DNV·GL

Certificate No:
TAP00001AD

TYPE APPROVAL CERTIFICATE

This is to certify:

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

with type designation(s)
Parflex 540N, Parflex- 510C and 518C, Parflex 518D

Issued to
Parker Hannifin Corporation Parflex Division
Ravenna, OH, USA

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:
Parflex 540N	-40ºC to +100ºC	85 to 207 bar	DN 2 to 12
Parflex- 510C and 518C	-40ºC to +100ºC	69 to 224 bar	DN 2 to 16
Parflex 518D	-40°C to +100°C	69 to 224 bar	DN 2 to 16

Issued at **Høvik** on **2019-04-23**
This Certificate is valid until **2023-06-30**.
DNV GL local station: **New York**

Approval Engineer: **Zeinab Sharifi**

for **DNV GL**

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.

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Job Id: **262.1-010434-6**
Certificate No: **TAP00001AD**

Product description

Medium pressure and high pressure hoses designed according to SAE J517 (100R7).

Parflex 540N (SAE 100 R7)
The hoses consists of an extruded inner tube of polymetric core, reinforced by single synthetic fibre braid and finally covered with outer layer of smooth thermoplastic which is oil, weather, fire and abrasion resistant urethane cover. The couplings are pressed type of series 55/56.

Tube : Polymeric core
Reinforcement : Single synthetic fibre braid
Outer cover : Thermoplastic smooth, abrasion resistant urethane cover
Couplings : Parflex permanent fitted, series 55/56

Parflex 510C and Parflex 518C/518D
Medium pressure and high pressure hoses.

Tube : Nylon, Polyester or Hytrel
Reinforcement : Single polyester fibre braid
Outer cover : Abrasion resistant polyurethane cover (510 Black, 518 Orange)
Couplings : Parflex permanent fitted, series 56

Coupling Material:
Carbon Steel :1.0736, 1.07371.1193, 1.0301, 1.0402, 1.0044.
Stainless Steel : 1.4305, 1.4301, 1.4404, 1.4401, 1.4571.

Approved hose manufacturing locations and corresponding hose type and size:

Hose size (I.D)		*510C*	*518C*	*518D*	*540N*
inch	DN				
1/8"	2	Ravenna	Ravenna	Ravenna	Ravenna, Wissembourg
3/16"	3	Ravenna	Ravenna	Ravenna	Ravenna, Wissembourg
1/4"	4	Ravenna	Ravenna, Wissembourg	Ravenna	Ravenna, Wissembourg
5/16"	5	Ravenna	Ravenna	Ravenna, Manitowoc	Ravenna, Wissembourg
3/8"	6	Ravenna	Ravenna, Wissembourg	Ravenna, Manitowoc	Ravenna, Wissembourg
1/2"	8	Ravenna	Ravenna	Ravenna	Ravenna, Wissembourg
3/4"	12	Ravenna	Ravenna	Ravenna	Ravenna, Wissembourg
1"	16	Ravenna	Ravenna	Ravenna	-

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 for corresponding size:

		Max. working pressure for the hose types					
Hose size (I.D)		*510C/518C*		*518D*		*540N*	
inch	DN	MPa	psi	MPa	psi	MPa	psi
1/8"	2	17.5	2500	21.0	3000	21.0	3000
3/16"	3	22.4	3250	22.4	3250	21.0	3000
1/4"	4	21.0	3000	21.0	3000	19.2	2750
5/16"	5	17.5	2500	17.5	2500	17.5	2500
3/8"	6	15.7	2250	15.7	2250	15.7	2250
1/2"	8	15.7	2250	15.7	2250	14.0	2000
3/4"	12	8.7	1250	8.7	1250	8.7	1250
1"	16	7.0	1000	7.0	1000	-	-

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

- water based hydraulic fluids and air: -40°C to +100°C
- water and air: 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.

The hose assemblies are not of fire-resistant type and are not approved for installation in piping systems for flammable media and sea water system where failure may result in flooding.
This is not applicable in cases where such hoses are installed on open decks, as defined in SOLAS II-2/Reg. 9.2.3.3.2.2(10) and not used for fuel oil lines.

Type Approval documentation

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.

Tests carried out

Dimensional Check Test, Change in Length Test, Leakage Test, Burst Test, Cold Flexibility Test, Ozone Resistance Test, Impulse Test, fluid resistance Test.
Parflex 518C/D have also electrical non-conductivity 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