

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of the Kingdom of Norway.

This is to certify:

That the Materials other than steel for pipes conveying oil or fuel oil: flexible pipe assemblies

with type designation(s)
Flexor 13, Flexor 12, 712L, 713L and 713G

Issued to
ALFAGOMMA HYDRAULIC SPA
CASTELNUOVO VOMANO TE, Italy

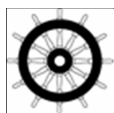
is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2015/559,**
Annex A.1, item No. A.1/3.15c and Annex B, Module B in the Directive; SOLAS 74 as amended,
Regulation II-2/4.2.2.5.1, II-2/4.2.2.5.6 & X/3 and 2000 HSC Code 7.5.4.

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2021-10-30.**

Issued at **Høvik** on **2016-10-31**

DNV GL local station:
Milan



for **DNV GL AS**

Approval Engineer:
Adel Samiei

Notified Body
No.: **0575**

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Vidar Dolonen
Head of Notified Body



The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

Job Id: **344.1-000518-6**
 Certificate No: **MEDB00001WG**

Product description

Standard	EN856 R12	SAE J517 100R12
Alfagomma designation	Flexor 12	
Dunlop Hiflex designation	712 L	

Design: Flexible rubber hoses reinforced by four steel spiral wires.
 Tube: Oil resistant synthetic chloroprene rubber.
 Reinforcement: Four layers of high tensile spiral steel wire wrapped in alternating directions.
 Cover: Chloroprene rubber, weather-, oil- and abrasion resistant.
 Couplings: Carbon steel (9SMnPb28 acc. UNI 4838) or
 Stainless Steel (XCrNi18 10 acc. UNI 6901)

Standard	EN856 R13	SAE J517 100R13
Alfagomma designation	Flexor 13	
Dunlop Hiflex designation	713 L	
Greenline branded	713 G	

Design: Flexible rubber hoses reinforced by four or six steel spiral wires.
 Tube: Oil resistant synthetic chloroprene rubber.
 Reinforcement: Four or six layers of high tensile spiral steel wire wrapped in alternating directions.
 Cover: Chloroprene rubber, weather-, oil- and abrasion resistant.
 Couplings: Carbon steel (9SMnPb28 acc. UNI 4838) or
 Stainless Steel (XCrNi18 10 acc. UNI 6901)

Hoses made by: Alfagomma Hydraulic S.p.A.
 Couplings made by: Alfatechnology S.r.l.

Hose/fitting combinations: Flexor 12, 712L

Size		FERRULE		INSERT		INTERLOCK FITTING
inch	DN	Carbon Steel	Stainless Steel	Carbon Steel	Stainless Steel	
3/8	10	H1100404-06	H3100204-06	H12-06	H32-06	-
1/2	12	H1100204-08	H3100204-08	H12-08	H32-08	H1400200-08
5/8	16	H1100204-10	H3100204-10	H12-10	H32-10	H1400200-10
3/4	19	H1100204-12	H3100204-12	H12-12	H32-12	H1400200-12
1	25	H1100204-16	H3100204-16	H12-16	H32-16	H1400200-16
1 1/4	31	H1100204-20	H3100204-20	H12-20	H32-20	H1400200-20
1 1/2	38	H1100204-24	H3100204-24	H12-24	H32-24	H1400200-24
2	51	H1100204-32	H3100204-32	H12-32	H32-32	H1400200-32

Hose/fitting combinations: Flexor 13, 713L, 713G

DN		FERRULE		INSERT	
inch	DN	Carbon Steel	Stainless Steel	Carbon Steel	Stainless Steel
3/4	19	H1400200-12	H3400200-12	H14-12	H34-12
1	25	H1400200-16	H3400200-16	H14-16	H34-16
1 1/4	31	H1400301-20	H3400301-20	H14-20	H34-20
1 1/2	38	H1400301-24	H3400301-24	H14-24	H34-24
2	51	H1400301-32	H3400301-32	H14-32	H34-32
		H1T00600-32			
2 1/2"	63	H1T00600-40	-	H14-40	-

Application/Limitation

Hose assemblies covered by this certificate are tested according to:

- 1) NS-EN ISO 15540: Fire resistance of hose assemblies- Test methods

2) NS-EN ISO 15541: Fire resistance of hose assemblies - Requirements for the test bench

Hose assemblies are suitable for use with petroleum base hydraulic fluids and water base hydraulic fluids.

Maximum working pressure (MAWP):

Size		Flexor 12, 712L	Flexor 13, 713L, 713G
inch	DN	MAWP (bar)	MAWP (bar)
3/8	10	280	-
1/2	12	280	-
3/4	19	280	350
1	25	280	350
1 1/4	31	207	350
1 1/2	38	172	350
2	51	172	350
2 1/2	63	-	350

Type Examination documentation

- Fire test reports (done by LAPI) numbers: 223.0IS0110/05 (FLEXOR 12 DN10) - 224.0IS0110/05 (FLEXOR 12 DN19) - 275.0IS0110/05 (FLEXOR 12 DN51)
- Fire test reports (done by LAPI) numbers: 158.0IS0110/05 (FLEXOR 13 DN19) - 276.0IS0110/05 (FLEXOR 13 DN31) - 277.0IS0110/05 (FLEXOR 13 DN51) - 386.0IS0110/05 (FLEXOR 13 DN51), 299.0IS0110/14 (Flexor R13 DN63)

Tests carried out

Fire tests carried out according to ISO 15540/15541

Marking of product

As a minimum, the final products (hoses with couplings) are to be marked with:

- Manufacturer's name or trademark
- Manufacturer's address
- Specification or hose name
- Hose size (inside diameter in inches)
- Data code (quarterly and daily production code)