



CERTIFICATE NUMBER
17-GE1665795-PDA

DATE
25 Sep 2017

ABS TECHNICAL OFFICE
Genoa Engineering Department

CERTIFICATE OF DESIGN ASSESSMENT

This is to certify that a representative of this Bureau did, at the request of
ELETTROTEK KABEL SPA

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: **Cable, Low Voltage Shipboard**

Model: **GAALSHIP HF 1000 GAALSHIP HF 1000 A GAALSHIP HF 1000 A EMC
GAALSHIP HF 1000 A FR EMC GAALSHIP HF 1000 FR GAALSHIP HF 1000 A
FR**

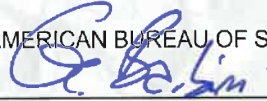
This Product Design Assessment (PDA) Certificate 17-GE1665795-PDA, dated 25/Sep/2017 remains valid until 24/Sep/2022 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

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.

AMERICAN BUREAU OF SHIPPING


Giorgio Barbini
Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by the terms and conditions as contained in ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010).

ELETTROTEK KABEL SPA

VIA TONDELLI 10

BAGNOLO IN PIANO (RE)

Italy 42011

Telephone: +390522956001

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Email: info@eletrotekkabel.com

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Tier: 2 - PDA Issued

Product: Cable, Low Voltage Shipboard
Model: GAALSHIP HF 1000
GAALSHIP HF 1000 A
GAALSHIP HF 1000 A EMC
GAALSHIP HF 1000 A FR EMC
GAALSHIP HF 1000 FR
GAALSHIP HF 1000 A FR

Intended Service:

Fixed wiring on ship, offshore and marine applications

Description:

Low Voltage power and control cables, Copper conductor, XLPE insulation, Assembly cores laid up, armoured (A) and unarmoured, collective shield CU/PET, Fire resistant (FR), Thermoplastic external sheath LSOH (SHF1 type)

Rating:Rated Voltages U₀/U [V]: 0.6/1 kV

Maximum rated conductor temperature: 90°C

Service Restriction:

1) Unit Certification is required for the cables used for propulsion systems.

All propulsion cables, other than internal wiring in control gears and switchboards, are to be subjected to dielectric and insulation tests in the presence of the Surveyor (See 4-8-5/5.17.11 (e) of 2017 Steel Vessels Rules.)

2) For uses other than propulsion 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.

Comments:

The following cable markings are to be provided in accordance with IEC 60092-353:

- Indication of origin (manufacturer's name or trademark)
- Rated voltage (U₀/U)
- Construction (number of cores and cross sectional area of the conductor)

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes/Drawing/Documentation:

Drawing No. GAALSHIP MARINE CABLES - Data sheets

Certificate ISO 9001 2014 TÜV SÜD Italia No. 50 100 10735 – Rev.2 dated 13/11/2014

Certificate IQNET 2015 No.IT-13142 dated 21/05/2015

IMQ Type Test Report No. CN16-0005784-01 (HF 1000 30x1 mm²) dated 21/12/2016IMQ Type Test Report No. CN16-0005784-02 (HF 1000 A 1x300 mm²) dated 21/12/2016IMQ Type Test Report No. CN16-0005784-03 (HF 1000 FR 1x300 mm²) dated 28/03/2017IMQ Type Test Report No. CN16-0005784-04 (HF 1000 A FR 30x1 mm²) dated 28/03/2017IMQ Type Test Report No. CN16-0005784-05 (HF 1000 FR WSR 30x1 mm²) dated 21/12/2016IMQ Type Test Report No. CN16-0005784-06 (HF 1000 A FR WSR 1x300 mm²) dated 21/12/2016**Terms of Validity:**

This Product Design Assessment (PDA) Certificate 17-GE1665795-PDA, dated 25/Sep/2017 remains valid until 24/Sep/2022 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

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Tier: 2 - PDA Issued

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.

STANDARDS

ABS Rules:

2017 Rules for Conditions of Classification, 1-1-4/7.7, 1-1-Appendix 3 and 4, which covers the following:
2017 Steel Vessel Rules 4-8-3/9
2017 Offshore Support Vessels, 4-8-3/9
2017 Steel Vessels Under 90 Meters (295 Feet) in Length, 4-6-4/13
2017 International Naval Ships 4-8-3/9

2017 Rules for Conditions of Classification – Offshore Units and Structures 1-1-4/9.7, 1-1-Appendix 2 and 3, which covers the following:

2017 Mobile Offshore Drilling Unit Rules, 4-3-4/7
2017 Facilities on Offshore Installations 3-6/13

National:

NA

International:

