



## ***Confirmation of Product Type Approval***

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product. This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 07-MAR-2024. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

### **Product Name: Non-Metallic Flexible Hose**

**Model Name(s):** ALFAGOMMA FLEXOR 1SN/1AT HF, DUNLOP HIFLEX 122 GREENLINE PLUS ALFAGOMMA FLEXOR 1SN/1AT MINETUFF, DUNLOP HIFLEX 122 GREENLINE PLUS HI-TUFF ALFAGOMMA FLEXOR 2SN/2AT HF, DUNLOP HIFLEX 222 GREENLINE PLUS ALFAGOMMA FLEXOR 2SN/2AT MINETUFF, DUNLOP HIFLEX 222 GREENLINE PLUS HI-TUFF ALFAGOMMA FLEXOPAK 2SC HF, DUNLOP HIFLEX SLIMLINE PLUS 221T,221G ALFAGOMMA FLEXOPAK 2 MINETUFF, DUNLOP HIFLEX SUPERSLIMLINE 241T, 241G HI-TUFF ALFAGOMMA ALFATECH 3000, ALFAGOMMA 1SN HT, ALFAGOMMA 2SN HT, DUNLOP HIFLEX SP33 SERIES 3SPT, 3SPG ALFAGOMMA FLEXOR 4SH , DUNLOP HIFLEX 790L, 790G, POWERTRACK 790 ALFAGOMMA FLEXOR 4SP, DUNLOP HIFLEX 730L, 730G, POWERTRACK 730 ALFAGOMMA FLEXOR 13 ,DUNLOP HIFLEX 713L, 713G, POWERTRACK 713 ALFAGOMMA FLEXOR 12 ,DUNLOP HIFLEX 712L, POWERTRACK 712

#### **Presented to:**

ALFAGOMMA HYDRAULIC S.P.A.  
VIA E. MATTEI 6  
I-64020  
Italy

#### **Intended Service:**

Hydraulic systems (mineral and vegetable oils, glycol based oils, water/oil emulsions and water, fuel and lube oils, compressed air, air (T max 70 deg. C).

