



MARINE DIVISION

Certificate number: 12421/B0 BV

File number: ACE 01/735/01

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*

**PRYSMIAN CABLES Y SISTEMAS, S.L. - Planta FERCABLE**

Barcelona - SPAIN

*for the type of product*

**CABLES (LOW VOLTAGE)**

0.6/1kV

POWER CABLE

Type: TEOF - RU, BU, RFOU, BFOU (0.6/1 kV)

**Requirements:**

BV Rules for the Classification of Steel Ships.

IEC 60092-350/351/353/359 - IEC 60332-1 - IEC 60332-3-22 - IEC 60754-1 - IEC 61034-1/2 - IEC 60331-21/31 and NEK-606.

*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: 08 Apr 2016**

**For BUREAU VERITAS,**

At BV MADRID, on 08 Apr 2011,

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:

Type	Cross Sectional Areas (mm <sup>2</sup> )	Number of cores	Temp. Class (°C)	Remarks
<b>TEOF RU - BU</b> 0.6/1 kV	1.5 to 300	1	90	IEC 60332-3-22 (Cat.A).
	1.5 to 120	2		
	1.5 to 185	3		
	1.5 to 120	4		
	1.5 to 2.5	5 to 27		
<b>TEOF-RFOU</b> 0.6/1 kV	1.5 to 300	1		IEC 60332-3-22 (Cat.A).
	1.5 to 120	2		
	1.5 to 185	3		
	1.5 to 120	4		
	1.5 to 2.5	5 to 27		
	120 + 70	3 + 1		
	150 + 95	3 + 1		
	185 + 95	3 + 1		
	240 + 120	3 + 1		
	120 + 70	4 + 1		
150 + 95	4 + 1			
185 + 95	4 + 1			
240 + 120	4 + 1			
<b>TEOF-BFOU</b> 0.6/1 kV	1.5 to 300	1	IEC 60331-21/31	
	1.5 to 120	2		
	1.5 to 185	3		
	1.5 to 120	4		
	1.5 to 2.5	5 to 27		
	120 + 70	3 + 1		
	150 + 95	3 + 1		
	185 + 95	3 + 1		
240 + 120	3 + 1			

### Main Specifications:

Conductor: Tinned, Stranded copper (only for RU and RFOU)  
Tinned, Stranded copper Mica-tape applied directly over the conductor (only for BU and BFOU)

Insulation: EPR

Inner sheath: Halogen free compound (except for RU and BU)

Metal covering: Copper wire braid (except for RU and BU)

Over sheath: SHF2

### 2. DOCUMENTS AND DRAWINGS:

Documentation filed in ACE 01/735/01.

### 3. TEST REPORTS:

Fercable test report dated August 1992 & February 1993 filed in ACE 01/735/01.

### 4. APPLICATION / LIMITATION:

4.1 - BV Rules for the Classification of Steel Ships and IEC 60092 series.

4.2 - Approval valid for units having to comply with IMO Resolution A649 (The "MODU Code").

**5. PRODUCTION SURVEY REQUIREMENTS:**

5.1 - The **POWER CABLE- Type : TEOF - RU, BU, RFOU, BFOU (0.6/1 kV)** are to be manufactured, examined and tested by **PRYSMIAN CABLES Y SISTEMAS, S. L. - Planta FERCABLE, Sant Vicenç dels Horts (Barcelona) - SPAIN** 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:

6.1 - Voltage grade.

6.2 - Cable symbol and temperature

6.3 - Cable size.

6.4 - Manufacturer's name or trademark.

6.5 - Year of manufacture.

6.6 - Applicable standard(s) to flame retardant/fire resistance (if any)

**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 **PRYSMIAN CABLES Y SISTEMAS, S. L. - Planta FERCABLE, Sant Vicenç dels Horts (Barcelona) - 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° 12421/A2 BV issued on 06/Nov./2006 by the Society.

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