



Confirmation of Product Type Approval

Company Name: JAMBO LTD.

Address: WEST INDUSTRIAL ZONE 20 ATANAS MOSKOV BLVD. 9009 Bulgaria

Product: Non-Metallic Flexible Hose Assemblies

Model(s): 1SN DN6, 1SN DN12, 2SN DN12, R7 DN5

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	22-2303300-PDA	13-SEP-2022	12-SEP-2027
Manufacturing Assessment (MA)	22-5406078	15-SEP-2022	14-SEP-2027
Product Quality Assurance (PQA)	NA	NA	NA

Tier

2 - PDA Issued

Intended Service

Flexible hose assemblies for high pressure CO2 systems.

Description

Non-metallic flexible hoses with permanently fitted end fittings to be used as connection between CO2 valve outlet and CO2 manifold (check valve) (1SN DN12, 2SN DN12) and as connection for pneumatic control of CO2 quick action valves (1SN DN6, R7 DN5)

- Inner tube materials: oil resistant synthetic rubber (1SN DN6, 1SN DN12, 2SN DN12), polyester elastomer (R7 DN5)

- Reinforcement: one braid steel wire (R7 DN5, 1SN DN6, 1SN DN12), two high tensile steel braided wires (2SN DN12)

- Cover: oil and water resistant synthetic rubber (1SN DN12, 2SN DN 12), oil and water resistant pin pricked synthetic rubber (1SN DN6), polyurethane, black, pin pricked, white, ink-jet branding (R7 DN5)

Ratings

Working pressure: 225 bar (1SN DN6), 160 bar (1SN DN12), 275 bar (2SN DN 12), 300 bar (R7 DN5)

Minimum working temperature: -60 °C.

Service Restrictions

1. Unit Certification is not required for this product. 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. The flexible hose assemblies are not impulse tested and are not to be used in oil fuel, lubricating, hydraulic and thermal oil systems, fresh water and sea water cooling systems, compressed air systems, bilge and ballast systems, and Class III steam systems.

Comments

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

2. Flexible hoses are to be permanently marked by the manufacturer with the following details as per 4-6-2/5.7.6 of ABS Marine Vessels Rules:

- Hose manufacturer's name or trademark
- Date of manufacture (month/year)
- Designation type reference
- Nominal diameter
- Pressure rating
- Temperature rating

3. Flexible hose assemblies covered under this PDA are Type 1 and Type 3 connectors as per EN 12094-8.

4. Flexible hoses are to be complete with approved end fittings in accordance with manufacturer's specification as per 4-6-2/5.7.3 of the Marine Vessel Rules.

Notes, Drawings and Documentation

Drawing No. 202101, Main CO2 Flexible High Pressure Hose for CO2 Systems, Revision: -, Pages: 1

Drawing No. 202102, Main CO2 Flexible High Pressure Hose for CO2 Systems, Revision: -, Pages: 1

Drawing No. 202103, Main CO2 Flexible High Pressure Hose for CO2 Systems, Revision: -, Pages: 1

Drawing No. 202104, Main CO2 Flexible High Pressure Hose for CO2 Systems, Revision: -, Pages: 1

Drawing No. 202105, High Pressure Pilot Hose for Pneumatic Control of CO2 Systems, Revision: -, Pages: 1

Drawing No. 202106, High Pressure Pilot Hose for Pneumatic Control of CO2 Systems, Revision: -, Pages: 1

Drawing No. 202107, High Pressure Pilot Hose for Pneumatic Control of CO2 Systems, Revision: -, Pages: 1

Jambo Ltd Report 221708 dated 14 Aug 2022, Revision: -, Pages: 1

Term of Validity

This Product Design Assessment (PDA) Certificate remains valid until 12/Sep/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.

ABS Rules

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

2022 Rules for Building and Classing Marine Vessel Rules: 4-6-2/5.7

2022 Rules for Conditions of Classification – Offshore Units and Structures 1-1-4/9.7, 1-1-A2 and A3, which covers the following:

2022 Rules for Building and Classing Mobile Offshore Units: 4-2-1/11.29

2022 Rules for Conditions of Classification – Light and High Speed Craft 1-1-4/11.9, 1-1-A2 and A3

2022 Rules for Building and Classing High Speed Craft: 4-4-1/9.19

International Standards

EN-12094-8:2006

EU-MED Standards

NA

National Standards

NA

Government Standards

NA

Other Standards

NA



A handwritten signature in dark ink, appearing to read "Joseph W. H.", is positioned above the corporate information.

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 07-Oct-2022 12:10

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.