



MARINE DIVISION

**BUREAU
VERITAS**

Certificate number: 22971/A0 BV

File number: ACE1/797/2

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

ITALIAN CABLE COMPANY SPA ICC

BOLGARE - BG - ITALY

for the type of product

CABLES (LOW VOLTAGE)

0.6/1 kV
SX...series

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

IEC 60092-350/351/353/359, IEC 60228, IEC 60331-1/2, IEC 60332-1, IEC 60332-3-22 Cat.A, IEC 60754-1/2, IEC 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 mentioned above.

This certificate will expire on: 22 Aug 2017

For BUREAU VERITAS,

At BV GENOA, on 22 Aug 2012,

Carlo Bozzetti



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, Halogen Free, Low Smoke and Fire Resistant (SXM331-HF and SXAM331-HF type) Marine and Offshore Power and Lighting 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 IEC 60332-3-22 (Cat. A)
Fire Resistant:	IEC 60331-21 and IEC 60331-1 (SXM331-HF and SXAM331-HF only).
Halogen Free:	IEC 60754-1/2
Low Smoke:	IEC 61034-1/2

1.2 - Construction:

Conductor:	Plain copper - Class 2 or Class 5 according to IEC 60228
Fire Resisting layer:	Mica tape (SXM331-HF and SXAM331-HF type only)
Insulation:	Halogen Free - Cross Linked Polyethylene - HF XLPE
Filler / Inner sheath	<u>Type SXAM-HF and SXAM331-HF</u> Extruded inner sheath <u>Type SXM-HF and SXM331-HF</u> Extruded filler (size > 6 mm ²)
Armour:	Plain copper wire braid (SXAM-HF and SXAM331-HF type only)
Outer Sheath:	SHF1 LSOH thermoplastic compound

1.3 - Product Range:

Type	Number of Core	Cross-Section (mm ²)
SXM-HF ,SXM331-HF,	7, 10, 12, 14, 16, 19, 24 ,27	1.5 to 2.5 mm ²
	5	1.5 to 50 mm ²
SXAM-HF, SXAM331-HF	4	1.5 to 240 mm ²
	2	1.5 to 95 mm ²
	1, 3	1.5 to 300 mm ²

2. DOCUMENTS AND DRAWINGS:

Italian Cable Company Technical data sheet dated 30/06/2010

N° 09-250 Rev.4, N° 09-251 Rev.5, N° 09-252 Rev.2 and N° 09-253 rev.3

3. TEST REPORTS:

IMQ:

Test report N° 01SJ00366 and 01SJ00366_Rev.1 dated 03/06/2010 with annexed test reports from:
CSI: Test reports N° 0711/DC/REA/09_1 and N° 0711/DC/REA/09_5 both dated 20/11/2009
IMQ: Test report N° 01SJ00366-332 dated 02/11/2009
CSI: Test reports N° 0095/DC/TOX/09_1 and N° 0095/DC/TOX/09_2 both dated 20/11/2009

Test report N° 01SJ00367 and 01SJ00367_Rev.1 dated 03/06/2010 with annexed test reports from:
CSI: Test reports N° 0214/DC/REA/09_4 and N° 0214/DC/REA/09_8 both dated 20/11/2009
IMQ: Test report N° 01SJ00367-332 dated 02/11/2009
CSI: Test reports N° 0095/DC/TOX/09_1 and N° 0095/DC/TOX/09_2 both dated 20/11/2009

Test report N° 01SJ00368 and 01SJ00368_Rev.1 dated 03/06/2010 with annexed test reports from:
CSI: Test reports N° 0711/DC/REA/09_3 and N° 0711/DC/REA/09_7 both dated 20/11/2009
IMQ Test report N° 01SJ00368-332 dated 02/11/2009
CSI : Test reports N° 0095/DC/TOX/09_1 and N° 0095/DC/TOX/09_2 both dated 20/11/2009

Test report N° 01SJ00369 dated 13/03/2010 with annexed test reports from :
CSI : Test reports N° 0167/DC/REA/10_1 and 0167/DC/REA/10_3 both dated 12/03/2010
CSI : Test reports N° 0017/DC/TOX/10_2 and N° 0017/DC/TOX/10_1 both dated 12/03/2010
IMQ : Test report N° 01SJ00369-331 dated 05/02/2010
IMQ : Test report N° 01SJ00369-332 dated 09/02/2010

Test report N° 01SJ00370 dated 13/03/2010 with annexed test reports from :
CSI : Test reports N° 0167/DC/REA/10_2 and N° 0167/DC/REA/10_4 both dated 12/03/2010
CSI : Test reports N° 0017/DC/TOX/10_2 and N° 0017/DC/TOX/10_1 both dated 12/03/2010
IMQ : Test report N° 01SJ00370-331 dated 05/02/2010
IMQ : Test report N° 01SJ00370-332 dated 09/02/2010

Test Report N° 01SK00111-331 dated 05/05/2010 and test report N° 01SL00201 dated 02/03/2012



4. APPLICATION / LIMITATION:

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

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The **Power and Lighting cables** are to be manufactured, examined and tested by **Italian Cable Company Spa Icc - Bolgare (BG) - ITALY** 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 and fire resistance (if any).
- 6.5 - Manufacturer's name or trade mark.
- 6.6 - Year of manufacture.

7. OTHERS:

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: **Italian Cable Company S.p.a Icc - Bolgare (BG) - ITALY** 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.

*** END OF CERTIFICATE ***

