



MARINE DIVISION

Certificate number: 05535/F1 BV

File number: ACE 01/103/07

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)

0.6/1 kV

Type: LKM-HF, LKSM-HF, LKSM-EMC and LKAM-HF

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships.

IEC 60092-350/351/353/359, IEC 60332-1-2, IEC 60332-3-22 (Cat.A), IEC 60754-1/2, IEC 61034-1/2.

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: 23 Jun 2014

For BUREAU VERITAS,

At BV HELSINKI, on 11 Jun 2012,

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 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.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Flame retardant, low smoke and Halogen Free, Marine & Offshore Power, Lighting and Control cables.

1.1 - Common specifications:

Rated voltage: 0.6/1 kV according to IEC 60092-353
 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 plain annealed copper - Class 2 or Class 5
 Insulation: Halogen Free Cross-Linked PolyEthylene - HF XLPE
 Armour / Screen: Copper tape + Copper wire braid (EMC Type only)
 Outer Sheath: Halogen Free Thermoplastic compound - SHF1

1.3- Product Range:

Type	Number of core	Cross sectional areas (mm ²)	Remarks
LKM - HF and LKSM - HF	1 2 3 4 5 7, 10 12, 14 16, 19 24, 27 37	1 to 300 1 to 95 1 to 240 1 to 120 1 to 25 1 to 2.5 1 to 2.5 1 to 2.5 1 to 2.5 1 to 2.5	Flame retardant according to IEC 60332-1-2 & 60332-3-22 Cat.A
LKAM - HF	2, 3, 4 5, 7 10, 12 14, 16 19, 24 27, 37	1 to 2.5 1 to 2.5 1 to 2.5 1 to 2.5 1 to 2.5 1 to 2.5	Flame retardant according to IEC 60332-1-2 & 60332-3-22 Cat.A
LKSM - EMC	1, 2, 5, 7 10, 12 14, 16 19, 24 27, 37	1 to 240 1 to 240 1 to 240 1 to 240 1 to 240	Flame retardant according to IEC 60332-1-2 & 60332-3-22 Cat.A Enhanced EMC characteristics

2. DOCUMENTS AND DRAWINGS:

HELKAMA BIKA:

As per document filed in ACE 01/103/07

Cable data sheet specifications N°s: HBKQ 9. SPEC. 3, HBKQ 9. SPEC. 5, HBKQ 9. SPEC. 28, issued on 20.09.2004

Cable data sheet specifications N°s: HBKQ 9. SPEC. 3 and HBKQ 9. SPEC. 5, dated 1.11.2006

Cable data sheet specification N°: HBKQ 9. SPEC. 59, dated 20.5.2008.

3. TEST REPORTS:

HELKAMA BIKA:

Test Reports N°s: LKAM-HF / ATT 3X1-5.XLS, LKM-HF / 1TT 3X1 - 5.XLS, LKM-HF / 1TT 3X70.XLS, LKSM-HF / STT 3X1 - 5.XLS, LKSM-HF / 3X70.XLS, all issued on 25 February 1999.

Test Report N°: TT_LKSM-EMC 3x6 and Annexes dated 08.08.2008.

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 manufactured, examined and tested by **HELKAMA BICA OY** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - Production sites are to be recognized by Bureau Veritas as per NR320 for HBV products. To this end **HELKAMA BICA OY** has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.

5.3 - **HELKAMA BICA OY** has declared to Bureau Veritas that the type of product described in this certificate are manufactured at the following production sites:

1 - Helkama Bica Oy, Lakimiehenkatu 4, 20780 Kaarina, Finland

2 - Helkama Bica Oy, Lasitehtaankatu 12, 10960 Hanko, 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:

7.1 - This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the cables at any time and that **HELKAMA BICA OY, Lakimiehenkatu 4, 20780, KAARINA - FINLAND** will accept full responsibility for informing shipbuilders, ship-owners or their sub-contractors of the proper methods of use and general maintenance of the cables and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 05535/F0 BV issued on 23/06/2009 by the Society.

*** END OF CERTIFICATE ***