



Marine &amp; Offshore

Certificate number: 49770/A0 BV

File number: ACE1/847/2

Product code: 2505H

*This certificate is not valid when presented without the full attached schedule composed of 7 sections*

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## TYPE APPROVAL CERTIFICATE

*This certificate is issued to*

**ELETTROTEK KABEL S.p.A.**

Bagnolo in Piano (RE) - ITALY

*for the type of product*

**INSTRUMENTATION AND COMMUNICATION CABLES**

GAALSHIP HF 250 cables

150/250V

### Requirements:

Bureau Veritas Rules for the Classification of Steel Ships  
 Bureau Veritas Rules for the Classification of Offshore Units  
 Bureau Veritas Rules for the Classification of Naval Ships  
 Bureau Veritas Rules for the Classification of Yachts

IEC 60092-350 (2014), IEC 60092-360 (2014), IEC 60092-376 (2003)  
 IEC 60228 (2004)  
 IEC 60331-21 (1999)  
 IEC 60332-1-2 (2004 + A1 2015), IEC 60332-3-22 Cat.A (2000 + A1 2008)  
 IEC 60754-1/2 (2011)  
 IEC 61034-1/2 (2005 + A1 2013)

*This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.*

**This certificate will expire on: 14 Jun 2023**

### For Bureau Veritas Marine & Offshore,

At BV VENEZIA, on 14 Jun 2018,  
 Sandro BRUSEGAN



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION :

GAALSHIP HF 250 are instrumentation cables flame retardant/fire resistant, low smoke and halogen free for fixed electrical installations aboard ships.

#### 1.1 - Specifications :

Rated voltage	150/250 V
Temperature range	-40°C to +90°C
Fire resistant	IEC 60331-1/2/21 (FR type) EN 50200 Annex E, BS 8491 (WSR type)
Flame retardant	IEC 60332-1-2, IEC 60332-3-22 Cat.A
Low smoke	IEC 61034-1/2
Halogen free	IEC 60754-1/2

#### 1.2 - Construction :

Conductor	Red copper or Tinned copper conductor - Class 2
Fire resistant layer	MICA glass tape (FR type)
Insulation	XLPE HF90 (WSR type)
Individual screen	Aluminium/polyester tape with tinned annealed copper stranded drain wire (IS type)
Overall screen	Aluminium/polyester tape with tinned annealed copper stranded drain wire (OS type)
1st wrapping	Glass fiber tape (WSR type)
2nd wrapping	Two plain annealed copper/ polyester tapes (WSR type)
3rd wrapping	Glass fiber tape (WSR type)
Armour	Red copper wires braid or tinned copper wires braid
Outer sheath	Halogen free thermoplastic compound - SHF1

#### 1.3 - Product range :

Type	Number of cores	Cross-section (mm <sup>2</sup> )
HF 250 OS HF 250 OS FR HF 250 OS FR WSR HF 250 OSA HF 250 OSA FR HF 250 OSA FR WSR HF 250 A HF 250 A FR HF 250 A FR WSR	1P to 37P 1T to 24T 1Q to 24Q	0.5 to 2.5
HF 250 IS HF 250 IS FR HF 250 IS FR WSR HF 250 ISA HF 250 ISA FR HF 250 ISA FR WSR HF 250 ISOS HF 250 ISOS FR HF 250 ISOS FR WSR HF 250 ISOSA HF 250 ISOSA FR HF 250 ISOSA FR WSR	2P to 37P 2T to 24T	0.5 to 2.5

### 2. DOCUMENTS AND DRAWINGS :

Specifications extracted from GAALSHIP marine cables catalog, dated 2018 as indicated in the ELETTROTEK KABEL statement, dated 07 June 2018 : *File "GAALSHIP HF 250 cables type.pdf" submitted to Bureau Veritas on 07 June 2018.* ELETTROTEK KABEL range of sections, dated 07 Jun 2018.

**3. TEST REPORTS :****IMQ**

CN16-0005784-09, dated 08 Mar. 2017  
CN16-0005784-08, dated 21 Dec. 2016  
CN16-0005784-07, dated 21 Dec. 2016  
CN16-0005244-04, dated 14 Nov. 2016  
CN16-0005244-01, dated 14 Nov. 2016  
CN16-0005784-13, dated 27 Feb. 2017  
CN16-0005784-12, dated 27 Feb. 2017  
CN16-0005784-07, dated 21 Dec. 2016  
CN16-0005784-11, dated 08 Mar. 2017

**4. APPLICATION / LIMITATION :**

BUREAU VERITAS Rules and Regulations for the Classification of Steel Ships, Offshore Units, Naval Ships and Yachts.

**5. PRODUCTION SURVEY REQUIREMENTS :**

5.1- The INSTRUMENTATION AND COMMUNICATION CABLES are to be supplied by **ELETTROTEK KABEL S.p.A** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **ELETTROTEK KABEL S.p.A** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

5.4 - For information, **ELETTROTEK KABEL S.p.A** has declared to Bureau Veritas the following manufacturing locations:

- Via Torricelli, 4/6, 48022 Lugo (RA), ITALY - Ref. A46 & A48
- Via A. Pacinotti, 32, 36040 Brendola (VI), ITALY - Ref. A47

**6. MARKING OF PRODUCT :**

The cable shall be marked on the surface outer sheath, in a durable legible and visible manner, with the following information through the length of cable:

- Voltage grade.
- Number of conductors and conductor size.
- Applicable standard(s) to flame retardant and fire resistance if any.
- Manufacturer's name or trade mark.
- Year of manufacture

**7. OTHERS :**

It is **ELETTROTEK KABEL S.p.A**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

\*\*\* END OF CERTIFICATE \*\*\*