



CERTIFICATE NUMBER
16-GD1512334-PDA

DATE
11 Aug 2016

ABS TECHNICAL OFFICE
Gdynia Engineering Department

CERTIFICATE OF Design Assessment

This is to certify that a representative of this Bureau did, at the request of

2M KABLO SAN. VE TIC. A.S.

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: **Cable, Power and Control**

Model: **FireKab BFOI; BFCI; BFOI (C); BFCI (C) FE180 0.6/1 kV; FireKab BFOI; BFOI (I); BFCI (I) ; BFOI (C); BFOI (I&C); BFCI (I&C) FE180 150/250 V**

This Product Design Assessment (PDA) Certificate 16-GD1512334-PDA, dated 11/Aug/2016 remains valid until 10/Aug/2021 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING

Arkadiusz Pytkowski
Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by the terms and conditions as contained in ABS Rules 1-1-A/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2016).

AB228(0110)

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Tier: 2 - PDA Issued

Product: Cable, Power and Control**Model:** FireKab BFOI; BFCI; BFOI (C); BFCI (C) FE180 0.6/1 kV;

FireKab BFOI; BFOI (I); BFCI (I) ; BFOI (C); BFOI (I&C); BFCI (I&C) FE180 150/250 V

Intended Service:

Low voltage power and control cables for electrical equipment of shipboard applications.

Not intended for use as propulsion cables.

Description:

Fire resistant halogen-free, power and control cables

Insulation: XLPE

Flame barrier: Mica Tape

Inner Sheath / Separator: Halogen free filler or Polyester tape

Screen / Armour: Electrolytic Copper Wire Braiding (90% Coverage) and drain wire or galvanised steel braid

Sheath: Halogen-free, flame retardant compound (HFFR) (SHF1) (Green)

Rating:

Voltage grade: 0.6/1 kV (Power), 150/250 V (Control)

Maximum conductor operating temperature: 85 deg. C

Lowest ambient temperature for fixed installation: -40 deg. C

Service Restriction:

Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments:

1. The installation of single conductor cables are to be in accordance to 4-8-4/21.7 of Steel Vessel Rules 2016.
2. The armor of single-conductor alternating-current cables is to be non-magnetic in accordance to 4-8-3/9.11 of Steel Vessel Rules 2016.
3. The following cable markings are to be provided in accordance with IEC 60092-353:
Indication of origin (manufacturer's name or trade mark) and rated voltage (Uo/ U) and construction (number of cores and cross sectional area of the conductor).
4. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes/Drawing/Documentation:

Drawing No. 0155-1-15, BFOI/BFCI FE180 0.6/1 kV Data Sheet, Revision: -, Pages:

Drawing No. 0158-3-15, BFOI FE180 150/250 V Data Sheet, Revision: -, Pages:

Drawing No. 0249-15, BFOI(I&C)/BFCI(I&C) FE180 150/250 V Data Sheet, Revision: -, Pages:

Drawing No. 0250-2-15, BFOI(C)/BFCI(C) FE180 0.6/1 kV Data Sheet, Revision: -, Pages:

Drawing No: 0155-2-15, BFOI/BFCI FE180 0.6/1 (1.2) kV Data Sheet, Revision: -, Pages

Drawing No: 0158-4-15, BFOI FE180 150/250 (300) V Data Sheet, Revision: -, Pages

Drawing No: 0249-1-15, BFOI (I&C)/BFOI (I&C) FE180 150/250 (300) V Data Sheet, Revision: -, Pages

Drawing No: 0250-3-15, BFOI (C) / BFCI (C) FE180 0.6/1 (1.2) kV Data Sheet, Revision: -, Pages

Drawing No. BFOI FE180 0.6-1 kV 3X1.5, Test Report_2M Kablo_Smoke Density_PRD00051430_21.01.2016,

Revision: -, Pages:

Drawing No. BFOI (C) FE180 150-250 (300) V 3x2x0, Test Report_2M Kablo_Smoke

Density_PRD00051445_05.01.2016, Revision: -, Pages:

Drawing No. Test_Report_Zwick-Roell_PRD00051430 FireKab BFOI FE180, 0.6-1 kV

3X1.5_21.01.2016_Revision: -, Pages:

Drawing No. FireKab BFOI FE180 0.6-1 kV 3x1.5mm², TSE_Test Report - PRD00051430_IEC 60754-1 & -2,

04.02.2016 Revision: -, Pages:

Drawing No. FireKab BFOI FE180 0.6-1 kV 3x1.5mm², TSE_Test Report - PRD00051430_IEC 60684-2,

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11.03.2016 Revision: -, Pages:

Drawing No. Test_Report_Zwick-Roell_PRD00051445 FireKab BFOI (C) FE180 150-250 _13.01.2016 Revision: -, Pages:

Drawing No. FireKab BFOI (C) FE180 150-250 V 3x2x0.5 mm2, TSE_Test Report - PRD00051445_IEC 60684-2, 08.03.2016 Revision: -, Pages:

Drawing No. FireKab BFOI (C) FE180 150-250 V 3x2x0.5 mm2, TSE_Test Report - PRD00051445_IEC 60754-1 & -2, 04.02.2016 Revision: -, Pages:

Drawing No. Test_Report_Zwick-Roell_PRD00051430_FireKab BFOI FE180 0.6-1 kV 3X1.5, 13.01.2016 Revision: -, Pages: -

Drawing No. Test Report_2M Kablo - IS3059526, 04.02.2016 Revision: -, Pages: -

Terms of Validity:

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STANDARDS**ABS Rules:**

Steel Vessel Rules (2016): 1-1-4/7.7, 1-1-A3&A4, 4-8-3/9.1, 4-8-3/9.3, 4-8-3/9.5, 4-8-3/9.7, 4-8-3/9.9

Steel Vessels Under 90 Meters (295 Feet) in Length (2016): 1-1-4/7.7, 1-1-A3&A4, 4-6-4/13.1.1, 4-6-4/13.1.2, 4-6-4/13.1.3, 4-6-4/13.1.4

Offshore Support Vessels (2016): 1-1-4/7.7, 1-1-A3&A4, 4-8-3/9.1, 4-8-3/9.3, 4-8-3/9.5, 4-8-3/9.7, 4-8-3/9.9

Steel Vessels for Service on Rivers and Intracoastal Waterways (2016): 1-1-4/7.7, 1-1-A3&A4, 4-5-4/13.1.1, 4-5-4/13.1.2, 4-5-4/13.1.3, 4-5-4/13.1.4, 4-5-4/13.1.5

High-Speed Craft (2016): 1-1-4/11.9, 1-1-A2&A3, 4-6-4/13.1.1, 4-6-4/13.1.2, 4-6-4/13.1.3, 4-6-4/13.1.4, 4-6-4/13.1.5

Steel Barge Rules (2016): 1-1-4/7.7, 1-1-A3&A4

National:

NA

International:

IEC 60228 (2004), IEC 60092-353 (2011), IEC 60092-350 (2014), IEC 60332-1 (2004), IEC 60332-3-22 (2009) (Category A), IEC 60332-3-10 (2009), IEC 61034 (2013), IEC 60754-1 (2011), IEC 60754-2 (2011), IEC 60092-376 (2003), IEC 60684-2 (2011), IEC 60811-501 (2012), IEC 60331-21 (2009)

Government:

NA

EUMED:

NA

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OTHERS:
NA