



Marine &amp; Offshore

Certificate number: 12045/E0 BV

File number: ACE 01/733/03 &amp; 04

Product code: 2505H

*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*

**TURK PRYSMIAN KABLO VE SISTEMLERI A.S.**  
BURSA - Türkiye

*for the type of product*

**INSTRUMENTATION AND COMMUNICATION CABLES**  
03XPC4Z1-R, 03J2XPC4Z1-R  
150/250V

### Requirements:

Bureau Veritas Rules for the Classification of Steel Ships  
IEC 60092-350 (2020), IEC 60092-360 (2021), IEC 60092-376 (2017)  
IEC 60331-21 (1999)  
IEC 60332-1-2 (2004) + AMD1 (2015)  
IEC 60332-3-22 (2018)  
IEC 60754-1/2 (2011)  
IEC 61034-1/2 (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: 08 May 2028**

**For Bureau Veritas Marine & Offshore,**

At BV ISTANBUL, on 08 May 2023,

Gurcan Yilmaz

***This certificate was created electronically and is valid without signature***



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.

The electronic version is available at: <http://www.veristarm.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=pchdt9luhm>

BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

## **THE SCHEDULE OF APPROVAL**

### **1. PRODUCT DESCRIPTION:**

Flame Retardant, Halogen Free and Low Smoke instrumentation cable for ship wiring installations.

#### **1.1 - Main characteristics:**

|                    |                                         |
|--------------------|-----------------------------------------|
| Rated Voltage:     | 150/250 V                               |
| Temperature Class: | 90 °C                                   |
| Flame retardant:   | IEC 60332-1-2 and IEC 60332-3-22 Cat. A |
| Fire Resistance:   | IEC 60331-21 (LJST-FRHF Type only)      |
| Halogen Free:      | IEC 60754-1/2                           |
| Low Smoke:         | IEC 61034-1/2                           |

#### **1.2 - Construction:**

|                               |                                                                |
|-------------------------------|----------------------------------------------------------------|
| Conductor:                    | Stranded copper - Class 2                                      |
| Fire barrier:                 | Mica tape (LJST-FRHF Type only)                                |
| Insulation:                   | XLPE                                                           |
| Pairs:                        | 2 cores twisting                                               |
| Individual and common screen: | Plastic coated al. Tape & tinner copper drain wire (PIMF type) |
| Tape:                         | Polyester or PP                                                |
| Screen:                       | Bare or Copper wires braid                                     |
| Outer Sheath:                 | SHF1                                                           |

#### **1.3 - Product Range:**

| Type                                                                        | Number of Pair | Cross sect. (mm <sup>2</sup> ) | Remarks                                                                                                 |
|-----------------------------------------------------------------------------|----------------|--------------------------------|---------------------------------------------------------------------------------------------------------|
| <b>03XPC4Z1-R (LJST-HF)</b><br><b>03XPATC4Z1-R (LJST-HF) (PIMF)</b>         | 1P to 37P      | 0.5 to 1.5                     | Flame retardant according IEC 60332-1-2 & IEC 60332-3 Cat.A                                             |
| <b>03J2XPC4Z1-R (LJST-FRHF)</b><br><b>03J2XPATC4Z1-R (LJST-FRHF) (PIMF)</b> | 1P to 37P      | 0.5 to 1.5                     | Flame retardant according IEC 60332-1-2 & IEC 60332-3 Cat.A<br>Fire resistant according to IEC 60331-21 |

### **2. DOCUMENTS AND DRAWINGS:**

According to Specifications filed in ACE 01/733/03 & ACE 01/733/04.

Prysmian Data sheet, rev2

Specification N° RD-HAR-2019/27-09, Rev. 02, dated 13 Oct 2020.

### **3. TEST REPORTS:**

#### **3.1 - For the type **03XPC4Z1-R (LJST-HF)**:**

- Test report issued by Russian Maritime Register of Shipping dated 10/05/2002.
- Test report N° 21.06.2002-BV-02 dated 21/06/2002 - The tests were witnessed by BV Surveyor.
- Routine and Flame tests dated 15/01/2010 (witnessed by BV Surveyor).
- Test report N° ET-23-051, dated 27/04/2023.

