

**MARINE DIVISION**

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Certificate number: 11733/B0 BV

File number : ACE 01/126/04

Product code : 25011

*This certificate is not valid when presented without the full attached schedule composed of 7 sections*

**TYPE APPROVAL CERTIFICATE**

*as per Bureau Veritas Classification Rules*

*This certificate is issued to*

**UNTEL KABLOLARI SANAYI VE TICARET A/S**

Istanbul - TURKEY

*for the type of product*

**CABLES (LOW VOLTAGE)**

Type: MGH, MGCH, MGH-FFR, MGCH-FFR, MGCH-EMC  
M2XCH, M2XCH-FFR, M2XH, M2XH-FFR.

**Regulations and standards :**

BUREAU VERITAS Rules for the Classification of Steel Ships.

IEC 60092-350/351/353/359, IEC 60331-21, IEC 60332-1, IEC 60332-3-22 Cat. A, IEC 60754-1/2 and 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 of the Regulations and standards mentioned above.*

**This certificate is valid until : 24 Apr 2012**

At Paris la Défense, on : 24 Apr 2007

**For BUREAU VERITAS,**  
By order of the Secretary

L.COURREGELONGUE

Approval office



Local office : BV ISTANBUL

Surveyor : G. 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. 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. 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 :

Flame Retardant and Fire Resistant (FFR Type only) Marine and Offshore Power, Lighting and Control cables.

#### **1.1 - Common specifications:**

Rated voltage:	0.6/1 kV
Temperature class:	90°C
Flame retardant:	IEC 60332-1 and IEC 60332-3-22 Cat. A (All Types)
Fire resistant:	IEC 60331-21 (FFR Type only)
Halogen Free:	IEC 60754-1/2
Low Smoke:	IEC 61034-1/2

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

Conductor:	Plain stranded copper (Class 2)
Fire protection:	Fire Resistant Foil (FFR Type only)
Insulation:	Cross-Linked PolyEthylene (XLPE for 2X Type) Ethylene Propylene Rubber (HEPR for G Type)
Bedding:	Halogen Free rubber compound
Foil:	Halogen Free foil
Braiding:	Copper wires (C Type)
Outer Sheath:	Halogen Free compound (SHF1)

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

Type	Number of cores	Cross sectional areas [mm <sup>2</sup> ]
MGH and MGCH	1	1.5 to 300
	2	1 to 25
	3	1 to 120
	4	1 to 95
	5	1, 1.5, 2.5
	7, 10, 12, 14 16, 19, 24	1, 1.5 1.5
MGH-FFR and MGCH-FFR	1	2.5 to 300
	2	1 to 25
	3	1 to 120
	4	1 to 95
	5, 7	1, 1.5, 2.5
	10, 12, 14	1, 1.5
	16, 19, 24 27, 37	1.5 1.5
M2XH and M2XH-FFR and M2XCH and M2XCH-FFR	1	1.5 to 300
	2	1 to 25
	3, 4	1 to 120
	5	1 to 16
	7	1, 1.5, 2.5
	10, 12, 14	1, 1.5
	16, 19, 24 27, 37, 61	1.5 1.5
MGCH-EMC	3	1.5 to 120

### 2. DOCUMENTS AND DRAWINGS :

According to documents filed in ACE 01/126/04-03.



**3. TEST REPORTS :**

VDE test report ref. 17730-9020-0001 / 32ZFM dated 2001-08-22.  
Manufacturer's test report ref. 01/09/300/1 dated 2001-09-12.  
Manufacturer's test report ref. 03/11/600 dated 2003-11-28.  
Manufacturer's test report ref. 03/11/602, dated 26.05.2005, stamped by BV.  
UNTEL KABLO A.S.: Tests on rubber and elastomer, dated 18/05/2005.  
TSE Test Report, ref. 016.01.05/05-1166, dated 14/06/2005.  
UNTEL KABLO A.S.: Routine Test Reports dated 16.03.2007.

**4. APPLICATION / LIMITATION :**

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

**5. PRODUCTION SURVEY REQUIREMENTS :**

5.1 - The cables are to be manufactured, examined and tested by **UNTEL KABLOLARI SANAYI VE TICARET A/S**, 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 and fire resistance if any
- 5) - Manufacturer's name or trade mark.
- 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 units at any time and that **UNTEL KABLOLARI SANAYI VE TICARET A/S, Istanbul - Turkey**, will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 11733/A3 BV, issued on 23/05/2006 by the Society.

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

