



Certificate no.:
TAP000033E

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Pipe Couplings, Bite and Compression Type**

with type designation(s)
24° tube fittings acc. to ISO 8434-1 bite type

issued to

HANSA-FLEX Hydraulic (Shanghai) Co., Ltd.
Shanghai, 020, China

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-0185 – Type approval – Mechanical joints

Application:

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

Temperature range:	see page 3 of certificate
Max. working pressure:	up to 630 bar / 63 MPa, see page 2 of certificate
Sizes:	Tube O.D. 6 mm to 42 mm, see page 2 of certificate

Issued at **Hamburg** on **2026-01-13**

This Certificate is valid until **2031-01-12**.

for **DNV**

DNV local unit: **Shanghai**

Approval Engineer: **Christian Kaemmer**

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

The Hansaflex mechanical joints are pipe couplings, bite type, designed in accordance with ISO 8434-1.

The mechanical joint consists of the components: body, nut, ferrule (cutting-ring) & sealing ring.

Series tube outer diameter O.D. 6 mm up to 42 mm

Type Designation:

Tube to tube fitting	XV Series fitting, bite type
	XW Series fitting, bite-type
	XT Series fitting, bite type
Tube-to thread fitting	XVR-ED Screw-in fitting

Materials:

Cutting ring, nut:	Stainless Steel	AISI 316L, AISI 304,
Connector body:	Stainless Steel	AISI 316L, AISI 304,
Rubber sealing:	FPM80, NBR85	(only for screw-in fitting XVR-ED)

Application/Limitation

The HANSAFLEX mechanical joints are type approved for application in pipe class I, II and III-piping systems. Classified as Compression-coupling – “Bite type” - listed in DNV-Rules “Ships” Pt. 4, Ch. 6, Sec. 9 Table 8, 9 & 10.

The mechanical joints with metallic sealings (no elastomeric sealing) are classified as fire-resistant. Type-approved for Classification of pipe system “dry, wet, dry/wet”.

The mechanical joints with elastomeric sealings are classified as fire-resistant. Type-tested and type-approved for fire endurance test-condition “wet” and “fire endurance test not required”. Classification and fire endurance according to DNV-Rules “Ships” Pt. 4, Ch. 6, Sec. 9 Table 9.

In general, mechanical joints are not approved for application in high pressure fuel injection systems of combustion engines.

Selection of materials

It shall be noted that the selection of the materials considers the applicable service condition with respect to type of media, flow velocity, media temperature and installation area of the piping system. In particular, the resistance to corrosion, erosion, oxidation and other deterioration during projected service life are to be considered. References: DNV Rules “Ships” Pt.4 Ch.6 – Section 2 – Materials.

Sea water application

The term sea water application includes sea water piping systems and installation of piping systems on open deck. Stainless steel materials 1.4571 (AISI 316Ti) are approved for sea water systems with operation mode “flowing seawater” but not for application in piping systems with operation mode “stagnant seawater”.

Service Pressure range

Series	Tube O.D. (mm)	PN (bar)
L-Series	6 - 15	250
	18 - 22	160
	28 - 42	100
S-Series	6 - 12	630
	14 - 25	400
	30 - 38	250

Temperature range

Metallic material	Temperature range
Stainless Steel AISI 316L, AISI 304	-55°C to +400°C
Sealing material	
NBR	-35°C to +100°C
FPM	-25°C to +200°C

Pressure reduction factor:

For service temperatures above 20°C the operating pressure is to be reduced with the pressure reduction factors:

20°C up to 50°C:	- 5 %
up to 100°C:	-15 %
up to 150°C:	-23 %
up to 200°C:	-29 %
up to 250°C:	-33 %
up to 300°C:	-37 %
up to 350°C:	-40 %
up to 400°C:	-42 %

A tube grade suitable for cold bending and flaring is to be used.

The wall thickness of the tubes is to be selected acc. to DNV Rules "Ships" Part 4 Chapter 6 Section 9 Table 3.

Type Approval documentation

Tests carried out

Manufactured by:

HANSA-FLEX Hydraulic (Shanghai) Co., Ltd., China

Marking of product

For traceability to this Type Approval, the tube fittings are to be marked with:

- Manufacturer's name or trade-mark
- Design temperature
- Design pressure
- Test pressure
- Size
- Manufacturing date

Periodical assessment

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment to verify that the conditions for the Type Approval are complied with. Refer to the Class Programme DNV - CP-0338, Section 4.

In addition, burst pressure testing on selected sizes to be carried out in the course of renewal of the certificate. To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>