EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MEDB000023M
Revision no.:
4

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 AS, Veritasveien 1, 1363 Høvik, Norway under the authority of the Government of Norway.

This is to certify:

that the **Materials other than steel for pipes conveying oil or fuel oil: — flexible pipe assemblies and compensators**

with type designation(s)
FLEXOR 1SN/1AT-HF (Dunlop Hiflex: Greenline plus 122), FLEXOR 2SN/2AT-HF (Dunlop Hiflex: Greenline plus 222), FLEXOR 1SN MINETUFF (Dunlop Hiflex: Greenline plus 122 HI-TUFF 1SN), FLEXOR 2SN MINETUFF (Dunlop Hiflex: Greenline plus 222 HI-TUFF 2SN), FLEXOPAK 1SC (Dunlop Hiflex: Slimline Plus 121T; ARGUS 1SC), FLEXOPAK 2SC-HF (Dunlop Hiflex: Slimline Plus 221T/G; ARGUS 2SC), FLEXOPAK 2 (Dunlop Hiflex: Superslimline 241T) FLEXOPAK 2 SUPERTUFF (Dunlop Hiflex: Superslimline 241X TUFLEX)

issued to

Alfagomma Hydraulic S.p.A.

Via Enrico Mattei 6 64020 Castelnuovo Vomano – Castellalto TE Italy

is found to comply with the Implementing Regulation **(EU) 2026/1434** for
Item no. **MED/3.15c** (Row **1 of 1**)
according to the following requirements:
SOLAS 74 Reg. II-2/4, IMO Res. MSC.36(63)-(1994 HSC Code) 7, IMO Res. MSC.36(63)-(1994 HSC Code) 10, IMO Res. MSC.97(73)-(2000 HSC Code) 7, IMO Res. MSC.97(73)-(2000 HSC Code) 10, IMO MSC/Circ.1120, SOLAS 74 Reg. X/3

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

Date of issue: **2026-08-31**

Expiry date: **2031-08-30**

for **DNV AS**

DNV local unit:
Italy/Malta CMC

Approval Engineer:
Jo Skjeggestad Rangnes

Notified Body no.: **0575**

Christine Mydlak-Röder
Head of Notified Body

NORSK AKKREDITERING PROD 019

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 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.

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 USD 300 000.

Product description
Flexible hose assemblies (MED/3.15c):

Please see Appendix: Product Description

Application/Limitation
Scope of approval covers only the fire resistance capability of the hoses while the review of assembling of the approved hoses and end fittings for DNV Class approval are not covered under this certification.

Please see Appendix: Application/Limitation

Type Examination documentation

Tests carried out
Fire tests according to ISO 15540/15541.

Marking of product
For traceability to this certificate, each hose shall be marked with:
- Manufacturer’s name or trademark
- Specification or hose name
- Hose size and type designation
- Date of manufacture
- Mark of conformity according to Article 10 of the Council Directive 2014/90/EU

Mark of Conformity may only be affixed to the product when the corresponding certification related to production-control phase module (D, E, or F) is valid.

APPENDIX
Product Description

Certificate no.:
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- FLEXOR 1SN/1AT-HF (Dunlop Hiflex: Greenline Plus 122) & FLEXOR 1SN MINETUFF (Dunlop Hiflex: Greenline plus 122 HI-TUFF 1SN), Designed according to EN853 / 1SN

Tube: Oil Resistant synthetic rubber
Reinforcement: One high tensile steel braid (1B)
Cover: Abrasion, ozone and hydrocarbon resistant synthetic rubber

Couplings:

Nominal size (DN / inch)		Carbon Steel 11SMnPb30 Stainless Steel AISI 316				
		Skive fittings		No Skive fittings		AG Branding*
		AG Branding	DH Branding	AG Branding	DH Branding	
6	¼	H1100204-04	D330000-04/0	H1200102-04	D110000-04/0	H1200AD1-04
8	5/16	H1100204-05	D330000-05/0	H1200202-05	D110000-05/0	H1200AD1-05
10	3/8	H1100204-06	D330000-06/0	H1200212-06	D110000-06/0	H1200AD1-06
12	½	H1100204-08	D330000-08/0	H1200212-08	D110000-08/0	H1200AD1-08
16	5/8	H1100204-10	D330000-10/0	H1200202-10	D110000-10/0	H1200AD1-10
19	¾	H1100204-12	D330000-12/0	H1200202-12	D110000-12/0	H1200AD1-12
25	1	H1100204-16	D330000-16/0	H1200202-16	D110000-16/0	H1200AD1-16
31	1 ¼	H1100104-20	H1100104-20	H1200102-20	D110000-20/0	H1200AD1-20
38	1 ½	H1100104-24	H1100104-24	H1200202-24	D110000-24/0	H1200AD1-24
51	2	H1100104-32	H1100104-32	H1200202-32	D110000-32/0	H1200AD1-32

