

TYPE APPROVAL CERTIFICATE

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 GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018
DNV GL class programme DNVGL-CP-0183 – Type approval – Flexible hoses

Application :

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

Type:	Temperature range:	Max. working press.:	Sizes:
387, 387TC, 387ST	-40°C to +125°C	210 (3000 psi)	-4,-6,-8,-10,-12,-16
487, 487TC, 487ST	-40°C to +125°C	280 (4000 psi)	-4,-6,-8,-10,-12,-16

Issued at **Høvik** on **2019-01-18**

This Certificate is valid until **2023-12-31**.

for **DNV GL**

DNV GL local station: **Oslo Pressure Equipment**

Approval Engineer: **Adel Samiei**

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Marianne Spæren Marveng
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.



Product description

Two types of flexible hoses:

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)

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

Coupling: 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 GL 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

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

Job Id: **262.1-017480-6**
Certificate No: **TAP00001N6**

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 GL 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 DNVGL-CP-0338.