



Marine & Offshore

Certificate number: 12046/D1 BV

File number: ACE 01/733/03

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

TURK PRYSMIAN KABLO VE SISTEMLERI A.S.
BURSA - TURKEY

for the type of product

CABLES (LOW VOLTAGE)

1XC4Z1-R or -K, 1XZ1-R or -K, 1J2XC4Z1-R or -K, 1XC7Z1-R or -K EMC
0.6/1kV

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships
IEC 60092-350 (2014), IEC 60092-353 (2016), IEC 60092-360 (2014)
IEC 60228 (2004)
IEC 60331-11 (1999) + AMD1 (2009), IEC 60331-21 (1999)
IEC 60332-1-2 (2004) + AMD1 (2015)
IEC 60332-3-22 Cat.A (2000) + AMD1 (2008)
IEC 60754-1 (2011), IEC 60754-2 (2011)
IEC 61034-1 (2005), IEC 61034-2 (2005)

This certificate is issued to attest that Bureau Veritas Marine & Offshore 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: 13 Mar 2023

For Bureau Veritas Marine & Offshore,

At BV ISTANBUL, on 19 Feb 2019,
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 Marine & Offshore. 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 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 Marine & Offshore 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.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Flame retardant, Fire resistant (FR Type only) Marine and Offshore power, lighting and control cables.

1.1 - Specifications:

Rated voltage:	0.6/1 kV according to IEC 60092-353
Temperature Class:	90°C
Flame retardant:	IEC 60332-1 and 60332-3-22 Cat.A
Fire resistant:	IEC 60331-21 (1J2XC4Z1 Type)
Halogen Free:	IEC 60754-1/2
Low Smoke:	IEC 61034-1/2

1.2 - Construction:

Conductor:	Stranded plain copper - Class 2 (-R type) or Class 5 (-K type)
Fire protection:	Mica tape (1J2XC4Z1 type)
Insulation:	XLPE
Screen:	Copper wires braid (1XC4Z1 and 1J2XC4Z1 type) Copper tape and copper wires braid (1XC7Z1 type)
Outer sheath:	SHF1

1.3 - Product Range:

Cable type	Number of core	Cross-sectional area [mm ²]
1XC4Z1-R (LSM-HF) 1XC4Z1-K (LSM-HF)	1 to 4	1.5 to 240
1XZ1-R (LM-HF) 1XZ1-K (LM-HF)	5	1.5 to 50
1J2XC4Z1-R (LSM-FRHF) 1J2XC4Z1-K (LSM-FRHF)	6 to 60	1.5 to 4
1XC7Z1-R (LSM-HF) EMC 1XC7Z1-K (LSM-HF) EMC	1 to 5	25 to 95

2. DOCUMENTS AND DRAWINGS:

Specification Ref. RD-HAR-2018/05-12, Rev. 03, dated 25 jan 2019.
Specification Ref. RD-HAR-2019/28-01, Rev. 01, dated 28 jan 2016.
Specification Ref. RD-HAR-2019/28-01a, Rev. 01, dated 28 jan 2016.
Specification Ref. RD-HAR-2019/09-01, Rev. 03, dated 25 jan 2019.

3. TEST REPORTS:

3.1 - Test report issued by Russian Maritime Register of Shipping dated 10.05.2002.
3.2 - Test report: N° 21.06.2002-BV-01 dated 21.06.2002. The tests were witnessed by a BV Surveyor.
3.3 - Additional dimensional checking report dated 04/02/2003.
3.4 - Test report: N° 874109-01-02, dated 06.09.2002. The tests were witnessed by a RINA Surveyor.
3.5 - Test report: not numbered, concerning cable type 1XZ1-K, dated 02.05.2003. The tests were witnessed by a LR Surveyor.
3.6 - Type Test Reports on 1XC7Z1-R cables No: Q/LV3631 to Q/LV 3634 dated 17.10.2006 (Tests witnessed by BV Surveyor).
3.7 - Routine, Flame and Fire Tests, Reports N° Q/LV3716 to Q/LV3718, dated 10/10/2007 (Witnessed by BV Surveyor)
3.8 - Test report N° ET-13-001, dated 03.01.2013, witnessed by BV Surveyor.
3.9 - Test report N° 20180030, dated 09.02.2018, witnessed by BV Surveyor.
3.10 - Test report N° 20190001, dated 11 Jan 2019, witnessed by BV Surveyor.
3.11 - Test report N° 20190002, dated 11 Jan 2019, witnessed by BV Surveyor.

4. APPLICATION / LIMITATION:

4.1 - BUREAU VERITAS Rules for the Classification of Steel Ships.
4.2 - Approval valid for units having to comply with IMO Resolution A649 (The "MODU Code").

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The CABLES (LOW VOLTAGE) are to be supplied by **TURK PRYSMIAN KABLO VE SISTEMLERI 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.

5.4 - For information, **TURK PRYSMIAN KABLO VE SISTEMLERI A.S.** has declared to Bureau Veritas the following production site:

TURK PRYSMIAN KABLO VE SISTEMLERI A.S.
OMERBEY MAH.
BURSA ASFALTI CAD. NO.51
MUDANYA
16941 BURSA
TURKEY

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 - It is **TURK PRYSMIAN KABLO VE SISTEMLERI A.S.** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 12046/D0 BV issued on 13 Mar 2018 by the Society.

*** END OF CERTIFICATE ***