

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Flexible Hoses of Metallic Material with permanently fitted couplings

with type designation(s)
Parflex SP.M.9750

Issued to

Scandflow AB
MOTALA, Sweden

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-0184 – Type approval – Flexible hoses with permanently fitted couplings

Application :

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

Temperature range: -20°C to 550°C

Max. working press.: 12.5 bar to 75 bar

Sizes: 3/8" to 5"

Issued at **Høvik** on **2019-03-19**

This Certificate is valid until **2023-06-30**.

DNV GL local station: **Stockholm**

for **DNV GL**

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.



Job Id: **262.1-009855-3**
Certificate No: **TAP00001RV**

Product description

Corrugated stainless steel hoses, hydroformed, annular corrugated, narrow pitch, type SP.T.9750 with one braid

Materials: Hoses: Stainless steel (1.4401 or 1.4571)
Braiding: Stainless steel (1.4301)
Ferrule: Stainless steel (1.4306, 1.4301, 1.4541, 1.4404, 1.4401 or 1.4571)
Hoses manufacturer: Tubiflex S.p.A

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.

Hoses covered by this certificate may be used in fresh water cooling system, lubrication oil, fuel oil, steam (class III) and condensate, fresh water, compressed air Fuel gas and Nitrogen applications.

Size		Maximum working pressure at 20°C	Pressure reduction factor at elevated temperatures		
inch	mm		Hose material	316L	321
3/8	10	75 bar	20°C	1.00	1.00
1/2	12	70 bar	50°C	0.88	0.92
5/8	16	65 bar	100°C	0.74	0.83
3/4	20	50 bar	150°C	0.67	0.78
1	25	40 bar	200°C	0.62	0.74
1 1/4	32	35 bar	250°C	0.58	0.71
1 1/2	40	30 bar	300°C	0.54	0.67
2	50	25 bar	350°C	0.52	0.64
2 1/2	65	20 bar	400°C	0.50	0.62
3	75	18 bar	450°C	0.48	0.61
4	100	14 bar	500°C	0.47	0.60
5	125	12.5 bar	550°C	0.47	0.60

Minimum bending radius is to be according to manufacturer's instructions/specifications.

Temperature range: Stainless Steel: -20°C to +550°C

Flexible hoses are only to be used where it is necessary due to vibrations or flexible mounting of the machinery and is not meant to replace permanent piping.

Minimum bending radius is to be according to manufacturer's instructions/specifications.

The hoses are not to be used for cargo systems on LNG/LPG applications, or systems where pressure impulse may occur.

The outermost end of the coupling performing the connection to the fixed piping is not covered by this certificate and may be standard flanges, screwed connections, bite/compression type couplings etc. Mechanical joints & couplings such as compression couplings shall be type approved according to DNVGL-CP-0185.

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

Static bend test, Bending fatigue test, Burst pressure test.

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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.