

# TYPE APPROVAL CERTIFICATE

**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.**  
**Castellalto TE, Italy**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.****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 **2018-10-03**This Certificate is valid until **2023-03-31**.for **DNV GL**DNV GL local station: **Milan**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.



## 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 locaitons:

- 1- Dunlop Hiflex Oy, Pirkkala, Finland
- 2- Dunlop Hiflex OY, Vantaa, Finland
- 3- Alfagomma Hydraulic France, Vendin, France
- 4- Dunlop Hiflex AB, Halmstad, Sweden
- 5- Dunlop Hiflex OY, Turku, Finland
- 6- Alfagomma Germany GmbH, Herne, Germany
- 7- Alfagomma Germany GmbH, Hamburg, Germany
- 8- Dunlop Hiflex AS, Stavanger, Norway
- 9- Dunlop Hiflex AS, Bergen, Norway
- 10- Dunlop Hiflex AS, Kristiansand, Norway
- 11- Dunlop Hiflex AS, Esbjerg, Denmark
- 12- 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.

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.

Job Id: **262.1-016581-5**  
Certificate No: **TAP00001GF**

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.

## **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 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.



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<b>Date:</b>	<b>Our reference:</b>	<b>Your reference:</b>
2023-04-03	M-WI-CMC/BNTT/ M20230004LT	Mrs. Carpani Georgia

### ALFAGOMMA HYDRAULIC S.p.A. - DNV TYPE APPROVAL CERTIFICATES

This is to confirm that initial local survey activities relevant for renewal of DNV Type Approval Certificates No. TAP00000YK Rev. 5 for products Flexopak2 & Flexopak2 Supertuff/Super Slimline 241T and Super Slimline 241X TUFLEX, Flexopak2SC HF/ Slimline Plus 221T,221G / ARGUS 2SC, Flexopak 1SC/Slimline Plus 121T/ ARGUS 1SC and TAP00001GF for product Dunlop Hiflex SP33 Series (3SPT, 3SPG) Flexible Hoses of Non-Metallic Material with Permanently Fitted Couplings to Messrs Alfagomma Hydraulic S.p.A. - CASTELNUOVO VOMANO – CASTELLALTO TE, Italy have been locally completed on 2023-03-23 with satisfactory results.

In light of the above, the validity of DNV Type Approval Certificate is confirmed for the products a.m. reported (flexible hoses and couplings) till issuance of the new revision of DNV Type Approval Certificate and/or new communication from DNV about this matter.

Sincerely  
for DNV Maritime Italy S.r.l.

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