



Marine & Offshore  
Division

Certificate number: 29327/A0 BV

File number: ACE 01/103/19

Product code: 2501H

*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*  
**HELKAMA BICA OY**  
KAARINA - FINLAND

*for the type of product*  
**CABLES (LOW VOLTAGE)**  
300/500 V & 0.6/1kV  
LKEM-HF series

### Requirements:

Bureau Veritas Rules for the Classification of Steel Ships.

IEC 60092-350/351/353/359/376 (2008), IEC 60228 (2004), IEC 60332-1 (2004),  
IEC 60332-3-22 Cat.A (2009), IEC 60754-1/2 (2011), IEC 61034-1/2 (2013).

*This certificate is issued to attest that BUREAU VERITAS 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: 10 Dec 2019**

**For BUREAU VERITAS,**  
At BV HELSINKI, on 10 Dec 2014,  
Tommy Andersson



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. 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 Division 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 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.

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BV Mod. Ad.E 530 October 2014

This certificate consists of 3 page(s)

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION :

Halogen free, Flame retardant. Low voltage power, lighting and switchboard wiring cable for installations in marine, offshore applications.

#### 1.1 - Common specifications:

Rated voltage: 300/500V (0.5mm<sup>2</sup>), 0.6/1kV (0.75 to 300mm<sup>2</sup>)  
 Temperature class: 90°C  
 Halogen Free: IEC 60754-1/2  
 Low Smoke: IEC 61034-1/2  
 Flame retardant: IEC 60332-1-2 and IEC 60332-3-22 (Cat. A)

#### 1.2 - Construction:

Conductor: Stranded or tinned plain annealed copper - Class 5  
 Insulation: Halogen Free Cross-Linked PolyEthylene - HF 90

#### 1.3- Product Range:

Type	Number of core	Cross Sectional Areas (mm <sup>2</sup> )	Temp. Class	Remarks
LKEM - HF	1	0.75 to 300 mm <sup>2</sup>	90°C	0.6/1kV Flame retardant Power, lighting and switchboard cable.
LKEM-HF	1	0.5 mm <sup>2</sup>	90°C	300/500V

### 2. DOCUMENTS AND DRAWINGS :

- Cable data sheet, Specification HBKQ9.Spec.68, 7.2.2012/dk
- According to document filed in ACE 01/103/03.

### 3. TEST REPORTS :

Test reports issued on:

- Ref. F622078 on 2006/11/29
  - Ref. FX 016825 on 2010/10/29
  - Work number W16081 on 01/03/2012
  - Work number W016081 on 01/03/2012
  - According to 28.05.90 by Helkama in house laboratory - DNV witnessing to test has been carried out in ACE 01/103/03
  - According to 03.11.99 by Helkama in house laboratory in ACE 01/103/03
- Tests reports on LKAM-HF / LKM-HF / LKM-SHF2 / LKSM-EMC / LKSM-EMC-SHF2 / LKSM-HF / LKSM-SHF2 dated on 2014.

### 4. APPLICATION / LIMITATION :

- 4.1 - BUREAU VERITAS Rules for the Classification of Steel Ships and IEC 60092-3 series.
- 4.2 - To be used for internal cabling of control gear only.

### 5. PRODUCTION SURVEY REQUIREMENTS :

- 5.1 - The cables are to be supplied by **HELKAMA BICA OY** 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.
- 5.3 - **HELKAMA BICA OY** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products :  
**1 - Helkama Bica Oy, Lasitehtaankatu 12, 10960 Hanko, Finland**  
**2 - Helkama Bica Oy, Lakimiehenkatu 4, 20780 Kaarina, Finland**  
**3 - Helkama Bica (Shanghai) Co., Ltd., Plot 1-2, MinHang Export Processing Zone, No.3111 Huan Cheng West Road, Fengxian District, Shanghai 201401 P.R.C.**

### 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:

- 1) - Voltage grade.
- 2) - Cable symbol and temperature class.
- 3) - Number of conductors and conductor size.
- 4) - Applicable standards to flame retardant(s) and fire resistant, if any.
- 5) - Manufacturer's name or trade mark.
- 6) - Year of manufacture.

**7. OTHERS :**

This approval is given with the understanding that **HELKAMA BICA OY**, will accept full responsibility for informing shipbuilders, shipowners and/or their sub-contractors of the proper methods of fitting and general maintenance of the approved equipments and the conditions of this approval.

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