#### **3.2 - For the type **03J2XPC4Z1-R (LJST-FRHF)**:**

- Test report N° 874100-01-02, dated 06/09/2002 - The tests were witnessed by RINA Surveyor
- Test report N° GE-02E, dated 06/03/2003 - The tests were witnessed by GL Surveyor
- Test report N° Q/LV3719, dated 10/10/2007 - The tests were witnessed by BV Surveyor
- Test report N° 2312013, dated 23/01/2013 - The tests were witnessed by BV's Surveyor.
- Test report N° 20180031 dated 09/02/2018 - The tests were witnessed by BV Surveyor.
- Test report N° ET-23-050, dated 27/04/2023.
- Test report dated 28/04/2023.

#### **3.3 - For the type **03J2XPC4Z1-R (LJST-FRHF) (PIMF)**:**

- Test report N° Q/LV5298, dated 15 Jun 2019.

### **4. APPLICATION / LIMITATION:**

BUREAU VERITAS Rules for the Classification of Steel Ships.

**5. PRODUCTION SURVEY REQUIREMENTS:**

5.1 - The above products are to be supplied by **TURK PRYSMIAN KABLO VE SISTEMLERI A.S.** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **TURK PRYSMIAN KABLO VE SISTEMLERI A.S.** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

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**  
**Türkiye**

**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:

- Rated voltage
- Number of cores and cross-sectional area of the conductors
- Manufacturer's name or trademark
- Code designation (optional)

**7. OTHERS:**

7.1 - It is **TURK PRYSMIAN KABLO VE SISTEMLERI A.S.**'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° 12045/D2 BV issued on 07 Jun 2021 by the Society.

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



Marine &amp; Offshore

Certificate number: 12046/E0 BV

File number: ACE 01/733/03

Product code: 2501H

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

**TURK PRYSMIAN KABLO VE SISTEMLERI A.S.**

BURSA - Türkiye

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 (2020), IEC 60092-353 (2016), IEC 60092-360 (2021)

IEC 60228 (2004)

IEC 60331-11 (2009), IEC 60331-21 (1999)

IEC 60332-1-2 (2015), IEC 60332-3-22 Cat.A (2018)

IEC 60754-1/2 (2011)

IEC 61034-1/2 (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: 08 May 2028**

**For Bureau Veritas Marine & Offshore,**

At BV ISTANBUL, on 08 May 2023,

Gurcan Yilmaz

**This certificate was created electronically and is valid without signature**



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.

The electronic version is available at: <http://www.veristarpn.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=dxthag7qfo>

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                             |
| Temperature Class: | 90°C                                 |
| Flame retardant:   | IEC 60332-1 and IEC 60332-3-22 Cat.A |
| Fire resistant:    | IEC 60331-11/21 (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 types)<br>Copper tape and copper wires braid (1XC7Z1 type) |
| Outer sheath:    | SHF1                                                                                               |

#### **1.3 - Product Range:**

| Cable type                                     | Number of core | Cross-sectional area [mm <sup>2</sup> ] |
|------------------------------------------------|----------------|-----------------------------------------|
| 1XC4Z1-R (LSM-HF)<br>1XC4Z1-K (LSM-HF)         | 1 to 4         | 1.5 to 240                              |
| 1XZ1-R (LM-HF)<br>1XZ1-K (LM-HF)               | 5              | 1.5 to 50                               |
| 1J2XC4Z1-R (LSM-FRHF)<br>1J2XC4Z1-K (LSM-FRHF) | 6 to 60        | 1.5 to 4                                |
| 1XC7Z1-R (LSM-HF) EMC<br>1XC7Z1-K (LSM-HF) EMC | 1 to 5         | 25 to 120                               |

### **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.

3.12 - Test report N° 020922, dated 02 Sep 2022.

3.13 - Test report N° 20220030, dated 02 Sep 2022.

### **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 A.1023(26) (The "MODU Code").

**5. PRODUCTION SURVEY REQUIREMENTS:**

5.1 - The above products are to be supplied by **TURK PRYSMIAN KABLO VE SISTEMLERI A.S.** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **TURK PRYSMIAN KABLO VE SISTEMLERI A.S.** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

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:

- Rated voltage
- Number of cores and cross-sectional area of the conductors
- Manufacturer's name or trademark
- Code designation (optional)

**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/D3 BV issued on 06 Oct 2022 by the Society.

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