



Confirmation of Product Type Approval

Company Name: MGI GMBH

Address: OLPER HUETTE 7 Germany

Product: Pipe, Copper and Copper Alloy

Model(s): Tungum Seamless Tubing for Hydraulic and Pneumatic Systems

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	16-LD1570559-PDA-DUP	03-NOV-2016	11-OCT-2021
Manufacturing Assessment (MA)	16-HN3239170	07-SEP-2016	06-SEP-2021
Product Quality Assurance (PQA)	NA	NA	NA

Tier

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Intended Service

Seamless tubes used on Instrumentation lines, Hydraulic systems, Pneumatic systems, Oxygen systems, Diesel / fuel lines, Sea Water systems, Pressure sensing systems, Temperature Sensing Element Loops, Potable water systems, Grey & black water systems, Chemical injection systems, Conduit tubing - emergency shutdown systems, Brake pipes.

Description

Tungum is a seamless copper alloy produced in accordance with the ASTM B706-TF00 and UNS no. C69100. It is used on non-processing hydraulic and pneumatic systems primarily as instrumentation tubing for control purposes in shipping and offshore. Tungum alloy's non-magnetic and non-sparking properties make it suitable for hydraulic or pneumatic circuits in demanding environments and at temperatures down to cryogenic.

Ratings

Maximum Working Pressure: As per attachment and up to max 414 BAR (6000 psi).

Temperature Range: -196 Deg C to + 204 Deg C.

Range of diameter: OD 4 – 50 mm/ WT 0.5 mm – 7 mm.

Pipe Sizes: see Attachment.

Service Restrictions

1. Unit Certification is required for Class I and II pipes & tubes, except hydraulic piping. If the manufacturer or purchaser 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. Tungum Alloy tubes are not to be used in the presence of Acetylene, Ammonia or Mercury.
3. Tungum Alloy tubes (pipes) may be used for Classes I and II systems, provided they are of the seamless drawn type.
4. All tubes (pipes) are to be hydrostatically or NDE tested during manufacturing as per ABS Steel Vessel Rules part 2-3-16/17. In addition, Class I & II pipes are to be hydrostatically tested as per ABS Steel Vessel Rule part 4-6-2/ 7.3.
5. Selection of the pipes and tubes are subject to design requirements of Steel Vessel Rules 2016 part 4-6-2/5.1 and approved drawings.
6. Penetration of bulkheads and deck is to follow ABS Rules 4-6-2/ 9.7 "Piping Penetrations Through Bulkheads and "Mobile Offshore Drilling Units 5-1-1".
7. Tungum Alloy tubes (pipes) are not to be used for fluids having a temperature greater than 300 deg. C.
8. Tungum Alloy tubes (pipes) used in CO2 fire systems are to be in accordance with ABS rules part 4-7-3/3 with minimum wall thickness in accordance with 4-7-3/ Table 2 of the corresponding rules.
9. Tungum Alloy tubes (pipes) used in starting and control air systems are to meet the requirements for certification in 4-6-1/7.1.
10. Pipe mechanical joints are to comply with Steel Vessel Rules part 4-6-2-/ 5.9 and Table 9 and Table 10 and to be of an approved type for the intended purpose, especially when used on lines carrying toxic and flammable fluids.
11. Flanged pipe joints are to comply with Steel Vessel Rules part 4-6-2/ 5.5 and corresponding Table 6 and Table 7, especially when used on lines carrying toxic and flammable fluids.
12. Tungum tubing system is not to be used on cargo processing lines of Gas carriers without prior approval from ABS.

Comments

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Each particular application, including deck/bulkhead penetrations, of the pressure system is to be specifically approved in connection with the relevant system and installation. Upon installation onboard the vessel, the Surveyor is to verify that a pressure relief valve is provided and set in accordance with 4-6-2/ 9.9 of the Rules for Building and Classing Steel Vessels 2016.

The selection of the tubes (pipes) for the corresponding application and the right mounting with mechanical joints is to be in accordance with the instructions of the manufacturer.

Tungum tubing material is manufactured in accordance with ASTM B706 grade TF00 (UNS No. C69100)

and the pressure rating is in accordance with ASME B31.3.

Notes, Drawings and Documentation

Drawing No. Correspondence, ABS London PDA database requests, Revision: -, Pages: -

Drawing No. Correspondence, Admin docs, Revision: -, Pages: -

Drawing No. Data sheet Appendix Tungum Approval range 12, Technical specs, Revision: -, Pages: -

Drawing No. Reference combined, Reference docs, Revision: -, Pages: -

Drawing No. Review docs, Review docs, Revision: -, Pages: -

Drawing No. Tests combined, Test results, 16 & 30 September 2016, Revision: -, Pages: -

Drawing No. Tungum pipe thickness, Pipe thickness, Revision: -, Pages: -

Term of Validity

This Product Design Assessment (PDA) Certificate 16-LD1570559-PDA-DUP, dated 03/Nov/2016 remains valid until 11/Oct/2021 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.

ABS Rules

Rules for Building and Classing Steel Vessels (2016): 1-1-4/7.7, 1-1-A3 and 4, 2-3-12, 2-4-4/17, 4-6-2, 5.15 and 4-7-3.

Mobile Offshore Drilling Units (2016): 1-1-4/9.7, 1-1-A2 and 3, 4-2-2/5

Offshore Units and Structures (2016): 1-1-4/9.7, 1-1-A2, 1-1-A3,

Classification of Drilling Systems 2012 (Up-dated Dec. 2015) 4/3, 5/3.3, 6/7

Bulk Carriers for Service on Great Lakes (1978) Up-date April 2008: 1-1-4/7.7, 1-1-A3 and 4

Steel Vessels for Service on Rivers and Intracoastal Waterways (2016): 1-1-4/7.7, 1-1-A3 and 4

Steel Vessels Under 90 Meters (295 Feet) in Length (2015):1-1-4/7.7, 1-1-A3 and 4

Offshore Support Vessels (2016): 1-1-4/7.7, 1-1-A3 and 4

International Standards

ASTM B706-TF00 (2011)/ UNS No. C69100

ASME B31.3 (2014)

EU-MED Standards

NA

National Standards

NA

Government Standards

NA

Other Standards

NA



A handwritten signature in blue ink, appearing to read "James J. White".

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 02-Oct-2019 5:12

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

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 prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.