



CERTIFICATE NUMBER
17-HS1622794-PDA

DATE
16 Jun 2017

ABS TECHNICAL OFFICE
Houston ESD - Piping

CERTIFICATE OF DESIGN ASSESSMENT

This is to certify that a representative of this Bureau did, at the request of
TYLOK INTERNATIONAL, INC.

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**

This Product Design Assessment (PDA) Certificate 17-HS1622794-PDA, dated 16/Jun/2017 remains valid until 15/Jun/2022 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING


Ting Jiang
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 the terms and conditions as contained in ABS Rules 1-1-A/3/9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

TYLOK INTERNATIONAL

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Tier: 2 - PDA Issued

Product: Tube Fitting/Piping Component**Model: CBC-Lok Tube fittings- DFC, DMC, DU, DELU, DME and DTTT****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 "Tylok Tube fittings working pressures table"

Rating:

Tube working pressures and rating factors at ambient and elevated temperatures to be derived from Tube Manufacturer's data ratings (See attached pdf- "Tylok Tube fittings working pressures table").

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 Tylok Tube Fittings Catalog Doc. LIT-0001 Rev. C

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. Thinwall tubing (wall thicknesses with working pressures highlighted in reverse text in the charts) is not recommended for Gas Service. See "Gas Service" on page 54 of the attached pdf "Tylok Tube fittings working pressures table"
- 3) As per 4-6-2/3.3, 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 as per Tylok Tube Fittings Catalog (for CBC-Lok)- LIT-0001, Rev: C
- 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 Drilling 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 Sheet 55 of the attached pdf "Tylok Tube fittings working pressures table".
- 5) As indicated in Sheet 55 of the attached pdf- "Tylok Tube fittings working pressures table", 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:

- 1) Drawing No. LIT-0001 Tylok Tube Fittings, Revision: C, Pages: 1-64 (Electronic PDF)

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- 2) Dwg: 8-DTTT-8-6, CBC-Lok Reducer Tee
- 3) Dwg: 6-DTTT-6-4, CBC-Lok Reducer Tee
- 4) Dwg: 8-DTTT-8-4, CBC-Lok Reducer Tee
- 5) Dwg: 6-DTTT-4-6, CBC-Lok Union Tee
- 6) Dwg: 4-DTTT-4-2, CBC-Lok Reducer Tee
- 7) Dwg: 6-DTTT-6-8, CBC-Lok Reducer Tee
- 8) Dwg: 12-DTTT-12-6, CBC-Lok Reducer Tee
- 9) Dwg: 16-DTTT-16-6, CBC-Lok Reducer Tee
- 10) Dwg: 16-DTTT-16-4, CBC-Lok Reducer Tee
- 11) Dwg: 16-DTTT-16-12, CBC-Lok Reducer Tee
- 12) Dwg: 12-DTTT-12-8, CBC-Lok Reducer Tee
- 13) Dwg: 16-DTTT-16-8, CBC-Lok Reducer Tee

Terms of Validity:

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STANDARDS

ABS Rules:

Rules for Conditions of Classification, Part 1 2017 Steel Vessel Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

2017 Steel 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

2017 Offshore Support Vessel Rules 4-6-1/7; 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; 4-6-6/3.5

2017 Mobile Offshore Drilling Unit Rules Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, 4-2-1/11.13, 4-2-2/17

National:

2016 ASME B31.3

International:

NA

Government:

NA

EUMED:

NA

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OTHERS:
NA