



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 01-JUL-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 Hose

Model Name(s): PL ABRASIVE 20 - PL ABRASIVE SD 20 - PL EFESTO SD 25 - PL FUEL 20 - PL FUEL 27 - PL FUEL SD 20 - PL FUEL SD 27 - PL FUEL SD 35 - PL FUEL SD FLOATING D1 - PL POTABLE 20 - PL POTABLE SD 20 - PL POTABLE SD FLOATING D1

Presented to:

IVG COLBACHINI SPA
VIA FOSSONA 132
35030
Italy

Intended Service:

"ABRASIVE" Hoses: Convey barite, bentonite and other abrasive materials from ship to oil rig. "EFESTO" Hoses: Suction and delivery of seawater, mud oil and petroleum products with maximum aromatic content up to 30%. "FUEL" Hoses: Suction (SD only) and delivery of petroleum products with aromatic content up to 50% and drilling mud mixed with oil. "POTABLE" Hoses: Suction (SD only) and delivery of drinking water from ship to oil rig. For additional details, see Attachment.

Description:

"ABRASIVE" Hoses: NR/SBR rubber tube with high strength synthetic cord, antistatic copper wires and EPDM rubber cover. Electrically continuous. "EFESTO" Hose: NBR rubber tube with high strength synthetic cord and flame retardant CR rubber cover. Electrically discontinuous. "FUEL" Hoses: PVC/NBR rubber tube with high strength synthetic cord, antistatic copper wires and CR rubber cover. Electrically continuous. "POTABLE" Hoses: IIR rubber tube with high strength synthetic cord and EPDM rubber cover. Electrically discontinuous. Vacuum resistant hoses (SD types) are additionally reinforced with embedded steel helix wires. All flexible hoses are provided with permanently fitted steel threaded nipple end connections and/or fixed flange end connections and/or swivel flange end connections. For additional details, see Attachment.

