

TYPE APPROVAL CERTIFICATE

Certificate no.:
TAP00001N6
Revision No:
1

This is to certify:

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

with type designation(s)
387/387TC/387ST, 487/487TC/487ST

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:
387/387TC/387ST	-40°C to +125°C	210 bar (3000 psi)	-4,-6,-8,-10,-12,-16
487/487TC/487ST	-40°C to +125°C	280 bar (4000 psi)	-4,-6,-8,-10,-12,-16

Issued at **Høvik** on **2024-04-19**

for **DNV**

This Certificate is valid until **2028-12-31**.

DNV local unit: **Oslo Pressure Equipment**

Approval Engineer: **Maheshraja Venkatesan**

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 hoses with permanently attached couplings:

1. 387/387TC/387ST

Synthetic rubber inner tube with one or two braid steel wires and synthetic rubber cover.

TC (Tough Cover): highly abrasion resistant cover

ST (Super Tough Cover): with a cover of special polyethylene coating

Sizes: DN6,10,12,16,19,25 (-4,-6,-8,-10,-12,-16)

2. 487/487TC/487ST

Synthetic rubber inner tube with one or two braid steel wires and synthetic rubber cover.

TC (Tough Cover): highly abrasion resistant cover

ST (Super Tough Cover): with a cover of special polyethylene coating

Sizes: DN6,10,12,16,19,25 (-4,-6,-8,-10,-12,-16)

Hose manufacturer : Parker Hannifin Manufacturing Srl, 22070 Veniano (CO), Italy

Couplings : Parker series 43 and 48

Coupling manufacturer : Parker Hannifin GmbH, Fluid Verbindungsteile, 35325 Mücke, Germany

Coupling Material : Carbon Steel: 1.0718,1.0715,SAE1137(35SMnPb14),1.07665,1.0581,1.0255,1.0303,
1.0504, 1.7225,1.7131
Stainless Steel: 1.4404, 1.4401, 1.4571

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.

Hose assemblies covered by this certificate may be used in systems conveying petroleum based hydraulic fluid, water based Hydraulic fluids, fresh water and air in the below temperature range:

- petroleum based hydraulic fluid: -40°C to +125°C
- water based Hydraulic fluids and air: -40°C to +70°C
- water: 0°C to +70°C

Flexible hoses are only to be used in short lengths 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.

The hose assemblies must only be fitted in places where they are always accessible. Flexible hoses of these types are not to be used on boiler fronts.

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

Hose assemblies covered by this certificate shall not be used in system subject to pressure below atmospheric or vacuum condition.

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

Production testing

All hose assemblies delivered under the DNV type approval scheme shall be subject to a pressure test at 1.5 times the maximum working pressure and shall be delivered with the pressure test report with reference to this type approval certificate.

Type Approval documentation

Manufacturer's hose specification no GHS-387TC and GHS-487TC
Manufacturers test specifications (reports) numbers: 003, 004, 005, 006, 007, 009, 010, 011 and 012
Manufacturers test specifications (reports) numbers:101,102,103,104,105,106 dated 2018-11-13
LAPI fire test reports: 352,353,354.0ISO100/14 & 246,247,248.0ISO100/14
Renewal burst pressure test reports number 101,103,106,107,108,111 dated 2018-11-13
Renewal burst pressure test reports number 3602, 3603, 3604, 3605, 3606, 3607, 3608 dated 2024-01-16
Renewal burst pressure test reports number 3617 dated 2024-02-16

Tests carried out

Dimensional Check Test, Change in Length Test, Burst Test, Cold Flexibility Test, Ozone Resistance Test, Impulse Test, fluid resistance Test and Fire 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

This certificate is only valid if required periodical assessments are carried out with satisfactory results.

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.

To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>