



CERTIFICATE NUMBER
EFFECTIVE DATE
EXPIRY DATE
ABS TECHNICAL OFFICE

22-2237139-PDA
30-Mar-2022
29-Mar-2027
Houston ESD - Piping

CERTIFICATE OF Product Design Assessment

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

TYLOK INTERNATIONAL, INC.

located at

1061 EAST 260TH STREET, EUCLID, OH, United States, 44132

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 Fitting/Piping Component
Model: CBC-Lok Tube fittings- DFC, DMC, DU, DELU, DME and DTTT
Endorsements:
Tier: 3 - Type Approved, unit certification not required

This Product Design Assessment (PDA) Certificate remains valid until 29/Mar/2027 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

Yongjin Lee

Yongjin Lee, 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)

TYLOK INTERNATIONAL

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United States 44132

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Email: sales@tylok.com

Web: www.tylok.com

Tier: 3 - Type Approved, unit certification not required

Product: Tube Fitting/Piping Component**Model:** CBC-Lok Tube fittings- DFC, DMC, DU, DELU, DME and DTTT**Endorsements:****Intended Service:**

Tubing/ Piping systems for Steel Vessels, Mobile Offshore Drilling Units, FPSO's and other Marine Applications.

Description:

CBC-LOK Tube Fittings manufactured with Carbon Steel, Stainless Steel and Brass, with all tube fitting sizes in the following product families: DFC - Female Connector; DMC - Male Connector; DU - Union; DELU - Union Elbow; DME - Male Elbow; DTTT - Union Tee; (Model Number differences indicate ferrule differences).

For Specification Details see attached pdf ABS-DOC-001.

Rating:

Tube working pressures and rating factors at ambient and elevated temperatures to be derived from Tube Manufacturer's data ratings (See attached pdf- ABS-DOC-001).

Pipe thread ratings in tube catalog charts are to be used as a guide only, ratings may vary from effects such as proper sealant, size of stock, temperature, corrosion factors, etc.

As per Manufacturer's specifications, recommendations and warranty found in ABS-DOC-001.

Service Restriction:

- 1) Unit Certification is not required for this product. If the manufacturer or purchaser's request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
- 2) CBC-Lok® Tube Fittings swage the tubing to achieve sealing. Thin wall tubing (wall thicknesses with working pressures highlighted in reverse text in the charts) is not recommended for Gas Service. See the attached pdf ABS-DOC-001.
- 3) As per 4-6-2/3.3 of the MVR, for Copper and copper alloys are not to be used for fluids having a temperature greater than 200°C (392°F)

Comments:

- 1) Installation to comply with manufacture procedure per ABS-DOC-001.
- 2) All fittings are to be subjected by the manufacturer to a hydrostatic test at a pressure equal to that stipulated by the American National Standards Institute or other recognized standard. They are to bear the trademark of the manufacturer legibly stamped as indicated in ABS Mobile Offshore Unit Rules 4-2-2/11.3.
- 3) For proper sealing it is recommended that the tubing and fitting be of like material. When using stainless steel tubing, Tylok recommends using Type 304 or 316 fully annealed, seamless or welded redrawn meeting ASTM-A-213, ASTM-A-269 or equivalent, with a suggested maximum hardness of 80 Rb. For copper tubing, Tylok suggests using soft annealed, seamless tubing per ASTM-B75 or equivalent. Copper water tube type K or L, soft annealed (Temper O) per ASTM-B88 can also be used. When using carbon steel, all tubing should be fully annealed and conform to ASTM-A-179, or equivalent, with a maximum hardness of 72 Rb.
- 4) Tube pressure derating factors at elevated temperatures is to be applied as indicated in the attached pdf ABS-DOC-001.
- 5) As indicated in the attached pdf ABS-DOC-001, for proper sealing it is recommended that the tubing and fitting be of like material to allow for positive sealing (i.e., stainless on stainless, brass on copper, steel on steel). Galvanic corrosion could occur if the tubing and fitting are not of like material, with the exception of a brass fitting on copper tubing.
- 6) The Manufacturer has provided a declaration about the control of , or the lack of Asbestos in this product.

Notes/Drawing/Documentation:

Drawing No. ABS-DELU Rev, CBC-Lok Union Elbow, Tube X Tube, Revision: A, Pages: 1

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Drawing No. ABS-DFC Rev, CBC-Lok Female Connector, Tube X Female NPT, Revision: A, Pages: 1

Drawing No. ABS-DMC Rev, CBC-Lok Male Connector, Tube X Male NPT, Revision: A, Pages: 1

Drawing No. ABS-DME Rev, CBC-Lok Male Elbow, Tube X Male NPT, Revision: A, Pages: 1

Drawing No. ABS-DOC-001, CBC-Lok Fittings with ABS Type Approval, Revision: A, Pages: 1

Drawing No. ABS-DTTT Rev, CBC-Lok Tee, Tube X Tube X Tube, Revision: A, Pages: 1

Drawing No. ABS-DU, CBC-Lok Union, Tube X Tube, Revision: A, Pages: 1

Terms of Validity:

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STANDARDS**ABS Rules:**

Rules for Conditions of Classification, Part 1 - 2022 Rules for Building and Classing Marine Vessels 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

2022 Marine Vessel Rules: 4-6-1/7.1; 4-6-1/7.5; 4-6-2/3.3; 4-6-2/5.5.5; 4-6-2/5.9; 4-6-2/5.17, 4-6-2/Tables 10, 11 & 12; 4-6-7/3.5.1

Rules for Conditions of Classification, Part 1 - 2022 Rules for Building and Classing Mobile Offshore Units 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

2022 Mobile Offshore Unit Rules: 4-2-1/11.13, 4-2-2/17

National:

2020 ASME B31.3

International:

NA

Government:

NA

EUMED:

NA

OTHERS:

NA