



Marine & Offshore  
Division

Certificate number: 14533/C0 BV

File number: ACE 01/103/16

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*  
**HELKAMA BICA OY**  
KAARINA - FINLAND

*for the type of product*  
**INSTRUMENTATION AND COMMUNICATION CABLES**  
150/250V  
LKM-HF, LKAM-HF, LKM-SHF2, LKSM-SHF2, LKAM-SHF2, LKSM-HF.

### Requirements:

BV 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 :

| Type  | Number of cores   | Cross Sectional Areas (mm <sup>2</sup> ) | Temp. Class | Remarks   |
|---|---|--|-------------|---|
| LKM-HF / LKM-SHF2<br>LKSM-HF / LKSM-SHF2<br>LKAM-HF/LKAM - SHF2 | 2, 3, 4, 5, 7, 10, 12,<br>14, 16, 19, 20, 24,<br>27, 32, 37, 61 | 0,5 / 0,75 / 1,0 mm <sup>2</sup>         | 90°C        | 250V Halogen Free,<br>flame retardant,<br>screened power and control<br>cables. |

#### Construction:

- Conductor: Stranded or tinned , plain annealed copper, conductor 0,5 / 0,75 / 1,0 mm<sup>2</sup>. IEC 60228 class 2.

- Insulation: Consisting of one layer of halogen free material:

Crosslinked polyethylene plastic IEC 60092-351/XLPE.

Applied by an extrusion process. Low smoke propagation.

- Screen: Polyester coated aluminium tape.

- Armour: Braid of plain or tinned copper wires.

- Sheath: SHF1 or SHF2.

### 2. DOCUMENTS AND DRAWINGS :

2.1 - According to document filed in ACE 01/103/16.

2.2 - Cable data sheet specification N° HBKQ 9.SPEC. 56 issued on 30.12.2004.

### 3. TEST REPORTS :

Helkama in-house Laboratory Test Reports N°s:

Dim/LKSM-HF 250V TT ; MC\_I/LKSM-HF 250V TT ; Hotset/LKSM-HF 250V TT ;

MC\_S/LKSM-HF 250V TT ; MC\_S\_oil/LKSM-HF 250V TT ; Hot def/LKSM-HF 250V TT ;

HST/LKSM-HF 250V TT ; Cold/LKSM-HF 250V TT ; IEC 60332-1-2/LKSM-HF 250V TT ;

IEC 60332-3-22/LKSM-HF 250V TT ; IEC 61034/LKSM-HF 250V TT ; IEC 61034-1;2 ;

IEC 60754-1/LKSM-HF 250V TT ; IEC 60754-2/LKSM-HF 250V TT, issued on 15.09.2004.

Tests reports on LKAM-HF / LKM-HF / LKM-SHF2 / LKSM-EMC / LKSM-EMC-SHF2 / LKSM-HF / LKSM-SHF2 dated on

2014.

SP Sveriges Provnings- och Forskningsinstitut Test Reports N°s:

P302884 issued on 20.11.2003 and P401368 issued on 08.07.2004.

### 4. APPLICATION / LIMITATION :

BUREAU VERITAS Rules for the Classification of Steel Ships and IEC 60092-3 series.

### 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 :

| Name of Production Sites                | Address  | Country                    |
|---|--|----------------------------|
| <b>HELKAMA BICA OY</b>                  | <b>FIN-10960 - Hanko</b>                         | <b>FINLAND</b>             |
| <b>HELKAMA BICA (Shanghai) Co., LTD</b> | <b>Plot 1-2, FengPu Export Processing 201401</b> | <b>Shanghai (P. R. C.)</b> |
| <b>HELKAMA BICA OY</b>                  | <b>Lasitehtaankatu 12, 10960 Hanko</b>           | <b>FINLAND</b>             |

### 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 :**

7.1 - 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.

7.2 - This Certificate supersedes the Type Approval Certificate N° 14533/B0 BV issued on 23.06.2009. by the Society.

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