<b>Description:</b>	Oil-resistant synthetic rubber hoses reinforced with one or more high tensile steel braids or wires, covered with a synthetic rubber sheath.
<b>Tier:</b>	3
<b>Ratings:</b>	Sizes from DN6 to DN76 Pressure from 40 bar to 500 bar Temperature range -40°C to +135°C For additional details refer to the attached document.
<b>Service Restrictions:</b>	1) Unit Certification is not required for this product. If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined. 2) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. 3) Hoses are to be complete with factory assembled end fittings or factory supplied end fittings installed in accordance with manufacturer's specifications. 4) End connections are to comply with applicable requirements and limitation of Rules (4-6-2/5.5.4, 4-6-2/5.5.5, 4-6-7/3.5.1, 4-6-7/5.3.2). 5) Hose assemblies are to be installed only where flexibility is required, in clearly visible and readily accessible locations, and are not to be subject to torsional deflection under normal conditions; hose length is to be limited to that required by flexibility only. 6) Not to be used in high pressure fuel oil injection systems, steam systems or oil supply lines to boilers. 7) Not to be used for installations where repeated and/or frequent flexing is expected. 8) Models FLEXOR 1SN/1AT-HF and 1SN MINETUFF have also been tested at low temperature (-60°C) in accordance with AG Specification SWS Cold Burst Test 1/Q/IC/27/00. 9) Flexible Hoses are to be permanently marked by the manufacturer with the following details: Hose manufacturer's name or trademark, date of manufacturer (month/year), designation type reference, nominal diameter, pressure and temperature rating in accordance with Marine Vessels Rules 4-6-2/5.7.6.
<b>Comments:</b>	- Only ALFAGOMMA's approved ferrules and inserts are to be used for end fittings, as per the manufacturer's recommendations. - FLEXOR and FLEXOPAK hoses can also be identified by Dunlop-Hiflex "D-H" marking, according to the attached table. - The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
<b>Notes / Documentation:</b>	Drawing No. FireTest2SNHF at LAPI dated 28 Feb 2018, FireTest2SNHF_INOX, Revision: 0, Pages: 1 Drawing No. Fitting Drawing 2SN, Fitting drawing Inox 2SN HF, Revision: 0, Pages: 1 Drawing No. InspectionCert3.2-2SNHF at ALFAGOMMA dated 20 Jul 2015, InspectionCert3.2-2SNHF, Revision: 0, Pages: 1 Drawing No. FLEXOPAK 2 Fire test at LAPI dated 18 Oct 2017 Drawing No. Burst test at ALFAGOMMA dated 19 Apr 2017 Drawing No. TDS, Technical Data Sheet ABT, Revision: 0, Pages: 1 Drawing No. 1, DNV GL TAC P-14895 SP33 Series, Revision: 0, Pages: 1 Drawing No. 10, Data Sheet 241T, Revision: 0, Pages: 1 Drawing No. 11, Data Sheet SP33 Series, Revision: 0, Pages: 1 Drawing No. 12, Witnessed Burst Test Hoses at ALFAGOMMA dated 18 Jan 2011, Revision: 0, Pages: 1 Drawing No. 13, CO2 Cold burst test witnessed_1SN HF at ALFAGOMMA dated 22 Jul 2014, Revision: 0, Pages: 1 Drawing No. 16, Impulse Test Report 1SN MINETUFF at ALFAGOMMA dated 21 Oct 2014, Revision: 0, Pages: 1 Drawing No. 17, Impulse Test Report 2SN Minetuff at ALFAGOMMA dated 17 Oct 2014, Revision: 0, Pages: 1 Drawing No. 19, Impulse Test Report SP33 at ALFAGOMMA dated 02 Oct 2006, Revision: 0, Pages: 1 Drawing No. 20, Impulse Test Report R13 dn 63 at ALFAGOMMA dated 09 Mar 2012, Revision: 0, Pages: 1 Drawing No. 7, FIRE TEST ISO 15540 at LAPI dated 15 May 2015, Revision: 0, Pages: 1 Drawing No. 8, Data Sheet 1SN MINETUFF, Revision: 0, Pages: 1 Drawing No. 9, Data Sheet 2SN MINETUFF, Revision: 0, Pages: 1
<b>Term of Validity:</b>	This Product Design Assessment (PDA) Certificate 19-GE1836306-PDA, dated 08/Mar/2019 remains valid until 07/Mar/2024 or until the Rules or specifications used in the assessment are revised (whichever occurs first). This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product. Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA. Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.
<b>ABS Rules:</b>	2019 Rules for Conditions of Classification - Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following: 2019 Mobile Offshore Drilling

Unit Rules 4-2-1/11.29 2019 Mobile Offshore Units Rules 4-2-1/11.29 2019 Rules for Conditions of Classification 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following: 2019 Steel Vessels Rules 4-6-2/5.7 2019 Steel Vessels Rules Under 90 Meters in Length Rules 4-4-1/9.19 2019 Offshore Supply Vessel Rules 4-6-2/5.7 2019 Guide for Building and Classing Yachts 4-1-1/3.3, 4-4-1/9.19 2019 Marine Vessels Rules 4-6-2/5.7 2019 Rules for Conditions of Classification - High Speed Crafts 1-1-4/11.9, 1-1-A2, 1-1-A3, which covers the following: 2019 High Speed Craft Rules 4-4-1/9.19

**National Standards:**

**International Standards:**

EN853 Ed. 2015 EN856 Ed. 2015 EN857 Ed. 2015 SAE J517 Ed. 2017

**Government Authority:**

**EUMED:**

**Others:**

AG Specification SWS Cold Burst Test 1/Q/IC/27/00 (FLEXOR 1SN/1AT-HF only) Ed. 2014

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	19-GE1836306-PDA	15-MAR-2019	07-MAR-2024

ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.