DNV·GL

Certificate No:
TAP00000HZ

TYPE APPROVAL CERTIFICATE

This is to certify:

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

with type designation(s)
Aeroquip GH663, Aeroquip GH466, Aeroquip GH506

Issued to
OLEODINAMICA TOSCANA SRL
SERRAVALLE PISTOIESE PT, Italy

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

Application :

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

Type:	Temperature range:	Max. working press.:	Sizes:
Aeroquip GH663	**-40 to + 120°C**	**see certificate**	**-3 to -32**
Aeroquip GH466	**-40 to + 120°C**	**see certificate**	**-20, -24, -32**
Aeroquip GH506	**-40 to + 120°C**	**see certificate**	**-16, -20, -24**

This Certificate is valid until **2020-06-30**.

Issued at **Høvik** on **2017-02-08**
DNV GL local station: **Genoa** for **DNV GL**

Approval Engineer: **Adel Samiei**

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.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Job Id:
Certificate No: **TAP00000HZ**

Product description

Three type of hose assemblies :

GH663:
Hose: Synthetic rubber tube, single wire braid reinforcement and synthetic rubber cover.
End fittings: Stainless steel Type "1S" with socket type "1SA"

GH466:
Hose: Synthetic rubber tube, 6-heavy spiral wire reinforcement,synthetic rubber cover.
End fittings: Stainless steel Type "1W" with socket type "1WB"

GH506:
Hose design: Synthetic rubber tube, 4-heavy spiral wire reinforcement, synthetic rubber cover.
End fittings: Stainless steel Type "1W" with socket type "1WA"

Hoses are manufactured by: Eaton Fluid Power GmbH - Münden - Germany
End fittings are manufactured by: Oleadinamica Toscana - Italy

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 working pressure (in bar):

Size		GH663	GH466	GH506
DN	DASH			
5	-03	250	-	-
6	-04	225	-	-
8	-05	225	-	-
10	-06	180	-	-
12	-08	175	-	-
16	-10	140	-	-
19	-12	125	-	-
25	-16	90	-	420
31	-20	65	420	350
38	-24	50	420	300
51	-32	40	420	-

Hose assemblies covered by this certificate are approved to be used in petroleum base and water base hydraulic fluids in temperature range of -40°C to +120°C. Below type/sizes are approved to be used in systems conveying flammable fluids (petroleum bases hydraulic fluids):

- GH663: DN 51 (-32)
- GH466: DN 31 and DN51 (-20 & -32)
- GH506: DN25 and DN38 (-16 & -24)

Each hose assembly is before delivery to be hydraulic pressure tested to 1.5 times the maximum working pressure and shall be delivered from with pressure test report with reference to this type approval certificate.

All hose assemblies delivered under this type approval certificate shall be in compliance with an assembly procedure issued by the certificate holder.

The hoses must only be fitted in places where they are always accessible.

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

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

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

Burst pressure, fire test, impulse pressure test, cover adhesion, cold flexibility, ozone resistance, oil resistance, change in length, dimensional check test, vacuum 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
- Additional marking at manufacturer’s option

Periodical assessment

For retention of the Type Approval, DNV GL Surveyor shall perform a periodical assessment every second year, to verify that the conditions for the type approval are complied with and to witness the following tests on a selection of sizes:

- Dimensional check
- Change in length
- Burst test

The tests are to be performed with the type of couplings fitted that are Type Approved with the hoses.