DNV·GL

Certificate No:
TAP000018K

TYPE APPROVAL CERTIFICATE

This is to certify:

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

with type designation(s)
701, 731, 771(721TC), 781(781TC)

Issued to
DONGNAM TS Co., Ltd.
Busan, Korea

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:
701	-40°C to+ 100°C	6000 psi/5000 psi	1/2" / 5/8"
731	-40°C to +100°C	3600 psi to 6000 psi (see page 2)	3/4" to 2" (see page 2)
771(721TC)	-40°C to +125°C	2500 psi to 4000 psi (see page 2)	3/4" to 2" (see page 2)
781(781TC)	-40°C to +125°C	5000 psi	3/4" and 1"

Issued at **Høvik** on **2018-02-14**
This Certificate is valid until **2022-12-31**.
DNV GL local station: **Busan**

Approval Engineer: **Iselinn Vindstad**

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: **262.1-013376-5**
Certificate No: **TAP000018K**

Product description
Synthetic rubber hoses with 4 plies of spiral-wrapped high tensile steel wire.

Types:
701: DIN 20023 4SP (EN 856 4SP) with Parker couplings series 70
731: DIN 20023 4SH (EN 856 4SH) with Parker couplings series 73
771(721TC): SAE 100R12 with Parker couplings series 71
781(781TC): SAE 100R13 with Parker couplings series 78

Hose manufacturing location:
Parker Hannifin Connectors Ltd.
Yangsan-si, Gyeongsangnam-do
Republic of Korea

Application/Limitation
Application: hoses for petroleum base hydraulic fluids and lubricating oils.

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.

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

Flexible hoses are only to be used 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 hoses must only be fitted in places where they are always accessible.

Flexible hoses of these types are not to be used on boiler fronts.

Max. working pressure depending on size and type:

Nominal diameter Inch.	mm	701 PSI	731 PSI	771(721TC) PSI	781(781TC) PSI
3/8	9.5	-	-	-	-
½	12.7	6000	-	-	-
5/8	15,9	5000	-	-	-
¾	19.1	-	6000	4000	5000
1	25.4	-	5500	4000	5000
1 ¼	31.8	-	4700	3000	-
1 ½	38.1	-	4200	2500	-
2	50.8	-	3600	2500	-

Type Approval documentation
Tests carried out
Burst, Ozone Resistance, Cold Flex, Impulse, Dimensional Check, Fire test.

Production testing
Every hose assembly shall be hydrostatically tested at a hydrostatic pressure of 1.5 times the maximum working pressure and shall be delivered with the pressure test report with reference to the type approval certificate.

Marking of product
For traceability to this type approval the products are to be marked with:
- Manufacturer's name or trade mark
- Type designation

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.