



Certificate no.:
TAP00002W9

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Flexible Hoses of Non-Metallic Material with Permanently Fitted Couplings**

with type designation(s)
DF-N-FF-001

issued to

Dong Woo FGM Co., Ltd.
Busan, Korea, Republic of

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021
DNV class programme DNV-CP-0183 – Type approval – Flexible non-metallic hoses

Application:

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV.

Temperature range: 0°C to 200 °C

Max. working press.: 30 Bar

Sizes: 3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2"

Issued at **Høvik** on **2026-02-03**

This Certificate is valid until **2031-02-02**.

for **DNV**

DNV local unit: **Gimhae Station**

Approval Engineer: **Tobias Berntsen**

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 300,000 USD.



Product description

One type of flexible PTFE hose with permanently fitted couplings constructed according to manufacturer's specification (Doc. No.) comprising of following construction:

Type	: DF-N 1000
Tube	: PTFE;
Reinforcement	: Braided stainless steel wire;
Cover	: Fire-proof fiberglass;
End fittings	: Stainless steel

Material of Flanges and end fittings: stainless steel 304/316/316L/SS400

Application/Limitation

This certificate is valid for the specific assembly of hose and coupling type as specified, assembled and delivered by the holder (named as manufacturer) of this certificate.

Hose assemblies covered by this certificate may be used in systems conveying fuel oil, bilge, compressed air, fresh water, steam, condensate, scrubber, and sanitary systems.

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions.

Stainless-steel grades 316/316L covered by this certificate are not allowed for stagnant seawater conditions, stainless-steel grades 304/SS400 covered by this certificate are not allowed for marine atmospheric environment.

Flexible hoses are only to be used where it is necessary due to vibrations or flexible mounting of the machinery. The hoses shall not replace/be used where permanent piping is possible/required.

The hoses are to be mounted in accordance with the manufacturer's instructions. The hoses must only be fitted in places where they are always accessible.

Flexible hoses of these types are not to be used on boiler fronts. It must be possible to shut off from the system when hose assemblies are used in hydraulic fluid systems.

The hose assemblies covered by this certificate shall not be installed in systems subject to pressure below atmospheric or vacuum conditions, or systems subject to pressure pulsation.

The hose assemblies covered by this certificate shall not be installed in piping systems for flammable media and seawater systems.

End connections shall fulfil the restrictions in DNV-RU-SHIP Pt.4 Ch.6 Sec.9 [5] as below:

- Threaded joints having pipe threads where pressure-tight joints are made on the threads:
 - 1) with parallel or tapered threads, shall comply with requirements of a recognized national or international standard.
 - 2) Shall not be used for piping systems conveying toxic or flammable media or services where fatigue, severe erosion or crevice corrosion is expected to occur.
- Mechanical joints other than standard bolted flanges are not covered by this certificate and shall be type approved separately in accordance with DNV-CP-0185

Production testing

Each hose assembly shall be hydrostatically tested at a hydrostatic pressure of 1.5 times the maximum working pressure and shall be delivered with the pressure test report with reference to this type approval certificate.

Type Approval documentation

Tests carried out

Dimensional check, leakage, burst, change in length, specific gravity test.

Marking of product

For traceability to this Type Approval, the products are at least to be marked with:

- hose manufacturer's name or trademark
- date of manufacture (month/year)
- designation type reference
- nominal diameter



Job ID: **262.1-041363-1**
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- pressure rating
- temperature rating

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>.

Manufactured by

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