*) AD1 couplings are Alfagomma branding of D11 Dunlop Hiflex coupling branding

- FLEXOR 2SN/2AT-HF (Dunlop Hiflex: Greenline Plus 222) & FLEXOR 2SN MINETUFF (Dunlop Hiflex: Greenline plus 222 HI-TUFF 2SN), Designed according to EN853 / 2SN

Tube: Oil Resistant synthetic rubber
Reinforcement: Two high tensile steel braids (2B)
Cover: Abrasion, ozone and hydrocarbon resistant synthetic rubber

Couplings:

Nominal size (DN / inch)		Carbon Steel 11SMnPb30 Stainless Steel AISI 316				
		Skive fittings		No Skive fittings		AG Branding*
		AG Branding	DH Branding	AG Branding	DH Branding	
6	¼	H1100404-04 H3100404-04	D330000-04/0	H1200202-04 H3200AD2-04	D220000-04/0	H1200AD2-04
8	5/16	H1100404-05 H3100404-05	D330000-05/0	H1200202-05 H3200AD2-05	D220000-05/0	H1200AD2-05
10	3/8	H1100404-06 H3100404-06	D330000-06/0	H1200212-06 H3200AD2-06	D220000-06/0	H1200AD2-06
12	½	H1100404-08 H3100404-08	D330000-08/0	H1200212-08 H3200AD2-08	D220000-08/0	H1200AD2-08
16	5/8	H1100404-10 H3100404-10	D330000-10/0	H1200202-10 H3200AD2-10	D220000-10/0	H1200AD2-10
19	¾	H1100404-12 H3100404-12	D330000-12/0	H1200202-12 H3200AD2-12	D220000-12/0	H1200AD2-12
25	1	H1100404-16 H3100404-16	D330000-16/0	H1200202-16 H3200AD2-16	D220000-16/0	H1200AD2-16
31	1 ¼	H1100404-20 H3100404-20	D330000-20/0	H1200202-20 H3200AD2-20	D220000-20/0	H1200AD2-20
38	1 ½	H1100404-24 H3100404-24	D330000-24/0	H1200202-24 H3200AD2-24	D220000-24/0	H1200AD2-24
51	2	H1100404-32 H3100404-32	D330000-32/0	H1200202-32 H3200AD2-32	D220000-32/0	H1200AD2-32

*) AD2 couplings are Alfagomma branding of D22 Dunlop Hiflex coupling branding

- FLEXOPAK 1SC (Dunlop Hiflex: Slimline Plus 121T; ARGUS 1SC), Designed according to EN857 / 1SC

Tube: Oil Resistant synthetic rubber
Reinforcement: One high tensile steel braid (1B)
Cover: Abrasion, ozone and hydrocarbon resistant synthetic rubber

- FLEXOPAK 2SC-HF (Dunlop Hiflex: Slimline Plus 221T/G; ARGUS 2SC), Designed according to EN857 / 2SC

Tube: Oil Resistant synthetic rubber
Reinforcement: Two high tensile steel braids (2B)
Cover: Abrasion, ozone and hydrocarbon resistant synthetic rubber

Couplings:

Nominal size (DN / inch)		Carbon Steel 11SMnPb30 Stainless Steel AISI 304 - AISI 316				
		FLEXOPAK 1SC			FLEXOPAK 2SC-HF	
		No Skive fittings			Skive fittings	No Skive fittings
		AG Branding	DH Branding	AG Branding*	AG Branding	AG Branding
6	¼	H1200103-04 H1200101-04	-	H1200AD1-04	H1100204-04	H1200102-04
8	5/16	H1200103-05	D110000-05	H1200AD1-05	H1100204-05	H1200202-05
10	3/8	H1200103-06	D110000-06	H1200AD1-06	H1100204-06	H1200202-06 H1200212-06
12	½	H1200103-08	D110000-08	H1200AD1-08	H1100204-08	H1200202-08 H1200212-08
16	5/8	H1200202-10	D110000-10	H1200AD1-10	H1100204-10	H1200202-10
19	¾	H1200202-12	D110000-12	H1200AD1-12	H1100204-12	H1200202-12
25	1	H1200103-16	D110000-16	H1200AD1-16	H1100204-16	H1200202-16

