equipment, systems or products which are subject to classification by DNV.

This Type Approval covers design(s) only. i.e. the Type Approval is not valid for the final product but may be used as basis for obtaining a product certificate.

## Type Approval documentation

### Tests carried out

Material Tests, Adhesion Tests, 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, Crush Test, & Nipple Adhesion Test

### Marking of product

Minimum marking requirements shall be as outlined in OCIMF GMPHOM [2.5].

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

### Periodical assessment

This certificate is only valid if required periodical assessments are carried out with satisfactory results.

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNV-CP-0338.

To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>.

Regardless of whether or not changes have been made in the hose design or manufacturing process, prototype tests shall be redone within a maximum interval of 10 years (i.e., before 2034-11-28) in order to claim compliance with the requirements of OCIMF GMPHOM.