



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 11-JAN-2023. 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: Flexible Wire Braided Rubber Hose Assembly
Model Name(s): DS1-T; DS2-T; DS2-SC; DS5

Presented to:

DIESSE RUBBER HOSES SPA
VIA PROVINCIALE, 8
BERGAMO 24040
Italy

Intended Service:	Hydraulic systems (mineral and vegetable oils, oils in aqueous emulsion, water, air)
Description:	Oil resistant synthetic rubber hoses reinforced with one or two high tensile steel wire braids, covered with a synthetic rubber sheath (one steel braid plus one textile braid for DS5 only)
Tier:	3
Ratings:	Model DS1 - T: from DN5 to DN51, from 250 bar to 40 bar Model DS2 - T: from DN5 to DN51, from 415 bar to 80 bar Model DS2 - C: from DN6 to DN25, from 420 bar to 185 bar Model DS5: from DN5 to DN46, from 207 bar to 24 bar For additional details, please refer to attachment.
Service Restrictions:	1) Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined. 2) Hoses are to be complete with factory assembled end fittings or factory supplied end fittings installed in accordance with manufacturer's specifications. 3) 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). 4) Hose assemblies are to be installed only where flexibility is required and are not to be subject to torsional deflection under normal conditions; hose length is to be limited to that required by flexibility only. 5) Not to be used for installations where repeated

and/or frequent flexing is expected. 6) 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 Steel Vessel Rules 4-6-2/5.7.6

Comments:

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. Only the Manufacturer's approved end fittings are to be used, as per the Manufacturer's recommendations

Notes / Documentation:

Fire test for DS1 dated 24 Feb 2005 at LAPI Laboratory Fire test for DS2 dated 12 Feb 2005 and 24 March 2005 at LAPI Laboratory Fire test for DS5 dated 24 Feb 2005 at LAPI Laboratory Test report DS5 dated 19 April 2005 at DIESSE Plant Test report DS1 dated 15 April 2005 at DIESSE Plant Test report DS2 dated 29 April 2005 at DIESSE Plant

Term of Validity:

This Product Design Assessment (PDA) Certificate 17-GE1697177-PDA, dated 12/Jan/2018 remains valid until 11/Jan/2023 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.

ABS Rules:

The Rules for Conditions of Classification, Part 1 2017 - Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following: Rules for Building and Classing Steel Vessels (2017) 4-6-2/5.7, 4-6-7/3.5.2 Rules for Building and Classing Steel Vessels Under 90 Meters (295 feet) in Length (2017) 4-4-1/9.19 Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways (2017) 4-3-1/7.21 Guide for Building and Classing Yachts (2017) 1-1-3/3.3, 1-1-Appendix 3 and 5 and 4-1-1/Table 3, 4-4-1/9.19 Rules for Building and Classing Steel Barges (2017) 4-1-1/1 Rules for Building and Classing High Speed Craft 1-1-4/11. (2017) 4-4-1/9.19 Rules for Building and Classing Offshore Support Vessels (OSV Rules) (2017) 4-6-2/5.7 The Rules for Conditions of Classification, Part 1 2017 - Offshore Units and Structures 1-1-A2, 1-1-A3, which covers the following: Rules for Building and Classing Mobile Offshore Drilling Units (2017) 1-1-4/9.7, Appendix 2 and 3

National Standards:**International Standards:**

EN 853/1SN Ed. 2015 (DS1-T); EN 853/2SN Ed. 2015 (DS2-T); EN 857/2SC Ed. 2015 (DS2-SC); SAE 100R5 (DS5) Ed. 2015; ISO 15540 Ed. 2016

Government Authority:**EUMED:****Others:**

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	17-GE1697177-PDA	12-JAN-2018	11-JAN-2023



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.