

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Pipe Couplings, Bite and Compression Type**

with type designation(s)

RN Bite Type 1C; 1C9; AC; XC; 1CB-WD; 1CM-WD

Issued to

Shanghai Emyte Hydraulic Equipment Co., Ltd.

,

is found to comply with

DNV GL class programme DNVGL-CP-0185 – Type approval – Mechanical joints**DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems****Application :****Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.****Temperature range:** -40°C up to +120°C**Max. working press.:** 25 MPa / 250 bar**Sizes:** 6 mm up to 42 mmIssued at **Hamburg** on **2020-03-04**This Certificate is valid until **2025-03-03**.DNV GL local station: **Shanghai**for **DNV GL**Approval Engineer: **Christian Kaemmer**

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.



Product description

The bite type tube fittings "RN" are tube fitting systems consisting a tube fitting/pipe coupling, cutting-ring and nut with structural form of 24°.

Sizes and pressure range:

304 / 316L	
Pipe O.D. [mm]	PN
6, 8, 10, 12, 15	25 MPa / 250 bar
18, 22	16 MPa / 160 bar
28, 35, 42	10 MPa / 100 bar

Materials:

Component	Material designation and standards
Nut, Pipe-Coupling	304 / 316L

Minimum tube wall thickness acc. to DNV GL Ship-Rules Pt.4, Ch.6 Section 9 – 1, Table 3 is to be observed.

Regarding material certificates Section 2, Table 3 Material certificates is to be observed.

This type approval includes the tube fittings types: Straight fitting, right angle fitting, tee fitting, cross fitting, end straight fitting.

Application/Limitation

The bite type tube fittings are type approved for application in pipe class I, II and III-piping systems, as specified in DNV GL Ship Rules Pt. 4, Ch. 6, Sec. 9, Table 8 and 9 - Compression couplings – Bite type - Fire resistant type.

In general compression couplings are not approved for application in high pressure fuel injection systems of combustion engines.

Pipe connectors, where pressure tight joints are made on the threads, are limited in the application as follows:

- Pipe connectors with parallel thread are not approved for pipe class I and II.
- Tapered or parallel thread is not approved for toxic or flammable media or services where fatigue, severe erosion or crevice corrosion is expected to occur.
- Refer to DNVGL Rules, Pt.4, Ch.6 – Section 9 – 5.2.6.

The stainless steel materials 304L & 316L are not approved for application in sea water systems or unprotected installation on the open deck.

It shall be noted that the selection of the materials considers the intended service condition and installation area of the piping system. In particular, the resistance to corrosion, erosion, oxidation and other deterioration which may occur during intended service life.

Reference is made to DNVGL Rules Pt.4, Ch.6 – Section 2 – Materials.

Job Id: **262.1-029303-1**
Certificate No: **TAP000021Y**

Max. working pressure of the piping system depends on selected pipe material, pipe wall thickness and individual PN of selected tube fittings.

Temperature range

Materials	
304; 316L	-40°C up to +120°C

Assembling and Installation

For the assembling and installation the instructions of the manufacturer are to be observed.

Type Approval documentation

Tests carried out

Marking of product

Component	Marking
Tube fitting-body	Trademark, Material, Type-Designation

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the Type Approval are complied with. Refer to DNVGL-CP-0338, Sec.4.