



MARINE DIVISION

Certificate number: 13116/B0 BV

File number: ACE 01/726/02

Product code: 25011

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

DRAKA CABLES INDUSTRIAL SLU

Santa Perpetua de Mogoda - SPAIN

for the type of product

CABLES (LOW VOLTAGE)

FIREX PROTECH ZH H07Z1-K (AS) - 450/750 V
FIREX PROTECH EVOLUCION ZH RZ1-K (AS) - 0.6/1 kV

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

IEC 60092-350/351/359, IEC 60228, IEC 60332-1, IEC 60332-3-22 Cat.A, 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 will expire on: 29 Sep 2015

For BUREAU VERITAS,

At BV MADRID, on 29 Sep 2010,

Montserrat Espin



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:

1.1 - Common Specifications:

Flame retardant:	IEC 60332-1
Flame spread:	IEC 60332-3-22
Halogen Free:	IEC 60754-1/2
Low smoke:	IEC 61034-1/2

1.2 - Firex Protech ZH - H07Z1-K (AS):

1.2.1 - Specifications / Construction (HD 21.15):

Rated voltage:	450/750 V
Temperature class:	70°C
Conductor:	Bare copper - Class 5 according to IEC 60228
Insulation:	Halogen Free Thermoplastic compound

1.2.2 - Product Range:

Type	Number of Core	Cross Sect. Area (mm ²)	Remarks
FIREX PROTECH ZH H07Z1-K (AS)	1	1.5 to 240	Flame retardant (IEC 60332-1) Flame spread (IEC 60332-3-22) Halogen Free (IEC 60754-1/2) Low smoke (IEC 61034-1/2)

1.3 - Firex Protech Evolucion ZH - RZ1-K (AS):

1.3.1 - Specifications / Construction (UNE 21.123-4):

Rated voltage:	0.6/1 kV
Temperature class:	90°C
Conductor:	Bare copper - Class 5 according to IEC 60228
Insulation:	Cross-Linked PolyEthylene
Sheath:	Halogen Free compound

1.3.2 - Product Range:

Type	Number of Core	Cross Sect. Area (mm ²)	Remarks
FIREX PROTECH EVOLUCION ZH RZ1-K (AS)	1	1.5 to 300	Flame retardant (IEC 60332-1) Flame spread (IEC 60332-3-22) Halogen Free (IEC 60754-1/2) Low smoke (IEC 61034-1/2)
	2	1.5 to 16	
	3G & 4G	1.5 to 16	
	5G	1.5 to 35	
	4	6 to 185	

2. DOCUMENTS AND DRAWINGS:

According to manufacturer's specifications filed in ACE 01/726/02.

3. TEST REPORTS:

3.1 - Test report N°s:

12564/3 issued by Draka cables on 25/02/2003
22020687 issued by LGAI on 22/07/2002
12562/3 issued by Draka cables on 25/02/2003
22019415 issued by LGAI on 17/02/2003
12563/3 issued by Draka cables on 25/02/2003
23005274 issued by LGAI on 17/02/2003
22019850 issued by LGAI on 11/07/2002
22019853 issued by LGAI on 15/07/2002

3.2 - All above tests were witnessed by a Society's Surveyor.

3.3 - Issued by Draka Cables: IEC 603321-1: Test Reports No: 294/08 dated 28/10/2008, No: 298/09 dated 11/02/2009, No: 320/10 dated 01/07/2010 and No: 321/10 dated 09/07/2010.

3.4 - Issued by Draka Cables: IEC 603321-3-22: Test Reports No: 556/10 dated 05/07/2010, No: 557/10 dated 13/07/2010.

3.5 - Issued by CEIS: Test Report No. L-ELC-CBL.06/2510/06.

Note: 1) LGAI - Laboratori General d'Assaigs i Investigaciones.

4. APPLICATION / LIMITATION:

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

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The **Firex Protech ZH** cables are to be manufactured, examined and tested by **DRAKA CABLES INDUSTRIAL SLU** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - Arrangements shall be made for a Society's Surveyor to attend the relevant tests and examinations at manufacturer's works or to perform the relevant audits when an alternative survey scheme (BV Mode I) has been agreed. Relevant Bureau Veritas certificate will be issued after satisfactory completion of the procedure.

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.
- 5) - Manufacturer's name or trademark.
- 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:

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SPAIN

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° 13116/A1 BV issued on 29/06/2004 by the Society.

*** END OF CERTIFICATE ***