



Marine & Offshore
Division

Certificate number: 06103/E0 BV

File number: ACE 01/103/08

Product code: 2505H

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

www.veristar.com

TYPE APPROVAL CERTIFICATE

This certificate is issued to

HELKAMA BICA OY

KAARINA - FINLAND

for the type of product

INSTRUMENTATION AND COMMUNICATION CABLES

150/250 V

RFE-SHF2(i), RFE-SHF2, RFE-HF(i) & RFE-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.

The electronic version is available at: <http://www.veristarp.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=llwncdyhsd>

BV Mod. Ad.E 530 October 2014

This certificate consists of 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

Flame retardant, low smoke and Halogen Free , Marine and Offshore control and instrumentation cables.

Common specifications and Construction:

Rated voltage: 150/250 (300) V

Insulation: XLPE

Temperature class: 90 °C

Conductor: Stranded or tinned conductor composed of plain annealed copper

Pair/Quadruple: Twisted pair with a short lay or four conductors twisted together (for 1x4 only)

Pair shielding: Polyester coated aluminium tape, ground tinned copper conductor (only for RFE(i) cables)

Covering: Separator tape of non-hygroscopic material

Armour: Braid of plain copper wires (may also be use like an electrostatic collective screen)

Sheath: Thermoplastic, Halogen Free SHF1 or SHF2 - Thermoset.

Product Range:

<i>Type</i>	<i>Number of cores</i>	<i>Cross-Sect. areas (mm²)</i>
RFE-HF RFE - SHF2	1 x 2	0.50 - 0.75 - 1.50
	1 x 3	"
	1 x 4	"
	2 x 2	"
	4 x 2	"
	7 x 2	"
	8 x 2	"
	10 x 2	"
	12 x 2	"
	14 x 2	"
	16 x 2	"
	19 x 2	"
	24 x 2	"
	32 x 2	"
37 x 2	"	
RFE-HF (i) RFE - SHF2 (i)	1 x 2	0.50 - 0.75 - 1.50
	1 x 3	"
	1 x 4	"
	2 x 2	"
	4 x 2	"
	7 x 2	"
	8 x 2	"
	10 x 2	"
	12 x 2	"
	14 x 2	"
	16 x 2	"
	19 x 2	"
	24 x 2	"
	27 x 2	"
30 x 2	"	
32 x 2	"	
37 x 2	"	

2. DOCUMENTS AND DRAWINGS :

HELKAMA specifications HBKQ 9.Spec.25 (RFE-FRHF) and Spec.45 (RFE-FRHF(i)) Updated 07.04.2005.

Note: Documents filed in ACE 01/103/10.

3. TEST REPORTS :

Test report dated 1995-05-16 and 1995-04-05 & 06 (electrical test) issued by HELKAMA in-house laboratory
 1995-05-16 issued by HELKAMA in house laboratory
 1995-04-11 issued by FIMKO under ref. N° 181753-03.

Report: N° GLRFEFR08-97

HELKAMA Reports:

Test report dated 1995-05-16 and 1995-04-05 & 06 (electrical test) issued by HELKAMA in house laboratory
 1995-05-16 issued by HELKAMA in-house laboratory.

N° 075TT67579 dated 05.10.2000
 N° 4e.IEC 332-1_s/ FR075TT67579 dated 27.09.2000
 N° IEC 331_c/ FR075TT67579 dated 05.10.2000
 N° IEC 331_i/ FR075TT67579 dated 05.10.2000
 Front / TT tests 8.3.2006 (BV 30777HSK06) with annexed test reports.

SP reports:

N° 99R2 3461B dated 04.02.1999
 N° 99R2 3913 dated 24.01.2000
 N° 99R2 3913B dated 25.01.2000
 N° 99K6 1506:A dated 1999-02-01.

Laboratories: HELKAMA BICA OY, REKA OY, Laboratory of analytical chemistry (Abo Akademi University) SP Sveriges Provnings- och Forskningsinstitut.

Note: Test reports filed in ACE 01/103/10.

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 type RFE-HF(i) and RFE-HF** 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 :

HELKAMA BICA OY
FIN-10960 - Hanko
FINLAND

HELKAMA BICA (Shanghai) Co., LTD
Plot 1-2, FengPu Export Processing Zone
201401 - Shanghai, CHINA

HELKAMA BICA OY,
Lakimiehenkatu 4,
20780 Kaarina, Finland

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° 06103/D0 BV issued on 23.06.2009. by the Society.

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