DNV·GL

Certificate No:
TAP00000UB

TYPE APPROVAL CERTIFICATE

This is to certify:

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

with type designation(s)
1105-10 Kappaflex 2K CO and 1105-63 Kappaflex 2K CO ROCK

Issued to
Hydroscand Group
OSLO, Norway

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV GL class programme DNVGL-CP-0183 – Type approval – Flexible hoses
DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition July 2015

Application :

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

Temperature range:	**-40°C to + 100°C**
Max. working press.:	**17,5 to 45 MPa size dependent**
Sizes:	**1/4" to 1 1/4" (DN6 to DN31)**

Issued at **Høvik** on **2017-06-21**
This Certificate is valid until **2021-12-31**.
DNV GL local station: **Oslo Maritime and CAP**

Approval Engineer: **Adel Samiei**

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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Product description

Hose assemblies with designation 1105-10 KAPPAFLEX 2K CO and 1105-63 KAPPAFLEX 2K CO ROCK according to EN 857 2SC

Inner tube: Synthetic oil resistant rubber.
Reinforcement: Two layers of steel wire braid.
Cover: Black weather and oil resistant synthetic rubber
Hoses made by Semperit

Couplings: Series HYDROSCAND design 4200 (carbon steel) and 4200S (stainless steel).

Application/Limitation

Hose designations		DN	Inches	Max working pressure
1105-10-04	1105-63-04	6	1/4”	450 bar
1105-10-05	1105-63-05	8	5/16”	420 bar
1105-10-06	1105-63-06	10	3/8”	385 bar
1105-10-08	1105-63-08	12	1/2”	345 bar
1105-10-10	1105-63-10	16	5/8”	290 bar
1105-10-12	1105-63-12	19	3/4”	280 bar
1105-10-16	1105-63-16	25	1”	200 bar
1105-10-20	1105-63-20	31	1 ¼”	175 bar

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 and below assembling location: Hydroscand Ågotnes / Hydroscand Bergen / Hydroscand Latvia SIA / Hydroscand Ålesund / Hydroscand Kristiansund / Hydroscand Automotive AB / Hydroscand Special Hoses / Hydroscand Forus / Hydroscand Bryne / Hydroscand Drammen / Hydroscand Porsgrunn / Hydroscand Finland OY / Hydroscand Estonia AS / Hydroscand Lithuania UAB

Hose assemblies are suitable for use with:

- Hydraulic fluids (except DN 31) in accordance with ISO 6734-4 (with exception of HFD-R, HFD-S and HFD-T) at temperature ranging from -40°C to 100°C
- Water based fluids at temperature ranging from -40°C to 70°C
- Water at temperature ranging from 0°C to 70°C

Size DN31 not covered by the fire tests and shall not be installed in systems where fire safe application is required.

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.

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 the type approval certificate.

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.

Hose assemblies with couplings made of carbon steel are not to be used at temperatures below -10°C unless the material is normalized.

Type Approval documentation

Tests carried out

Fire test , burst test, Dimensional check test, Change in length test, Cold flexibility test, Oil resistance test, Cover adhesion test, Ozone resistance test, Pressure Pulsation test

Marking of product

For traceability to this Type Approval, the products are at least to be marked with:

- Manufacturer's name or trade mark
- Type designation
- Maximum working pressure
- Size

Periodical assessment

For retention of the Type Approval, DNV GL Surveyor shall perform a periodical assessment every second year on the main assembling location and at least once during validity of certificate on other assembling locations to verify that the conditions for the type approval are complied with and to burst tests on a selection of sizes.
The tests are to be performed with the type of couplings fitted that are Type Approved with the hoses.