DNV·GL

Certificate No:
TAP000020J

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Flexible Hoses of Metallic Material with permanently fitted couplings

with type designation(s)
ICO, ICA, ICB, PCB

Issued to
HANSA-FLEX AG
Boffzen, Niedersachsen, Germany

is found to comply with
DNV GL class programme DNVGL-CP-0184 – Type approval – Flexible hoses with permanently fitted couplings
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems

Application :

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

Temperature range:	**-55 °C up to 550 °C**
Max. working press.:	**acc. manufacturers specification**
Sizes:	**up to DN 100**

Issued at **Hamburg** on **2020-02-17**
This Certificate is valid until **2025-02-16**.
DNV GL local station: **Essen**

for **DNV GL**

Approval Engineer: **Christof Kotzmann-Bendrien**

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

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Product description

Annular convoluted stainless steel hoses acc. to ISO 10380

Type: ICO without braiding; ICA single braiding; ICB; PCB double (dual) braiding

Nominal Size:	DN 6 up to DN 100
M.A.W.P.:	acc. to manufacturers specification
Temp.-Range.:	-55 °C up to 550 °C
Materials of	
Hose:	1.4541, 1.4404, 1.4571 or equivalent
Braiding:	none, single, double 1.4301 or equivalent

Application/Limitation

The above mentioned metal hoses may be used in piping systems of class I to III as well as in non-essential systems under consideration of the current DNV GL rules Pt.4 Ch.6 – piping systems.

• The installation instructions of the manufacturer have to be observed.
• For temperatures of 50°[C] and higher and for adverse service conditions, the maximum allowable working pressure has to be reduced in accordance with the required correction factors of the manufacturer.

Type Approval documentation

• Test reports of pressure and endurance tests
• DNV GL-Ref.-No.: 14-097410 dated 2014-12-03

Marking of product

Each product shall bear legible and durable marking on the body or on a plate fixed securely to the body as follows:

• Manufacturer`s Mark • Hose Type • Serial-No. • Nominal Diameter • MAWP • DNV GL Logo •
DNV GL Approval-No.: TAP000020J (in connection with Recognition Certificate MSARC0000B9F)
• Number of DNV GL Test Certificate (in connection with 3.2 class certificate)

Periodical assessment

For retention of the Type Approval, a DNV GL surveyor shall perform a survey after 2 and 3,5 years and also before the expiry date of this certificate to verify that the conditions of the type approval are complied with.

The objective of the Periodical Assessment is to verify that the conditions for the Type Approval are not altered since the Type Approval Certificate was issued.
The main scope of the Periodical Assessment will normally include:

- Verification of the Type Approval applicant's production and quality system w.r.t. ensuring continued consistent production of the Type Approved products at the Type Approval applicant's own premises and at other companies that are given the responsibility for manufacturing of the products.
- Review of the Type Approval 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.

Witnessing of the following tests on a selection of sizes:
- Dimensional check.
- Change in length
- Leakage test
- Burst test

END OF CERTIFICATE