DNV·GL

Certificate No:
TAP000017E

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pipe Couplings, Bite and Compression Type

with type designation(s)
Type SB - Bite type tube fitting

Issued to
SHIN IL ACE CO., LTD.
Busan, Korea

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

Application :

Products approved by this certificate are accepted for installation on vessels classed by DNV GL.

Temperature range:	**-60 °C to +250 °C (see limitations on page 2)**
Max. working press.:	**0 barg to 250 barg (see limitations on page 2)**
Sizes:	**6 to 42 mm**

Issued at **Høvik** on **2018-05-23**
This Certificate is valid until **2022-12-31**.
DNV GL local station: **Gimhae Station**

Approval Engineer: **Morten Engnestangen**

for **DNV GL**

Marianne Spæren Marveng
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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Product description

Bite and compression type tube fitting.
Manufacturer product description is "ShinilAce Bite Type Tube Fittings for JIS&KS" and bite type "SB".

Materials: Stainless steel SUS316 and SUS304.

Sizes covered (outer diameter of tube): 6, 8, 10, 12, 15, 16, 18, 20, 22, 25, 28, 30, 35, 38, and 42 mm.

Application/Limitation

When elastomer seals are used in the fitting the working temperature is not to exceed the following:

Type of elastomer seals	Temperature range, °C
NBR (Nitile butadiene rubber, e.g. Perbunan)	-25 to 100
FKM (Fluorelastomers, e.g. Viton)	-20 to 200
PTFE (Tetrafluorethylene, e.g. Teflon)	-60 to 190

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

Temp.	< 50 °C	50 °C	100 °C	150 °C	200 °C	250 °C	300 °C	350 °C	400 °C
Stainless Steel	1	0,95	0,85	0,77	0,71	0,67	0,63	0,6	0,58

The couplings may be used for:
- Hydraulic oil
- Fuel oil
- Lubrication oil
- Fresh water cooling
- Sanitary
- Compressed air

Couplings with elastomer seals are not considered as fire resistant types and shall not be used in following systems:
- Hydraulic oil (can be used when installed on Open decks)
- Fuel oil
- Lubrication oil (can be used when installed on Open decks)
- Cooling water inside machinery space of category A
- Starting and control air for functions required by statutory requirements or guidelines

Definition of Open decks is as defined by SOLAS II/2 Part C Regulation 9 Chapter 2.3.3.2.2 (10):
Open deck spaces and enclosed promenades having little or no fire risk. To be considered in this category, enclosed promenades shall have no significant fire risk, meaning that furnishings shall be restricted to deck furniture. In addition, such spaces shall be naturally ventilated by permanent openings. Air spaces (the space outside superstructures and deckhouses).

The approval is only valid when the couplings are assembled on tubing with Brinell Hardness HB ≤ 70.

These couplings should not be used on tubes in cold fabricated (hard temper) conditions.

The couplings are to be mounted according to the manufacturer's instructions.

The type approval does not cover threads and threaded joint for connection of the fittings, refer designations: -R, -G, and -OR.

For couplings with threaded ends where the pressure tightness is on threads, the limitations in DNVGL Pt.4 Ch.6 Sec.9 [5.2.6] shall be fulfilled.

Type Approval documentation

Tests carried out

Leakage test, repeated assembly test, burst pressure test, pull-out test, vibration test and pressure impulse test.

Marking of product

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

- Manufacturer's name
- Type designation
- Size

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.