



MARINE DIVISION

Certificate number: 20040/B0 BV

File number: ACM 135/2661/01-02

Product code: 2161H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

BMT CO., LTD.

YANGSAN (GYEONGNAM) - KOREA (REPUBLIC OF)

for the type of product

PIPE FITTINGS

Superlok and bite type Tube Fittings

Requirements:

- BUREAU VERITAS Rules for the Classification of Steel Ships
- BUREAU VERITAS Rules for the Classification of Offshore Units

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 03 Sep 2018

For BUREAU VERITAS,

At BV PUSAN, on 03 Sep 2013,

Hwan Geuk Choi



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

SUPERLOK Tube Fittings made of stainless steel

1.1 Design (compression couplings, bite type)

- The Superlok tube fittings consists of a body, a front ferrule, a back ferrule and a nut.
- The Superlok bite type fitting for DIN 2353 is a flareless metric fitting that consists of a body, a ferrule and a nut.

1.2 Ratings

- Superlok tube fitting depending on tube wall thickness

Outside Pipe Diameter (inch)	1/16	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1
Max. Working Pressure (psi)	12000	10900	10200	10200	8000	6500	6700	6000	5800	4800	4700

Outside Pipe Diameter (mm)	3	4	6	8	10	12	16	18	20	22	25
Max. Working Pressure (psi)	15300	14400	12700	9300	7300	7200	6800	6700	6000	5400	5200

The maximum working pressure is not to exceed one quarter of the burst pressure at the service temperature.

- Superlok bite type fitting for DIN 2353

Series	LL	L	L	L	S	S	S
Outside Pipe Diameter (mm)	4 to 12	6 to 15	18 to 22	28 to 42	6 to 14	16 to 25	30 - 38
Max. Working Pressure (MPa)	10	25	16	10	63	40	31.5

The maximum working pressure is not to exceed one quarter of the burst pressure at the service temperature.

1.3 Temperature range for fitting and sealing materials

Stainless steel	-55 / 400	FPM	-25 / 200
NBR	-35 / 100	PTFE	-55 / 240

The pressure reduction factors according to the manufacturer's specification are to be observed.

1.4 Material specification

Fittings	Stainless steel SUS 316
Seals	NBR / FPM / PTFE

2. DOCUMENTS AND DRAWINGS

- Catalogue BMT CTF-5 (07.05.02) Superlok tube fittings
- Catalogue BMT CTD-1 (06.03.07) Bite type fittings
- Installation instructions

3. TEST REPORTS

3.1 Tests carried out, witnessed by Classification Societies:

- Repeated assembly test, tightness test, vibration and pressure pulsation tests, burst test, pull-out test, vacuum test

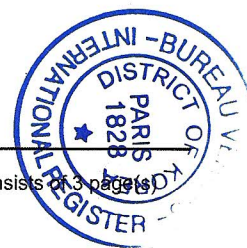
3.2 Test reports N° BTR-S060327-03, BTR-S060613-01, BTR-S060703-01/05/06, BTR-S070430-01 and N° BTR-D060327-03, BTR-D060613-01, BTR-D060623-04, BTR-D060703-01/03, BTR-D070430-01

3.3 Fire endurance test not carried out.

4. APPLICATION / LIMITATION

4.1 May be used on board units for marine, offshore piping systems (1):

- **Cargo oil lines (flash point $\leq 60^{\circ}\text{C}$)** - cargo oil, crude oil washing, vent lines
- **Inert gas** - water seal, scrubber effluent, main, distributions lines
- **Flammable fluids (flash point $> 60^{\circ}\text{C}$)** - cargo oil, fuel oil, lubricating oil, hydraulic oil, thermal oil lines
- **Sea water** - bilge/ballast/cooling water, fire main/water spray/foam/sprinkler systems, tank cleaning, non-essential lines
- **Fresh water** - cooling water, condensate return, non-essential lines
- **Deck drains (internal), sanitary drains**



- **Sounding and venting** - water tanks, dry spaces, oil tanks (flash point > 60°C)
- **Miscellaneous** - service air (non-essential), brine, non essential systems

Footnote (1) - Pipe fittings with elastomer seals are to be of approved fire resistant type for use in flammable fluids, bilge and sea water.

- 4.2 The sealing material is to be compatible with the fluid to be conveyed and the maximum working temperature.
- 4.3 In all cases, the associated pipes are to be suitably supported and anchored. The joints are to be at any time accessible, excepting inside tanks where permitted by the Bureau Veritas rules.
- 4.4 The wall thickness and material of the tubes are to be in accordance with the applicable Society Rules.
- 4.5 The bulkhead fittings are not approved through watertight or fire bulkheads.
- 4.6 Assembly instructions given by the manufacturer are to be complied with.

5. PRODUCTION SURVEY REQUIREMENTS

- 5.1 The products are to be supplied by **BMT CO., LTD.** in compliance with the type described in this certificate and in compliance with the requirements stated on the front page of this certificate. This type of product is within the category HBV of Bureau Veritas Rule Note NR 320.
- 5.2 **BMT CO., LTD.** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR 320 for HBV products.
- 5.3 No Bureau Veritas certificate is required.

Place of Production

#35, Sanmakgongdannam 11-gil,
Yangsan-si (Gyeongsangnam)
Republic of Korea

6. MARKING OF PRODUCT

Each fitting is to be at least marked with:

- Manufacturer's name or logo
- Material
- Size

7. OTHERS

This approval is given on the understanding that the manufacturer will accept full responsibility for informing shipbuilders or their sub-contractors of the proper method of fittings and general maintenance of the products and of the conditions of this approval.

This certificate supersedes the Type Approval Certificate N° 20040/A1 BV issued on 07/07/2010 by the Society.

*** END OF CERTIFICATE ***

