



Certificate No. 03-002005/031705

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 FIRE RESISTANT

RFE-FRHF / RFE-FRHF(i) 150/250 V (300 V)
RFE-FRSHF2 / RFE-FRSHF2(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. 25, 45, 117 and 118

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 (2021-01), Insulating materials for shipboard power cables
- sheathing: IEC 60092-360 Ed.1.0 (2021-01),
Sheathing materials for shipboard power and telecommunication cables

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

APPROVAL IS VALID UNTIL: **2028-02-10**

Place and date: Split, 2024-02-11

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, fire resistant, halogen free, crosslinked polyethelene (XLPE) insulated, (armoured) screened, polyolefine sheathed, instrumentation, control cable 150/250 V (300 V).

RFE-FRHF/RFE-FRSHF2 – Collectively screened

RFE-FRHF(i)/ RFE-FRSHF2(i) –Individually and collectively screened

RFE-FRHF/RFE-FRSHF2

<u>No of pairs</u>	<u>Cross sectional area (mm²)</u>
1, 2, 4, 7, 8, 10, 12, 14, 16, 19, 24, 32 and 37	0.75, 1.0, 1.5, 2.5
1x3, 1x4 (quadruple)	0.75, 1.0, 1.5, 2.5

RFE-FRHF(i)/ RFE-FRSHF2(i)

<u>No of pairs</u>	<u>Cross sectional area (mm²)</u>
1, 2, 3, 4, 7, 8, 10, 12, 14, 16, 19, 24, 27, 30, 32 & 37	0.75, 1.0, 1.5, 2.5
1x3, 1x4 (quadruple)	0.75, 1.0, 1.5, 2.5

APPLICATION / LIMITATIONS:

Fixed installations in marine, offshore and industrial use.

TYPE APPROVAL DOCUMENTATION:

Helkama RFE-FRHF/RFE-FRSHF2 150/250 V (300 V) Cable Data Sheet Specification HBKQ 9. Spec 25/117	2020-02-06
Helkama RFE-FRHF(i)/RFE-FRSHF2(i)150/250 V (300 V) Cable Data Sheet Specification HBKQ 9. Spec 45/118	2020-02-06

Test report:

2.MC1_i_comp/FR075TT67579;2.MC1_S/FR075TT67579; 3a.Hotdet_s/FRO 755TT67579; 4b.HST_S/FR075TT67579; 3bCold_S/FRO 755TT67579; 4E.IEC 332-1_S/FR075TT67579

IEC 60332-3A/FR075TT67579; IEC 61034-2/FR075TT67579

IEC 331_i/FR075TT67579; IEC 331_c/FR075TT67579

Helkama Test report for SHF2 sheathed cables dated 19.03.2012.

MARKING OF PRODUCT:

LOT ##### RFE-FRHF/ RFE-FRSHF2/ RFE-FRHF(i)/ RFE-FRSHF2(i) "number of core" x "size of conductor" mm² 250 V + 90°C IEC 60092-376, 60331-2 (180) or 60331-1 (180), 60332-3-22 HELKAMA "month-year" and "length marking"

CONDITIONS FOR CERTIFICATION:

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