



Certificate No. 03-001773/031474

TYPE APPROVAL CERTIFICATE

This is to certify that this product complies with the Rules for the classification of ships, Part 1 - General requirements, Chapter 3 - Type approval of products.

TYPE AND DESCRIPTION OF PRODUCT:

**SHIPBOARD INSTRUMENTATION, COMMUNICATION AND CONTROL CABLE
HALOGEN FREE AND FLAME RETARDANT**

**RFE-HF / RFE-HF(i)/ RFE-EMC/ RFE-EMC(i) 150/250 V (300 V)
RFE-SHF2 / RFE-SHF2(i)/ RFE-EMC-SHF2 / RFE-EMC-SHF2(i) 150/250 V (300 V)**

MANUFACTURER:

HELKAMA BICA Oy
Lakimiehenkatu 4
FI-20780 Kaarina
FINLAND

ADDITIONAL PLACES OF PRODUCTION:

HELKAMA Bica Oy, Lasitehtaankatu 12, FI-10960 Hanko, FINLAND

THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:

CRS RULES FOR THE CLASSIFICATION OF SHIPS, PART 12 - ELECTRICAL EQUIPMENT

Helkama specification: HBKQ 9 spec. 10, 36, 77, 78, 114, 115, 131 and 132

Technical specification:

Design standard: IEC 60092-376 Ed.3.0 (2017-05),
Cable for control and instrumentation circuits 150/250 V (300 V)

Other standards:

- testing: IEC 60092-350 Ed.5.0 (2020-01), General constructions and testing requirements
- insulation: IEC 60092-360 Ed.1.0 (2014-04), Insulating materials for shipboard power cables
- sheathing: IEC 60092-360 Ed.1.0 (2014-04),
Sheathing materials for shipboard power and telecommunication cables

FURTHER DETAILS OF THE PRODUCT AND CONDITIONS FOR CERTIFICATION ARE GIVEN OVERLEAF.

APPROVAL IS VALID UNTIL: **2024-02-10**

Place and date: Split, 2020-10-09

Seal

Marinko Popović, dipl.ing.

NOTE: This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Croatian Register of Shipping of any modification or changes to the product in order to obtain a valid certificate.

DETAILED PRODUCT DESCRIPTION:

Flame retardant, halogen free, crosslinked polyethylene insulated, polyolefine sheathed, instrumentation, communication and control cable.

The RFE-EMC/RFE-EMC-SHF2 is designed with enhanced Electromagnetic compatibility (EMC) characteristics.
 The RFE-EMC(i)/RFE-EMC-SHF2(i) is designed with enhanced Electromagnetic compatibility (EMC) characteristics.
 RFE-HF/RFE-SHF2 – Collective screen (250 V)
 RFE-HF(i)/ RFE-SHF2(i) – Collective & individual screen (250 V)

**RFE-HF/ RFE-SHF2
RFE-EMC/ RFE-EMC-SHF2**

Number of cores	<u>Cross Sect area [mm²]</u>
Pairs: 1 to 37	0.5, 0.75 & 1.5
Triple: 1	0.5, 0.75 & 1.5
Quads: 1	0.5, 0.75 & 1.5

**RFE-HF(i)/ RFE-SHF2(i)
RFE-EMC(i)/ RFE-EMC-SHF2(i)**

Number of cores	<u>Cross Sect area [mm²]</u>
Pairs: 1 to 37	0.5, 0.75 & 1.5
Triple: 1	0.5, 0.75 & 1.5
Quads: 1	0.5, 0.75 & 1.5

APPLICATION / LIMITATIONS:

Fixed installations in marine, offshore and industrial use.

TYPE APPROVAL DOCUMENTATION:

Helkama RFE-HF/RFE-SHF2 250 V Cable Data Sheet Specification HBKQ 9. Spec 10/114	2020-02-28
Helkama RFE-HF(i)/RFE-SHF2(i) 250 V Cable Data Sheet Specification HBKQ 9. Spec 36/115	2020-07-09
Helkama RFE-EMC/RFE-EMC-SHF2 250 V Cable Data Sheet Specification HBKQ 9. Spec 77/131	2020-07-09
Helkama RFE-EMC(i)/RFE-EMC-SHF2(i) 250 V Cable Data Sheet Specification HBKQ 9. Spec 78/132	2020-07-09

Test report:

RFE-HF/TT doc_h/ 15tt0199; Dim/15tt0199, 15.11.1999/dk; Ins_res/15tt0199, 5.11.1998/dk
 TR 2011-01-25 Delta N312910
 Helkama Test report for SHF2 sheathed cables dated 19.03.2012.

MARKING OF PRODUCT:

LOT ##### RFE-HF/RFE-SHF2 <number of conductors> x <size> mm² 250 V + 90°C IEC 60092-376,
 60332-3-22 HELKAMA "month-year" and "length marking"

LOT ##### RFE-HF(i)/ RFE-SHF2(i)/ RFE-EMC/ RFE-EMC(i)/ RFE-EMC- SHF2/ RFE-EMC- SHF2 (i) <number of
 unit(s)> x <unit> x <size> mm² 250 V + 90°C IEC 60092-376,
 60332-3-22 HELKAMA "month-year" and "length marking"

CONDITIONS FOR CERTIFICATION:

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