



MARINE DIVISION

Certificate number: 13371/C0 BV

File number: ACE 01/742/02

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*

**NEXANS TURKIYE ENDUSTRI VE TICARET A.S.**  
ISTANBUL - TURKEY

*for the type of product*

**INSTRUMENTATION AND COMMUNICATION CABLES**

150/250 V  
FMKHC (LMKHC) & FMKHC-F (LMKHC-FR).

**Requirements:**

BUREAU VERITAS Rules for the Classification of Steel Ships.

IEC 60092-350/351/359/376, IEC 60228, IEC 60332-1, IEC 60332-3-22 Cat.A, IEC 60331, IEC 60754-1/2, IEC 61034-1/2.

*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 is a renewal of certificate N° 13371/B0 BV, which expires on 24/03/2014*

**This certificate will expire on: 06 Jun 2019**

**For BUREAU VERITAS,**

At BV ISTANBUL, on 06 Jun 2014,

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 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 SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION:

Flame retardant, fire resistant (-F/-FR Type only), low smoke and Halogen Free Marine and Offshore Communication cables.

#### 1.1 - Common specifications:

Rated voltage:	150/250 V according to IEC 60092-376
Temperature class:	90°C
Flame retardant:	IEC 60332-1 and IEC 60332-3-22 Cat. A
Fire resistant	IEC 60331(-F/-FR Type only)
Low smoke:	IEC 61034-1/2
Halogen Free:	IEC 60754-1/2

#### 1.2 - Construction:

Conductor:	Plain or tinned copper - Class 2
Fire barrier:	Mica Glass tape (-F/-FR Type only)
Insulation:	Halogen Free Cross-Linked Polyethylene - HF XLPE
Inner Covering:	Halogen Free tape
Braiding / Screening:	Plain copper wires braid
Separator:	Optional Halogen Free tape
Outer Sheath:	Halogen Free polyolefin - SHF1

#### 1.3 - Product Range:

Type	Number of Pair	Cross sect. (mm <sup>2</sup> )	Remarks
<b>FMKHC (LMKHC) FMKHC-F (LMKHC-FR)</b>	1P to 48P	0.5 & 0.75	Flame retardant according to: IEC 60332-1 & IEC 60332-3-22 Cat.A Fire resistant according to IEC 60331(-F/-FR Type only) Halogen Free according to IEC 60754-1/2 Low smoke according to IEC 61034-1/2

### 2. DOCUMENTS AND DRAWINGS:

#### Nexans:

Product Description file.

Unreferenced and undated Data Sheets and Tables of Cable Ranges (received in 02/2009).

### 3. TEST REPORTS:

#### **Cables FMKHC 250 V**

Test Results, by NEXANS, dated 6-7/10/2003 and witnessed by BUREAU VERITAS:

- FMKHC 250 V cables, representative samples are 1 x 2 x 0.75 mm<sup>2</sup>
- FMKHC 250 V cables, representative samples are 7 x 2 x 0.75 mm<sup>2</sup>
- FMKHC 250 V cables, representative samples are 14 x 2 x 0.75 mm<sup>2</sup>

#### **Cables FMKHC-F 250 V**

Test Results, by NEXANS, dated 12/02/2004 and witnessed by BUREAU VERITAS:

Two Test Certificates, by NEXANS, dated 12/02/2004 and stamped by BUREAU VERITAS:

- FMKHC-F 250 V cables, representative samples are 2 x 2 x 0.75 mm<sup>2</sup>.

Routine Tests and Flame / Fire Tests dated 02/2009 and witnessed by BUREAU VERITAS:

- FMKHC-F 250 V cables, representative sample is 2 x 2 x 0.75 mm<sup>2</sup>

Tests report N°KK.F.079, dated 22.05.2014, witnessed by BV's Surveyor.

### 4. APPLICATION / LIMITATION:

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

### 5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above cables are to be supplied by **NEXANS TURKIYE ENDUSTRI VE TICARET 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
- 3) Applicable standard(s) to flame retardant and fire resistance if any.
- 4) Number of conductor & conductor size
- 5) Manufacturer's name or trade mark
- 6) Year of manufacture.
- 7) Meter marking.

**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 **NEXANS TURKIYE ENDUSTRI VE TICARET A.S.** will accept the responsibility for informing shipbuilders 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° 13371/B0 BV issued on 24.03.2009 by the Society.

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