



Marine & Offshore
Division

Certificate number: 13561/C1 BV

File number: ACE 01/113/09

Product code: 2505I

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

UNIKA UNIVERSAL KABLO SANAYI VE TICARET A.S.
TEKIRDAG - TURKEY

for the type of product

INSTRUMENTATION AND COMMUNICATION CABLES

150/250 V.

U-HFxxxx m & FMGCH series.

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships.

IEC 60092-350/360/376 (2014), IEC 60331-11/21 (1999), IEC 60332-1 (2004), IEC 60332-3-22 Cat.A (2009), IEC 61034-1/2 (2013), IEC 60754-1/2 (2011).

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: 14 Oct 2019

For BUREAU VERITAS,

At BV ISTANBUL, on 18 Jun 2015,

Gurcan Yilmaz



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=oqezwvixe0>

BV Mod. Ad.E 530 October 2014

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Instrumentation and communication cables for Marine and Offshore applications.

1.1 - Common specifications:

Rated voltage:	150/250
Temperature class:	90°C
Flame retardant:	IEC 60332-1 and IEC 60332-3-22 Cat. A
Fire resistant:	IEC 60331-11/21 (FR Type only)
Halogen Free:	IEC 60754-1/2 (Outer Sheath)
Low Smoke:	IEC 61034-1/2

1.2 - Construction:

Conductor:	Plain or tinned stranded copper - Class 2 or Class 5
Fire protection:	Mica tape (FR Type only)
Insulation:	Cross-Linked PolyEthylene - XLPE, HEPR (FMGCH, FMGCH-FR)
Inner Covering:	Halogen free filler or tape
Armouring:	Copper braiding or ALPES+Drain wire (I=Individual, C=Collective)+Copper Braiding or steel wire braiding)
Outer Sheath:	Halogen Free Thermoplastic compound - SHF1

1.3 - Approval range:

Type	Number of core	Cross Sect. (mm ²)
U-HFAT m	1P to 24P	0.50, 0.75, 1.5
U-HFAT m (C)	1T	
U-HFAT m (I+C)	1Q	
U-HFAT m (I)	1P to 19P	0.75
U-HFT m (I)	1T	
	1Q	
U-HFFRAT m	1P to 24P	0.50, 0.75
U-HFFRAT m (C)	1T	
U-HFFRAT m (I+C)	1Q	
U-HFFRAT m (I)	1 to 24P	0.50, 0.75, 1.0, 1.5
	1T	
	1Q	
FMGCH	1P to 14P	0.75
	1T	
	1Q	
FMGCH-FR	1P to 7P	0.75
	1T	
	1Q	

2. DOCUMENTS AND DRAWINGS:

UNIKA:

Data sheets U-HFAT m and U-HFAT m-EMC.

Data sheets for additional cable type (U-HFAT m (C), U-HFAT m (I+C), U-HFFRAT m (C) & U-HFFRAT (I+C)) dated 02.02.2007.

Data sheet for U-HFFRAT m (I) dated 11.11.2011.

Data sheet N°4152831 & N°4152832, Rev. 0/0, dated 11.Sep.2013.

Data sheet for U-HFAT m (I).

Data sheet for U-HFT m (I)

3. TEST REPORTS:

TSE: Report N° 0.16.01.05/2002-1631, dated 19/06/2002.

UNIKA:

Test Report Quality Control Number 1489, dated 28.08.2002.

Routine tests, order 357 dated 22.01.2007, stamped by BV Surveyor.

Routine tests dated 03.08.2009 and stamped by BV Surveyor.

Cable Design Form U-HFFRAT m (I) 1x2x0.75mm² dated 18.07.2011.

Cable Design Form U-HFFRAT m (I) 24x2x1.0mm² dated 18.07.2011.

Cable Design Form U-HFFRAT m (I) 5x2x1.5mm² dated 18.07.2011.

Cable Design Form U-HFFRAT m (I) 2x2x0.75mm² dated 18.07.2011.

Cable Design Form U-HFFRAT m (I) 1x2x1.5mm² dated 18.07.2011.

Cable Design Form U-HFFRAT m (I) 1x2x1.0mm² dated 18.07.2011.
Electrical and Physical Tests Report N° NS11001-01/02/03/04/05/06 dated August 2011.
Fire Resistivity Test Report according to IEC 60331-21 dated 18.07.2011.
Flame Propagation Test Report according to IEC 60332-3-22 dated 14.09.2011.
Flame Retardancy Test Report according to IEC 60332-1 dated 18.07.2011.
Smoke Density Test Report according to IEC 61034-2 dated 18.07.2011.
Tests reports N°13-439/3560, dated 03.Mar.2014.
Halogen acid gas content tests reports dated 17.Mar.2014.
Mutual capacitance and measurements ratio dated 10.Mar.2014.
Smoke density tests reports dated 03.Mar.2014.
Flame propagation tests reports dated 03.Mar.2014.
Fire resistivity tests reports dated 03.Mar.2014.
Cold impact tests reports dated 10.Mar.2014.
Tests reports dated 05.May.2015, witnessed by BV's Surveyor.
Tests reports dated 08.Jun.2015.

Türk Pirelli Material Laboratory: Test Report N° 279/3, dated 29/05/2002.

NEXANS: Fire Resistivity Test Report, unreferenced, dated 08/07/2004, stamped by BV Surveyor.

4. APPLICATION / LIMITATION:

BUREAU VERITAS Rules for the Classification of Steel Ships and IEC 60092 series.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The cables are to be supplied by **ÜNİKA ÜNİVERSAL KABLO SANAYİ VE TİCARET A.S** in compliance with the type and the requirements described in this certificate.

5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.

5.3 - BV product certificate is required.

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 standard(s) to flame retardant and fire resistance 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: **ÜNİKA ÜNİVERSAL KABLO SANAYİ VE TİCARET A.S** will accept full responsibility for informing shipbuilders, shipowners 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° 13561/C0 BV issued on 14.10.2014. by the Society.

*** END OF CERTIFICATE ***