*) AD1 couplings are Alfagomma branding of D11 Dunlop Hiflex coupling branding

- FLEXOPAK 2 (Dunlop Hiflex: Superslimline 241T), Designed according to EN857 / 2SC

Tube: Oil Resistant synthetic rubber
Reinforcement: Two high tensile steel braids (2B)
Cover: Abrasion, ozone and hydrocarbon resistant synthetic rubber

- FLEXOPAK 2 SUPERTUFF (Dunlop Hiflex: Superslimline 241X TUFLEX), Designed according to EN857 / 2SC

Tube: Oil Resistant synthetic rubber
Reinforcement: Two high tensile steel braids (2B)
Cover: Abrasion, ozone and hydrocarbon resistant synthetic rubber

Couplings:

Nominal size		Carbon Steel 11SMnPb30 Stainless Steel AISI 304 - AISI 316					
		SKIVE				No SKIVE*	
Dash	DN	AG Branding	DH Branding	AG Branding		DH Branding	AG Branding
- 04	6	H1100204-04	D330000-04	H1100SK1-04	H3100SK1-04	D110000-04	H1200AD1-04 H3200AD1-04
- 05	8	H1100204-05	D330000-05	H1100SK1-05	H3100SK1-05	D110000-05	H1200AD1-05 H3200AD1-05
- 06	10	H1100204-06	D330000-06	H1100SK1-06	H3100SK1-06	D110000-06	H1200AD1-06 H3200AD1-06
- 08	12	H1100204-08	D330000-08	H1100SK1-08	H3100SK1-08	D110000-08	H1200AD1-08 H3200AD1-08
- 10	16	H1100204-10	D330000-10	H1100SK1-10	H3100SK1-10	D110000-10	H1200AD1-10 H3200AD1-10
- 12	19	H1100204-12	D330000-12	H1100SK1-12	H3100SK1-12	D110000-12	H1200AD1-12 H3200AD1-12 H3200AD2-12
- 16	25	H1100204-16	D330000-16	H1100SK1-16	H3100SK1-16	D110000-16	H1200AD1-16 H3200AD1-16 H3200AD2-16
- 20	31	H1100104-20	-	H1100404-20	H3100404-20	-	H1200AD1-20 H3200AD1-20

-24	38	-	-	-	H3100SK1-24	-	H1200AD1-24 H3200AD1-24
-32	51	-	-	-	H3100404-32	-	H1200AD1-32 H3200AD1-32
-40	63	-	-	-	-	-	H1200TX2-40 H3200TX2-40
-48	76	-	-	-	-	-	C122XXXXX-48 H3200TX2-48

*) AD1 couplings are Alfagomma branding of D11 Dunlop Hiflex coupling branding

Manufacturing locations:
Couplings: Alfagomma Hydraulic S.p.A., Area Industriale Piano Lago, 87050 Mangone (CS) – Italy
Hoses: Alfagomma Hydraulic S.p.A., Via Enrico Matteri no.6, 64020 – Castelnuovo Vomano (TE)
Alfagomma Hydraulic S.p.A., Area Industriale Piano Lago, 87050 Figline Vegliaturo (CS)

APPENDIX

Application/Limitation

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Hose assemblies covered by this certificate are tested according to:
1) EN ISO 15540:2016 - Fire resistance of hose assemblies - Test methods
2) EN ISO 15541:2016 - Fire resistance of hose assemblies - Requirements for the test bench

Nominal size (DN / inch)		Maximum working pressure (bar)				
		1SN/1AT-HF 1SN MINETUFF	2SN/2AT-HF 2SN MINETUFF	FLEXOPAK 1SC	FLEXOPAK 2SC-HF	FLEXOPAK 2
6	¼	225	400	225	400	420
8	5/16	215	350	215	350	375
10	3/8	180	330	210	330	350
12	½	160	275	160	275	310
16	5/8	130	250	130	250	280
19	¾	105	215	105	215	240
25	1	88	165	88	165	210
31	1 ¼	63	125	-	-	140
38	1 ½	50	90	-	-	125
51	2	40	80	-	-	100
63	2 ½	-	-	-	-	75
76	3	-	-	-	-	70