DNV·GL

Certificate No:
TAP000021X

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pipe Couplings, Bite and Compression Type

with type designation(s)
SUPERLOK Compression Tube Fitting

Issued to
BMT Co., Ltd.
Yangsan-si, Gyeongsangnam-do, Republic of Korea

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018
DNV GL class programme DNVGL-CP-0185 – Type approval – Mechanical joints

Application :

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

Temperature range:	**-55 ºC to + 400 ºC**
Max. working press.:	**2400 to 10800 psi**
Sizes:	**1/16" to 1" - 3 to 25 mm**

Issued at **Høvik** on **2020-03-06**

This Certificate is valid until **2024-06-30**.

for **DNV GL**

DNV GL local station: **Busan**

Approval Engineer: **Adel Samiei**

Zeinab Sharifi
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.

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Job Id: **262.1-011527-7**
Certificate No: **TAP000021X**

Product description

SUPERLOK, bite type compression tube fitting in inch and metric size made of stainless steel SUS316, ASTM A276 and JIS G4303.

Application/Limitation

Maximum working pressure and sizes:

Tube O.D	Working pressure (psi)
1/16″	5600
1/8″	8500
3/16″	5400
¼″	4000
5/16″	4000
3/8″	3300
½″	2600
5/8″	4000
¾″	3300
7/8″	3600
1″	2400

Tube O.D (mm)	Working pressure (psi)
3	10800
4	7900
6	5000
8	4700
10	3700
12	4400
15	2180
18	3800
20	4200
22	4000
25	4000

For couplings at elevated temperatures, the maximum working pressure has to be reduced with the following factors:

Temperature °C	≤20	50	100	150	200	250	300	350	400
Correction factor	1	0,95	0,85	0,77	0,71	0,67	0,63	0,6	0,58

Couplings covered by this certificate are only to be used in piping classes I, II and III in below applications (3):

1) Flammable fluids (flash point ≤ 60°C)
- Cargo oil lines (1)
- Crude oil washing lines (1)
- Vent lines

2) Inert gas
- Water seal effluent lines
- Scrubber effluent lines
- Main lines (1)
- Distributions lines (1)

3) Flammable fluids (flash point > 60°C)
- Cargo oil lines (1)
- Fuel oil lines
- Lubricating oil lines
- Hydraulic oil
- Thermal oil

4) Fresh water
- Cooling water system
- Condensate return
- Non-essential system

5) Sanitary/drains/scuppers
- Deck drains (internal) (2)
- Sanitary drains

6) Sounding/vent
- Water tanks/dry spaces
- Oil tanks (f.p. > 60°C)

7) Miscellaneous
- Starting/control air
- Service air (non-essential)
- Brine
- CO_2 system
- Steam

(1) Only in pump rooms and open decks - only approved fire-resistant types.
(2) Only above bulkhead deck of passenger ships and freeboard deck of cargo ships.
(3) Not to be used in seawater applications

Threaded connections where pressure-tight joints are made on the threads with parallel or tapered threads 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. For other applications threaded connections with pressure-tight joints on threads may be used for outside diameters:

- In CO2 systems shall be allowed only inside protected spaces and in CO2 cylinder rooms
- Threaded joints with tapered thread shall be allowed for:
  - class I, outside diameter not more than 33.7 mm
  - class II and class III, outside diameter not more than 60.3 mm
- Threaded joints with parallel thread shall be allowed for class III, outside diameter not more than 60.3 mm.

The approval is only valid when the couplings are assembled with tubing of correct temper and tolerances as recommended by the manufacturer. These couplings should not be used on tubes in cold fabricated (hard temper) conditions.

Couplings covered by this certificate shall not be installed in systems subject to pressure below atmospheric or vacuum conditions.

Type Approval documentation

Tests carried out

Leakage, repeated assembly, burst pressure, pull-out, vibration & pressure pulsation tests

Marking of product

For traceability to this type approval, the products are to be marked with:

- Manufacturer's name or trade mark
- 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 approval are complied with. Reference is made to DNVGL-CP-0338.