



Marine & Offshore

Certificate number: 74468/A0 BV

File number: .

Product code: 2104I

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

PARKER HANNIFIN MANUFACTURING S.r.l. Polymer Hose Division Europe
Veniano (CO) - ITALY

for the type of product

NON-METALLIC HOSES (FLEXIBLE PIPES) ASSEMBLIES

Hydraulic Hoses Type 462-462ST-462TC

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships
Bureau Veritas Rules for the Classification of Offshore Units
Bureau Veritas Rules for the Classification of Naval Ships
Bureau Veritas Rules for the Classification of Yachts

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 12 Jun 2028

For Bureau Veritas Marine & Offshore,

At BV NAPOLI, on 12 Jun 2023,

Sandro BRUSEGAN

This certificate was created electronically and is valid without signature



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

NON-METALLIC HOSES (FLEXIBLE PIPES) ASSEMBLIES

1.1 Ratings

Type 462-462ST-462TC according to ISO 11237 2SC

Model	Type 462	Type 462ST	Type 462TC
DN (mm)	6 / 8 / 10 / 12 / 16 / 19 / 25 / 31	6 / 8 / 10 / 12 / 16 / 19 / 25 / 31	6 / 8 / 10 / 12 / 16 / 19 / 25 / 31 / 38 / 51 / 63 / 76
Temperature range (°C)*	-40°C / +100°C	-40°C / +100°C	-40°C / +100°C
Max. Working Pressure (MPa)	42.5 / 40 / 35 / 31 / 28 / 28 / 21 / 17.2	42.5 / 40 / 35 / 31 / 28 / 28 / 21 / 17.2	42.5 / 40 / 35 / 31 / 28 / 28 / 21 / 17.2 / 14.6 / 11.2 / 7 / 7

The Maximum Allowable Working Pressure in relation to temperature must be in conformity with manufacturer's specifications.

**Exception for Air: +70°C and for Water: +85°C*

1.2 Materials

Part	Materials for Type 462	Materials for Type 462ST	Materials for Type 462TC
Tube	Nitrile (NBR)	Nitrile (NBR)	Nitrile (NBR)
Reinforcement	Two high-tensile steel wire braids	Two high-tensile steel wire braids	Two high-tensile steel wire braids
Cover	Synthetic rubber	Synthetic rubber with a special polyethylene coating	MSHA approved synthetic rubber

When other choices of materials are used per manufacturer's recommendations, the BV agreement is to be obtained.

2. DOCUMENTS AND DRAWINGS

- Catalogue N°4400/UK dated 01/2021: Type 462-462ST-462TC
- Material technical specification N°PK 630 V5 code 3735 Rev.01 dated 06/12/2016
- Material technical specification N°PK 1124 V5 code 3685 Rev.01 dated 18/09/2013
- Material technical specification N°PK SN 636 V6 code 3746 Rev.01 dated 06/12/2016
- Material technical specification N°STM 342 Rev. 04 dated 08/08/2016
- Declaration between initial and authorized manufacturer dated 31/01/2023

No departure from the above documents shall be made without the prior consent of the Society. The manufacturer must inform the Society of any modification or changes to these documents and drawings.

3. TEST REPORTS

3.1 - Type tests including burst test at 4 times the design pressure, visual inspection & dimensional check, change in length, cover adhesion test, impulse test, ozone resistance test and cold flexibility test:

- Burst test report N°3536 dated 12/07/2022
- Test "specification" report N°013 dated 31/01/2023: For DN04
- Test "specification" report N°014 dated 31/01/2023: For DN05
- Test "specification" report N°015 dated 31/01/2023: For DN06
- Test "specification" report N°016 dated 31/01/2023: For DN08
- Test "specification" report N°017 dated 31/01/2023: For DN10
- Test "specification" report N°018 dated 31/01/2023: For DN12
- Test "specification" report N°019 dated 31/01/2023: For DN16
- Test "specification" report N°020 dated 31/01/2023: For DN20
- Test "specification" report N°021 dated 31/01/2023: For DN24
- Test "specification" report N°022 dated 31/01/2023: For DN32
- Test "specification" report N°023 dated 31/01/2023: For DN40
- Test "specification" report N°024 dated 31/01/2023: For DN48

3.2 - Fire resistance type tests:

- Fire resistance test report N° 560.0ISO110/14 dated 17/04/2023 performed according to standard: ISO 15540:2003

- Fire resistance test report N° 561.0IS0110/14 dated 17/04/2023 performed according to standard: ISO 15540:2003
- Fire resistance test report N° 562.0IS0110/14 dated 17/04/2023 performed according to standard: ISO 15540:2003

4. APPLICATION / LIMITATION

4.1 - May be used on the following services on board:

- Lubricating oil, hydraulic oil, thermal oil, fresh water, sea water, compressed air systems, bilge, ballast water, Class III steam systems

4.2 - End fittings as per manufacturer's catalogue. The hoses are to be entirely assembled in the manufacturer's workshop.

4.3 - The hoses are to be limited to a length necessary to provide for relative movement between fixed and flexibly mounted items of machine/equipment or systems. When the hoses are intended to be used for essential services or containing either flammable or toxic media, they are not to exceed 1.5 m in length. The hoses are to be installed in clearly visible and readily accessible locations at all times.

4.4 - The hoses assemblies are to be installed according to manufacturer's instructions and Bureau Veritas Rules.

4.5 - Not to be used in case of high level of vibrations where fitted to engines, pumps, compressors and other sources of high vibrations.

5. PRODUCTION SURVEY REQUIREMENTS

5.1 - The products are to be supplied by **PARKER HANNIFIN MANUFACTURING S.r.l. Polymer Hose Division Europe** in compliance with the type and the requirements described in this certificate.

5.2 - This type of product certificate is within the category IBV of Bureau Veritas Rule Note NR320.

5.3 - BV product certificate is required.

5.4 - Each hose assembly is to be hydraulically pressure tested to 1.5 times the maximum working pressure and provided with the manufacturer's pressure test report and conformity of production.

5.5 - For information, **PARKER HANNIFIN MANUFACTURING S.r.l. Polymer Hose Division Europe** has declared to Bureau Veritas the following production site :

PARKER HANNIFIN MANUFACTURING S.r.l. Polymer Hose Division Europe
Via G.B. Pirelli,6
22070
Veniano (CO)
ITALY

6. MARKING OF PRODUCT

Each flexible hose shall at least clearly and indelibly marked with:

- Manufacturer name or logo
- Date of manufacture (month/year)
- Type designation
- Nominal Diameter
- Pressure rating
- Temperature rating
- Society's brand as relevant

7. OTHERS

It is **PARKER HANNIFIN MANUFACTURING S.r.l. Polymer Hose Division Europe's** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

*** END OF CERTIFICATE ***