



TYPE APPROVAL CERTIFICATE

Certificate No:
TAP00001GF
Revision No:
1

This is to certify:

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

with type designation(s)
Dunlop Hiflex SP33 Series (3SPT, 3SPG)

Issued to
Alfagomma Hydraulic S.p.A.
Castelnuovo Vomano – Castellalto, TE, Italy

is found to comply with
DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021
DNV class programme DNV-CP-0183 – Type approval – Flexible non-metallic hoses

Application :

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

Temperature range: -40°C to 100°C
Max. working press.: 240 bar to 500 bar
Sizes: 3/8" to 1 1/4"

Issued at **Høvik** on **2023-07-20**

This Certificate is valid until **2027-03-30**.

for **DNV**

DNV local unit: **Italy/Malta CMC**

Approval Engineer: **Sarah Miller**

Zeinab Sharifi
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

Design: Tube: Oil resistant syntetic rubber compound
 Cover: Syntetic rubber compound, weather-, oil- and abrasionand ozone resistant
 Reinforcement: Three high tensile steel braids
 Cover: Black rubber cover (3SPT)
 Black rubber cover "Greenline" branded (3SPG)
 Coupling materials: Carbon Steel 11SMnPb30 according UNI EN 10277
 Stainless Steel AISI 304 - AISI 316

Hose size			Couplings designation (Skive fittings)	
Dash	DN	inch	AG Branding	DH Branding
- 06	10	3/8	H1100404-06	D440000-06
- 08	12	1/2	H1100404-08	D440000-08
- 10	16	5/8	H1100404-10	D330000-10
- 12	19	3/4	H1100404-12	D440000-12
- 16	25	1	H1100404-16	D330000-16
- 20	31	1 1/4	H1100404-20	D330000-20

Manufacturing plants:

Couplings: Alfagomma Hydraulic S.p.A., Area Industriale Piano Lago, 87050 Mangone (CS) – Italy
 Hoses: Alfagomma Hydraulic S.p.A., Area Industriale Piano Lago, 87050 Figline Vegliaturo (CS)

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 or below assembling localitons:

- 1- Dunlop Hiflex Oy, Pirkkala, Finland
- 2- Dunlop Hiflex OY, Vantaa, Finland
- 3- Dunlop Hiflex AB, Halmstad, Sweden
- 4- Dunlop Hiflex OY, Turku, Finland
- 5- Alfagomma Germany GmbH, Herne, Germany
- 6- Alfagomma Germany GmbH, Hamburg, Germany
- 7- Dunlop Hiflex AS, Stavanger, Norway
- 8- Dunlop Hiflex AS, Bergen, Norway
- 9- Dunlop Hiflex AS, Kristiansand, Norway
- 10- Dunlop Hiflex AS, Kolding, Denmark

Hose assemblies covered by this certificate may be used in:

Petroleum based (-40°C to +100°C), water based Hydraulic fluids (-40°C to +70°C) fluids, water and air (0°C to +70°C)

Hose size			Maximum working pressure	
DASH	DN	inch	bar	Psi
- 06	10	3/8	500	7250
- 08	12	1/2	470	6820
- 10	16	5/8	410	5950
- 12	19	3/4	375	5440
- 16	25	1	327	4780
- 20	31	1 1/4	240	3480

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.

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.

Production testing

All hose assemblies delivered under the DNV 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.

Type Approval documentation

Tests carried out

Dimensional Check Test, Change in Length Test, Burst Test, Cold Flexibility Test, Ozone Resistance Test, Impulse Test, Oil Resistance Test, Cover adhesion test and Fire 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 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 DNV-CP-0338