DNV·GL

TYPE APPROVAL CERTIFICATE

Certificate No:
TAP000003E
Revision No:
1

This is to certify:

That the Pipe Couplings, Flared or Welded Nipple Type

with type designation(s)
37° flare couplings acc. to ISO8434-2 and SAE J514. JIC fittings

Issued to
Volz Gruppe GmbH
Deilingen, Germany

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV GL class programme DNVGL-CP-0185 – Type approval – Mechanical joints

Application :

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

Temperature range:	**Up to 400°C (see certificate)**
Max. working press.:	**Up to 600 bar (see certificate)**
Sizes:	**6 mm (1/4") up to 38 mm (1 1/2")**

Issued at **Hamburg** on **2019-11-20**
This Certificate is valid until **2024-11-19**.
DNV GL local station: **Augsburg**

for **DNV GL**

Approval Engineer: **Andrii Pishchanskyi**

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

Flared tube fittings of type ISO 8434-2 / SAE J 514 consists of mechanically shaped 37° flared tube end, connector body, sleeve, O-ring (optionally) and nut.

The Type Approval includes fittings as specified in the Volz Stainless Steel Catalogue "JIC Flared Tube Fittings" edition 08/2017. The following couplings are excluded from the certificate:

Designation	Coupling type
AGJ – DKJ – mit Messanschluss (Test 20)	Straight connector with test point
VKA - DKJ - mit Messanschluss (Test 20)	Straight connector with test point

Materials

Connector body, JIC sleeve and nut are made of stainless steel with material number 1.4571 / ANSI 316Ti.

Application/Limitation

Volz flare tube fitting system is type approved for application in pipe piping systems of class I, II and III as per DNVGL-RU-SHIP Pt. 4, Ch. 6, Sec. 9, Table 9 and 10 - Compression couplings - Flared type - Fire resistant type.

For selection of the minimum wall thickness for pipes refer to DNVGL RU-SHIP Pt.4, Ch.6, Sec. 9, Tables 1 and 2. Requirements on material certificates are defined in Sec. 2, Table 3.

Compression couplings of flared type are not approved for application in high pressure fuel injection systems of combustion engines.

Bulkhead connections of types AGJS and GSV are not approved for penetration through tank walls, fire divisions, watertight deck and bulkheads.

Nominal working pressure (PN)[1,2]

Tube OD		PN
mm	inch	
6	1/4	600
8	5/16	600
10	3/8	600
12	1/2	490
16	5/8	350
20	3/4	350
25	1	250
30	1 1/4	250
38	1 1/2	250

Footnote

[1] Individual nominal pressures of the fittings in accordance to Volz Stainless Steel Catalogue "JIC Flared Tube Fittings" edition 08/2017 has to be observed.

[2] Max working pressure depends on pipe material and thickness.

At elevated temperatures, the maximum pressures are to be reduced according to following:

Temperature, [°C]	**≥-55 and ≤20**	**50**	**100**	**200**	**300**	**400**
Pressure reduction, %	0	4.5	11	20	29	33

Temperature range depends on pressurised component and sealing ring materials:

Material	**Temperature range**
Stainless steel	≥ -55°C and ≤ +400°C
FPM (Viton)	-25°C up to +200°C
NBR	-30°C up to +100°C
PTFE (Teflon)	-60°C up to +100°C

Selection of materials

The stainless steel with material number 1.4571 should not be considered suitable 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 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. Refer to DNVGL-RU-SHIP Pt.4, Ch.6, Sec.2.

The couplings are not approved for gases having an oxygen content exceeding 25% as per DNVGL-CP-0185 Sec.5, 8.

Pipe couplings with pressure-tight joint on a thread

Pipe coupling where pressure-tight joints are made on the threads with parallel or tapered threads are not approved for piping systems conveying toxic or flammable media or services where fatigue, severe erosion or crevice corrosion is expected to occur as per DNVGL RU-SHIP Pt.4 Ch.6 Sec.9 5.2.6. Pipe coupling is limited to the following applications solely:

1. CO_2 systems inside of protected spaces and CO_2 cylinder rooms;
2. Threaded joints for direct connectors of pipe lengths with tapered thread shall be allowed for:
    a. Class I, outside diameter not more than 33.7 mm;
    b. Class II and class III;
3. Threaded joints with parallel thread shall be allowed for class III.

Threaded pipe couplings with limitations due pressure-tight joint on a thread is as follows:

- DKJ – AGN;
- DKJ – BSPT;
- AGJ – BSPT;
- AGJ – AGN;
- T – AGJ – AGN – AGJ;
- L – AGJ – AGJ – AGN;
- AGJ – NPT-female.

All other pipe couplings with thread connection not listed in the above table may be used without limitations.

Assembling and Installation

For the assembling and installation, the instructions specified in VOLZ Catalogue "JIC Flared Tube Fittings" are to be observed.

This certificate is valid for pipe connections using Volz pipe couplings and tube flared according to ISO 8434-2 / SAE J 514.

Type Approval documentation

Tests carried out

Pressure pulsation test, vibration test, leakage test, burst test, fire endurance test, repeated assembly test, pull-out test and vacuum test.

Marking of product

For traceability to this type approval, each coupling is at least to be marked with:

Element	Marking scope	Example
Connector body	Manufacturer sign	or V71
Nut	Manufacturer sign	or V71
Sleeve	Manufacturer sign	or V71

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 the Class Programme DNVGL-CP-0338, Sec.4.