Tier:	3
Ratings:	Maximum Working Pressure: from 20 to 35 bar. Minimum Vacuum Pressure (SD only): 0.9 bar. Temperature rating: "ABRASIVE" from -25°C to +70°C "EFESTO" from -30°C to +90°C "FUEL" from -20°C to +90°C "POTABLE" from -40°C to +100°C For additional details, see Attachment.
Service Restrictions:	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.
Comments:	1) Routine tests as per Annex H and production acceptance tests as per Annex I of reference Standard to be carried out, as applicable. 2) PL EFESTO SD 25 flexible hoses have been satisfactory tested for fire resistance as per ISO 15540 and ISO 15541 Standards. 3) Flexible hoses are to be permanently marked by the Manufacturer as per 4-6-2/5.7.6 of ABS Steel Vessel Rules. 4) Electrically discontinuous hose assemblies (EFESTO and POTABLES) shall have, in addition, the words "ELECTRICALLY DISCONTINUOUS" in legible characters at least 10 mm permanently vulcanized onto the body of the hose. 5) In accordance with Par. 5-2-2/5.7.1 of ABS Rules for Offshore Support Vessel, Ed. 2018, for flexible hoses intended to be used as cargo transfer hoses on ABS Classed vessels having Class Notation "Offshore Support Vessel", the maximum expected service pressure of the cargo transfer system has not to exceed 1/5 of the burst pressure. 6) Flexible hoses are not suitable for the transfer of limited amount for hazardous and noxious liquid substances as listed in 5-2-3/Table 1 of ABS Rules for Offshore Support Vessel, Ed. 2018. 7) Flexible hoses are not to be used for installations in piping systems where pressure pulse and/or high levels of vibrations are expected to occur in service as per Par. 4-6-2/5.7.3 of ABS Rules for Steel Vessels, Ed. 2018. 8) Flexible hoses intended to be used for transfer of flammable media and not certified as fire resistant (PL FUEL 20, PL FUEL 27, PL FUEL SD 20, PL FUEL SD 27, PL FUEL SD 35 and PL FUEL SD FLOATING D1) are not to be installed in onboard piping system. 9) Flexible hoses are to be completed with factory assembled end fittings or factory supplied end fittings installed in accordance with Manufacturer's specifications as per Par. 4-6-2/5.7.3(b) of ABS Rules for Steel Vessels, Ed. 2018 10) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. 11) The scope of Type Approval is to comply with MSC.1/Circ.1221 dated 11 December 2006.
Notes / Documentation:	Drawing No. 10V-159-14, PL Fuel SD 20, Revision: 04 Drawing No. 10V-160-14, PL Fuel SD 27, Revision: 04 Drawing No. 10V-161-14, PL Fuel SD 35, Revision: 04 Drawing No. 10V-162-14, PL Potable SD 20, Revision: 05 Drawing No. 10V-163-14, PL Abrasive SD 20, Revision: 04 Drawing No. 10V-164-14, PL Fuel SD Floating D1, Revision: 04 Drawing No. 10V-165-14, PL Potable SD Floating D1, Revision: 05 Drawing No. 10V-166-14, PL EfestO SD 25, Revision: 05 Drawing No. 10V-167-14, PL Fuel 20, Revision: 04 Drawing No. 10V-168-14, PL Fuel 27, Revision: 04 Drawing No. 10V-169-14, PL Abrasive 20, Revision: 04 Drawing No. 10V-170-14, PL Potable 20, Revision: 04 Drawing No. FD-09-16-INT, Project drawing: Rubber hose with crimping fittings, Revision: 00 Drawing No. FD-10-16-INT, Threaded types, Revision: 00 Drawing No. FD-11-16-INT, Fixed flange types, Revision: 00 Drawing No. FD-12-16-INT, Swivel flange types, Revision: 00 Technical data sheet, PL ABRASIVE 20, Revision: 00 Technical data sheet, PL ABRASIVE SD 20, Revision: 00 Technical data sheet, PL EFESTO SD 25, Revision: 00 Technical data sheet, PL FUEL 20, Revision: 00 Technical data sheet, PL FUEL 27, Revision: 00 Technical data sheet, PL FUEL SD 20, Revision: 00 Technical data sheet, PL FUEL SD 27, Revision: 00 Technical data sheet, PL FUEL SD 35, Revision: 00 Technical data sheet, PL FUEL SD FLOATING D1, Revision: 00 Technical data sheet, PL POTABLE 20, Revision: 00 Technical data sheet, PL POTABLE SD 20, Revision: 00 Technical data sheet, PL POTABLE SD FLOATING D1, Revision: 00 WPQR Table, Welding procedure qualification record Material Properties Certificates ABS job No. VE2957668 dated 30 July 2015 - Physical properties of rubber compounds and finished hose assemblies as per Table 3 and 4 of BS EN 1765 Standard dated 30 July 2015 at IVG COLBACHINI, Test Reports No. from 1799 to 1809 dated 27 July 2015 at IVG COLBACHINI - Physical properties of finished hose assemblies as per Table 4 of BS EN 1765 Standard, Fire Resistance Test Report No. 1491.0IS0110/14 dated 30 Sept 2014 at LAPI – PL EFESTO Diam. 19 mm, Fire Resistance Test Report No.

1492.0IS0110/14 dated 30 Sept 2014 at LAPI – PL EFESTO Diam. 76 mm, Fire Resistance Test Report No. 262.0IS0110/15 dated 09 March 2015 at LAPI– PL EFESTO Diam. 203 mm.

Term of Validity:


This Product Design Assessment (PDA) Certificate 18-GE1736024-PDA, dated 02/Jul/2018 remains valid until 01/Jul/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:

Rules for Condition of Classification (2018): 1-1-4/7.7, 1-1-A3 and A4, which covers the following: Rules for Building and Classing Steel Vessels (2018): 4-6-2/5.7; Rules for Building and Classing Offshore Support Vessels (2018): 4-6-2/5.7, 5-2-2/5.7; Rules for Building and Classing Steel Vessels Under 90 Meters (295 Feet) in Length (2018): 4-4-1/9.19; Rules for Conditions of Classifications – Offshore Units and Structures (2018): 1.1.4/9.7, 1-1-A2 and A3, which covers the following: Rules for Building and Classing Mobile Offshore Drilling Units (2018): 4-2-1/11.29

- National Standards:**
- International Standards:**
- Government Authority:**
- EUMED:**
- Others:**

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	18-GE1736024-PDA	02-JUL-2018	01-JUL-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.