



CERTIFICATE NUMBER  
EFFECTIVE DATE  
EXPIRY DATE  
ABS TECHNICAL OFFICE

23-2450263-PDA  
13-Sep-2023  
12-Sep-2028  
Busan Engineering Services

## CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

**BMT CO., LTD.**

located at

**17, SINSOJAESANDAN 2-RO,, JANGAN-EUP, GIJANG-GUN,, ,  
BUSAN, Korea, Republic of**

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

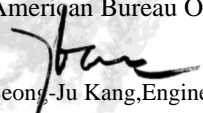
**Product:** Tube Fittings  
**Model:** SUPERLOK Tube Fittings  
**Endorsements:**  
**Tier:** 2 - PDA Issued

This Product Design Assessment (PDA) Certificate remains valid until 12/Sep/2028 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

  
Seong-Ju Kang, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

**BMT CO., LTD.**

17, SINJOAESANDAN 2-RO,  
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Web: www.superlok.com

**Tier: 2 - PDA Issued**

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**Product:** Tube Fittings  
**Model:** SUPERLOK Tube Fittings  
**Endorsements:**

**Intended Service:**

Hydraulic & Pneumatic Fluid and Instrument Control Systems

**Description:****UNIONS:**

Union(SU), Reducing Union(SRU), Bulkhead Reducing Union(SBHRU) & Bulkhead Union(SBHU).

**CONNECTORS:**

Male Connector(SMC), Male Connector for Bonded Washer Seal(SGMC), Male Connector for Metal Gasket Seal(SOMC), Female Connector(SFC), Gauge Connector(SGC), Bulkhead Male Connector(SBMC) & Bulkhead Female Connector(SBFC).

**ELBOWS:**

Union Elbow(SUE), Male Elbow(SME), 45° Male Elbow(SHME) & Female Elbow(SFE).

**TEES:**

Union Tee(SUT), Reducing Union Tee(SRUT), Male Branch Tee(SMBT), Male Run Tee(SMRT), Female Branch Tee(SFBT), Female Run Tee(SFRT) & Union Cross(SUC).

**STUB TUBE CONNECTORS:**

Reducer(SR), Bulkhead Reducer(SBR), Male Adapter(SMA), Female Adapter(SFA), Port Connector(SPC) & Flange Lapped Tubes Connector(SFTC).

**AN TUBES:**

An Flare(SAF), An Union(SAU) & An Adapter(SAA).

**O-RING SEAL:**

O-Seal Straight Thread Connector(SOSC), O-Seal Pipe Thread Connector(SOPC) & SAM/MS Male Connector(SSMC).

**WELD ENDS:**

Male Pipe Weld Connector(SPWC), Male Pipe Weld Elbow(SMPWE), Socket Weld Connector(SSWC) & Socket Weld Elbow(SSWE).

**PLUGS & CAPS:**

Plug(SP), Cap(SC).

**Rating:**

1. Raw Material: 316 Stainless Steel
2. Tube O.D Size:  
1/16 ~ 1 inch. (3mm ~25mm)
3. Pressure Ratings: As per manufacturer's specification

**Service Restriction:**

1. Unit Certification is not required for this product. If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

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2. Taper-thread joints are not to be used for toxic and corrosive fluid services and for all services of temperatures exceeding 495 degrees Celsius as per Marine Vessel Rules 4-6-2/5.5.5 (a).
3. In Classes I and II piping systems in general, for joining sections of hydraulic pipes and for steering gear, controllable pitch propeller, and propulsion-related hydraulic systems their use is limited to the following restrictions: less than 20 mm ND for 103 bar; above 20 mm to 25mm ND for 82.8 bar and above 25 mm to 50 mm ND for 41.4 bar. In other hydraulic oil systems, they may be used without pressure limitation only for connection for equipment, such as pumps, valves, cylinders, accumulators, gauges, and hoses.
4. Straight thread O-ring type fittings may be used for connections to equipment in hydraulic oil piping without pressure and service limitation, but are not to be used for joining sections of pipes.
5. Bulkhead connectors, bulkhead reducers, and bulkhead unions are not considered watertight or fire-tight penetration without separate approval of penetration detail.

**Comments:**

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. This test report submitted has the following tests:
  - Pull-out Test;
  - Vibration Test and Pressure Pulsation Test;
  - Repeat Assembly Test;
  - Tightness Test;
  - Vacuum Test;
  - Burst Pressure Test;

**Notes/Drawing/Documentation:**

1. Test Report No. BTR-S060703-01 - GL Type Approval - Product Test Report, dated 03 Jul 2006
2. Test Report No. BTR-S060302-01 / 02 / 03 / 04 / 05 - LR - Product Test Report, dated 02 March 2006
3. Test Report No. BTR-S060223-01 - ABS - Product Test Report, dated 23 February 2006

Drawing No. 130730-03-123-01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11

**Terms of Validity:**

This Product Design Assessment (PDA) Certificate remains valid until 12/Sep/2028 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

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**STANDARDS****ABS Rules:**

2023 Marine Vessel Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-6-2/5.9, 4-6-2/5.15, 4-6-2/5.17 & 4-6-7/3.5.1

**National:**

NA

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**International:**

NA

**Government:**

NA

**EUMED:**

NA

**OTHERS:**

NA