



MARINE DIVISION

Certificate number: 06602/D1 BV

File number: ACE 01/138/01

Product code: 25011

*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*

### WILSON CABLES PRIVATE LIMITED

Singapore - SINGAPORE

*for the type of product*

### CABLES (LOW VOLTAGE)

Shipboard Power and Control Cables

0,6/1kV

Types: MC-210, MC-210C, MC-210Q and MC-210T

#### Requirements:

BV Rules for the Classification of steel ships.

IEC60092-350(2008), IEC60092-351(2004), IEC60092-353(2001), IEC60092-359(1999), IEC60332 Part 1(2004), IEC60332-3-22 Cat. A(2009).

*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: 18 Oct 2015**

**For BUREAU VERITAS,**

At BV SINGAPORE, on 03 Nov 2010,

Shivananda Upadhyia



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:**

Flame retardant shipboard power and control cables.

#### 1.1 - **Specification:**

Rated Voltage                    0,6/1kV according to IEC 60092-353.  
 Temperature Class            90°C  
 Flame Retardant                IEC 60332-1 and IEC 60332-3-22(Cat. A)

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

##### Type MC-210:

**Conductor**                    Plain annealed, stranded circular non-compacted or circular compacted or shaped copper. (Classe 2)  
**Insulation**                    XLPE  
**Sheath**                         ST2 PVC (R.P)

##### Type MC-210C, MC-210Q and MC-210T:

**Conductor**                    Plain annealed, stranded circular non-compacted or circular compacted or shaped copper.  
**Insulation**                    XLPE  
**Inner Sheath**                ST2 PVC (extruded inner sheath)  
                                       ST2 PVC (extruded inner covering)  
                                       Tapes (lapped inner covering)  
**Wire braid**                    MC-210C - Plain annealed copper wires / copper alloy wires.  
                                       MC-210Q - Tinned annealed copper wires.  
                                       MC-210T - Galvanized round steel wires.  
**Outer Sheath**                ST2 PVC (R.P)

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

Type	Number of cores	Cross sectional area [ mm <sup>2</sup> ]
<b>MC-210</b>	1, 2, 3, 4	1 to 300
	5 to 8, 10, 12, 16, 19, 24, 27, 37	1, 1.5, 2.5
	5, 6, 7	4
<b>MC-210C, MC-210Q</b> <b>MC-210T</b>	1	1 to 300
	2	1 to 120
	3	1 to 150
	4	1 to 95
	5 to 8, 10, 12, 16, 19, 24, 27, 37	1, 1.5, 2.5
	5, 6, 7	4

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

**WILSON CABLES PRIVATE LIMITED** specifications n°:

-COMPANY STANDARD 2 : 2004 and Amendment No1: 2008"Specification for plain annealed copper conductor with or without MICA tape, XLPE insulated, lapped/extruded inner covering or extruded inner sheath, with or without wire braided, and thermoplastic sheathed 0.6/1 kV shipboard power & control cables or shipboard fire resistant power and control cables".

- Construction and Performance Specification "Shipboard Power and Control Cables type: MC-210 and MC-210(X) #".

**3. TEST REPORTS:**

**WILSON CABLES PRIVATE LIMITED**. test reports n°:

- CU/XLPE/SWB/PVC MC-210Q (3Cx35 mm<sup>2</sup>) dated 24.07.2004,
  - CU/XLPE/SWB/PVC MC-210Q (3Cx150 mm<sup>2</sup>) dated 04.11.2004,
  - CU/XLPE/SWB/PVC MC-210Q (27Cx1.5 mm<sup>2</sup>) dated 10.09.2004,
  - CU/XLPE/SWB/PVC MC-210Q (2Cx1.5 mm<sup>2</sup>) dated 20.09.2004,
  - CU/XLPE/SWB/PVC MC-210Q (3Cx1.5 mm<sup>2</sup>) dated 22.09.2004,
  - CU/XLPE/SWB/PVC MC-210Q (4Cx35 mm<sup>2</sup>) dated 31.08.2004,
  - CU/XLPE/PVC MC-210(4Cx4 mm<sup>2</sup>) dated 31.08.2004.
  - EWCS-04-002 MC-210Q(3Cx35 mm<sup>2</sup>) dated 13.08.2004.
- PSB test report n° 30S0005165/FHS/WHC dated 09.03.2001 and 55S00235/CKH/FHS dated 11.05.2001.
- CU/XLPE/CWB/LSOH MC-200C (3Cx150mm<sup>2</sup>) dated 13.06.2009.
  - CU/XLPE/CWB/PVC MC-210C (1Cx240mm<sup>2</sup>) dated 14.08.2009.

**4. APPLICATION / LIMITATION:**

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

**5. PRODUCTION SURVEY REQUIREMENTS:**

5.1 - The cables are to be manufactured, examined and tested by **Wilson Cables Private Limited - SINGAPORE** 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 class
- 6.3 - Number of conductors and conductor size
- 6.4 - Applicable standard(s) to flame retardant
- 6.5 - Manufacturer's name or trademark
- 6.6 - 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 cables at any time and that:

**WILSON CABLES PRIVATE LIMITED  
142 GUL CIRCLE  
JURONG INDUSTRIAL ESTATE  
SINGAPORE 629602**

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 cancels and replaces the Type Approval Certificate N° 06602/D0 BV issued on 18/10/2010 by the Society.

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