



Marine & Offshore  
Division

Certificate number: 10497/D0 BV

File number: ACE 01/103/14, 15

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**

150/250 V

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

### Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships.

IEC 60092-350 (2014), 376 (2014), 360 (2014), IEC 60228 (2004), IEC 60754-1/2 (2011), IEC 61034-1/2 (2013), IEC 60332-1 (2004), IEC 60332-3-22 Cat.A (2009).

*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: 11 Dec 2020**

For BUREAU VERITAS,

At BV HELSINKI, on 11 Dec 2015,

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](http://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:

Flame retardant, low smoke and halogen free, Marine and Offshore control and instrumentation cables.

#### 1.1 - Specifications:

Rated voltage: 150/250V

Insulation: HF XLPE

Temperature class: 90 °C

#### 1.2 - Construction:

Conductor: Stranded or tinned conductor composed of plain annealed copper, twisted pair with a short lay

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

Covering: Separator tape of non-hygroscopic material

Screen: Aluminium polyester tape, coverage 100%, tinned drain wire under the tape

Sheath: Thermoplastic, Halogen Free SHF1 or SHF2 - Thermoset

#### 1.3 - Product Range:

Type	Number of cores	Cross-Sect. areas (mm <sup>2</sup> )
RFA-HF RFA-SHF2	1 x 2	0.50 - 0.75 -1.50
	1 x 3	"
	1 x 4	"
	2 x 2	"
	3 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	"
RFA-HF(i) RFA-SHF2(i)	2 x 2	0.50 - 0.75 -1.50
	3 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 Cable Data Sheet HBKQ 9.SPEC.41 (RFA-HF) & 40 (RFA-HF(i)) Updated 30.12.2014.  
 HELKAMA Technical Specification Appendix 2 HBKQ 9.SPEC.41 (RFA-HF) & 40 (RFA-HF(i)) Updated 30.11.2015.  
 HELKAMA Cable Data Sheet HBKQ 9.SPEC.119 (RFA-SHF2 & 120 (RFA-SHF2(i))) Updated 30.12.2014.  
 HELKAMA Technical Specification Appendix 2 HBKQ 9.SPEC.119 (RFA-HF) & 120 (RFA-HF(i)) Updated 4.12.2015.

**3. TEST REPORTS:**

Helkama Bica OY test reports: N° 05TT68879 dated 05.10.2000  
 N° 05TT68880 dated 05.10.2000  
 N° 075TT67584 Updated 14.07.2005  
 Front / TT tests 8.3.2006 (BV 30777HSK06) with annexed test reports

SP test reports:  
 N° 99R2 3461B dated 1999-02-04  
 N° 99R2 3461C dated 1999-02-04  
 N° 99R2 3913 dated 24.1.2000  
 N° 99R2 3913B dated 25.1.2000  
 N° P007451 dated 2000-08-07  
 N° P007451B dated 2000-08-11  
 N° 99K6 1506A dated 1999-02-01  
 N° 99K6 1506:B dated 1999-02-01

**4. APPLICATION / LIMITATION:**

BUREAU VERITAS Rules for the Classification of Steel Ships and IEC60092 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
HELKAMA BICA OY	FIN-10960 - Hanko	FINLAND
HELKAMA BICA (Shanghai) Co., LTD	Plot 1-2, FengPu Export Processing 201401	Shanghai (P. R. C.)
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° 10497/C1 BV issued on 07.Dec.2014. by the Society.

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