

**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.**

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

Issued at **Høvik** on **2019-01-18**for **DNV GL**This Certificate is valid until **2023-12-31**.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

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

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

### **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**

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.