IEC 60228:2004
IEC 60092-350:2014
IEC 60092-352:2005
IEC 60092-353:2011
IEC 60092-360:2014
IEC 60332-1-2: 2004 + A1 2015
IEC 60332-3-22: 2000 + A1 2008
IEC 60331-1:2009
IEC 60331-2:2009
IEC 60331-21: 1999
IEC 61034-1: 2005 + A1 2013
IEC 61034-2: 2005 + A1 2013
IEC 60754-1: 2011
IEC 60754-2: 2011
EN 50334: 2001
CENELEC HD 308 S2: 2001

Government:

NA

EUMED:

NA

OTHERS:

NA



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 24-SEP-2022. 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: Cable, Low Voltage Shipboard

Model Name(s): GAALSHIP HF 1000 GAALSHIP HF 1000 A GAALSHIP HF 1000 A EMC GAALSHIP HF 1000 A FR EMC GAALSHIP HF 1000 FR GAALSHIP HF 1000 A FR

Presented to:

I.C.E.L.S.C.P.A.
VIA TORRICELLI 4/6
48022
Italy

Intended Service:	Fixed wiring on ship, offshore and marine applications
Description:	Low Voltage power and control cables, Copper conductor, XLPE insulation, Assembly cores laid up, armoured (A) and unarmoured, collective shield CU/PET, Fire resistant (FR), Thermoplastic external sheath LSOH (SHF1 type)
Tier:	3
Ratings:	Rated Voltages U _o /U [V]: 0.6/1 kV Maximum rated conductor temperature: 90°C
Service Restrictions:	1) Unit Certification is required for the cables used for propulsion systems. All propulsion cables, other than internal wiring in control gears and switchboards, are to be subjected to dielectric and insulation tests in the presence of the Surveyor (See 4-8-5/5.17.11 (e) of 2017 Steel Vessels Rules.) 2) For uses other than propulsion 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.
Comments:	The following cable markings are to be provided in accordance with IEC 60092-353: - Indication of origin (manufacturer's name or trademark) - Rated

voltage (U_o/U) - Construction (number of cores and cross sectional area of the conductor) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes / Documentation:

Drawing No. GAALSHIP MARINE CABLES - Data sheets Certificate ISO 9001 2014 TÜV SÜD Italia No. 50 100 10735 – Rev.2 dated 13/11/2014 Certificate IQNET 2015 No.IT-13142 dated 21/05/2015 IMQ Type Test Report No. CN16-0005784-01 (HF 1000 30x1 mm²) dated 21/12/2016 IMQ Type Test Report No. CN16-0005784-02 (HF 1000 A 1x300 mm²) dated 21/12/2016 IMQ Type Test Report No. CN16-0005784-03 (HF 1000 FR 1x300 mm²) dated 28/03/2017 IMQ Type Test Report No. CN16-0005784-04 (HF 1000 A FR 30x1 mm²) dated 28/03/2017 IMQ Type Test Report No. CN16-0005784-05 (HF 1000 FR WSR 30x1 mm²) dated 21/12/2016 IMQ Type Test Report No. CN16-0005784-06 (HF 1000 A FR WSR 1x300 mm²) dated 21/12/2016

Term of Validity:

This Product Design Assessment (PDA) Certificate 17-GE1665795-PDA-DUP, dated 18/Oct/2018 remains valid until 24/Sep/2022 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:

2017 Rules for Conditions of Classification, 1-1-4/7.7, 1-1-Appendix 3 and 4, which covers the following: 2017 Steel Vessel Rules 4-8-3/9 2017 Offshore Support Vessels, 4-8-3/9 2017 Steel Vessels Under 90 Meters (295 Feet) in Length, 4-6-4/13 2017 International Naval Ships 4-8-3/9 2017 Rules for Conditions of Classification – Offshore Units and Structures 1-1-4/9.7, 1-1-Appendix 2 and 3, which covers the following: 2017 Mobile Offshore Drilling Unit Rules, 4-3-4/7 2017 Facilities on Offshore Installations 3-6/13

National Standards:**International Standards:**

IEC 60228:2004 IEC 60092-350:2014 IEC 60092-352:2005 IEC 60092-353:2011 IEC 60092-360:2014 IEC 60332-1-2: 2004 + A1 2015 IEC 60332-3-22: 2000 + A1 2008 IEC 60331-1:2009 IEC 60331-2:2009 IEC 60331-21: 1999 IEC 61034-1: 2005 + A1 2013 IEC 61034-2: 2005 + A1 2013 IEC 60754-1: 2011 IEC 60754-2: 2011 EN 50334: 2001 CENELEC HD 308 S2: 2001

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

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA-DUP	17-GE1665795-PDA-DUP	18-OCT-2018	24-SEP-2022



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.