Certificate No:
TAP00002SV

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Flexible Hoses of Non-Metallic Material with Permanently Fitted Couplings

with type designation(s)
SR, SRI42

Issued to
Parker Hannifin Manufacturing S.r.l.
Veniano, CO, Italy

is found to comply with
DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021
DNV class programme DNV-CP-0183 – Type approval – Flexible non-metallic hoses

Application :

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV.

Type:	Temperature range:	Max. working press.:	Sizes:
SR	-40 °C up to +120 °C	See page 2	DN10 to DN25
SRI42	-40 °C up to +120 °C	42 MPa	DN12 to DN16

Issued at **Høvik** on **2023-10-19**
This Certificate is valid until **2028-10-18**.
DNV local unit: **Italy/Malta CMC**

Approval Engineer: **Sarah Miller**

for **DNV**

Zeinab Sharifi
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description

Two types of flexible hose assemblies with the following construction:
Hose for both types:

		SR	SRI42
Tube	:	Synthetic rubber	Synthetic rubber
Cover	:	Synthetic rubber	Synthetic rubber
Reinforcement	:	Four Spiral high tensile steel wire braids	Four or six Spiral high tensile steel wire braids

End fittings (Couplings:)

SRI42-8 to SRI42 16:	Parker 77 series
SR45-6:	Parker 70 series
SR35-8 up to SR-35 16:	Parker 77 series

Coupling Materials:
Carbon Steel and Stainless Steel

Manufacturing locations

Hose manufacturer:	Parker Hannifin Manufacturing Srl, 22070 Veniano (CO), Italy
Coupling manufacturer:	Parker Hannifin GmbH, Fluid Verbindungsteile, 35325 Mücke, Germany

Application/Limitation

This certificate is valid for the specific assembly of hose and coupling type as specified, assembled, and delivered by the holder (named as manufacturer) of this certificate.

Maximum allowable working pressure (MAWP) rating:

Hose size I.D.			SR			SRI42		
			Part Number	Max. Working Pressure		Part Number	Max. Working Pressure	
inch	DN	Dash		MPa	psi		MPa	psi
3/8	10	-6	SR45-6	45	6500	-	-	-
½	12	-8	SR35-8	35	5000	SRI42-8	42	6000
5/8	16	-10	SR35-10	35	5000	SRI42-10	42	6000
¾	19	-12	SR35-12	35	5000	SRI42-12	42	6000
1	25	-16	SR35-16	35	5000	SRI42-16	42	6000

Hose assemblies covered by this certificate are suitable for use in petroleum base hydraulic fluids or fuel oil within a temperature range of -40°C to +120°C.

Flexible hoses are only to be used where it is necessary due to vibrations or flexible mounting of the machinery. The hoses shall not replace/be used where permanent piping is possible/required and must only be fitted in places where they are always accessible.

Flexible hoses of these types are not to be used in boiler fronts.

The hoses are to be mounted in accordance with the manufacturer's instructions.

The cover of hoses for gaseous applications shall be pin-pricked.

Hose assemblies covered by this type approval certificate shall not be installed in systems subject to vacuum.

The outer end of the pipe coupling (performing the connection to the fixed piping) is not covered by this certificate and shall follow the below requirements:

- Flanged ends shall be according to a recognized standard
- Slip-on threaded joints having pipe threads where pressure-tight joints are made on the threads with parallel or tapered threads, shall comply with requirements of a recognized standard. Limitations stated in DNV-RU-SHIP Pt.4 Ch.6 Sec.9 [5.2.6] to be followed.

- If these outer ends are going to be part of a mechanical joint as covered by Table 8 DNV-RU- SHIP Pt.4 Ch.6 Sec.9, then they shall be separately type approved.

Production testing

Each hose assembly shall be hydrostatically tested at a pressure of 1.5 times the maximum working pressure and be delivered with the pressure test report with reference to this type approval certificate.

Type Approval documentation

Tests carried out

Fire, Burst, Impulse, Change in length, Abrasion, Adhesion for cover and Tube, Cold flexibility, Ozone resistance, Dimensional check test.

Marking of product

For traceability to this type approval the products are at least to be marked with:

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

Periodical assessment

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNV-CP-0338.