

**MARINE DIVISION**  
17 Bis Place des Reflets - La Défense 2  
92400 Courbevoie - France  
Tel. 33 1 42 91 53 48  
Fax 33 1 42 91 28 94



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Certificate N°:

12999/A1 BV

The attached Schedule forms part of the certificate

File Number : ACE 01/737/01

Product Code : 25011

**BUREAU  
VERITAS**

## CERTIFICATE OF TYPE APPROVAL

*This is to certify that the product identified below was found to be in compliance with the relevant hereunder stated Regulations & standards*

### CABLES (LOW VOLTAGE)

Type: TICI (Galvanized steel wires braided) / TIOI (Copper wires braided).

**MANUFACTURED BY:**

**Suzhou Draka Cable Co. Ltd.**  
Suzhou - CHINA

**SPECIFIED REGULATIONS & STANDARDS :**

BV Rules for the Classification of Steel Ships.

IEC 60092-350, IEC 60092-351, IEC 60092-353, IEC 60092-359, IEC 60332-1, IEC 60332-3 Cat. A/B/C, IEC 60754-1/2, IEC 61034.

**The Approval is valid until : 22/07/2008**

BUREAU VERITAS SHANGHAI

**Bill Chen**  
BVN Leader Surveyor



At Paris la Défense, on : 05/01/2004

**J.BENOIT**  
For the Secretary

This Certificate remains valid until the date stated on, hereunder, unless cancelled or revoked, provided the conditions in the attached schedule are complied with and the equipment remains satisfactory into service.

This Certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested.

This Certificate is not valid without the stamp of the above mentioned BUREAU VERITAS Inspection Center.

The manufacturer should notify BUREAU VERITAS of any modification or changes to the equipment in order to obtain a valid Certificate.

The latest published Regulations or Standards referred to, above, and the Marine Division General Conditions are applicable.



File Number : ACE 01/737/01

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION :

1.1 - Rating voltage: 600 / 1000 V.

1.2 - Product Range:

TYPE	Number of Cores	Cross Sectional Areas (mm <sup>2</sup> )	Temp. Class °C	Remarks
TICI (Galvanized steel wires braided) / TIOI (Copper wires braided)	1	1 to 240	85	0.6/1 kV, Flame retardant according to IEC 60332-1 & IEC 60332-3 (Cat. A/B/C)
	2	1 to 35		
	3	1 to 240		
	4	1 to 35		
	5	1 to 4		
	6 to 37	1 to 2.5		

1.3 - Product Description:

Flame Retardant, single and multicore power and control cable, XPLE insulation, Low Smoke Halogen Free thermoplastic inner covering/sheath, galvanized steel wire or copper wire braid armoured, Low Smoke Halogen Free thermoplastic sheathed.

### 2. DESIGN DRAWINGS and/or SPECIFICATIONS

Documents filed in ACE 01/116/01 & 05, ACE 01/737/01.

### 3. TYPE TEST REPORTS / LABORATORY RECOGNITION STATUS

According to test reports:

- QC 001/98 dated 06-1998, 08-05-1998.
- QC 003/98 dated 04/06/1998.
- Flame retardant test for categories A, B & C dated 06-1998.
- F011 dated 05.07.2000.
- EF001 dated 24.06.1999.
- HV1856/HV 1855/HV1852 dated 21.08.2001.
- WARRES N° L18563 dated 26/03/1999.
- WARRES N° L18564 dated 26/03/1999.
- WARRES N° L18565 dated 07/05/1999.
- Test report n° CT02-0371A-1 issued by China National Centre for Quality Supervision and Test of Electric Wire and Cable on 05-23-2002.



**4. MATERIALS and/or COMPONENTS REQUIRED TO BE TYPE APPROVED**

Nil.

**5. OTHER MATERIALS and/or COMPONENTS**

Nil.

**6. APPLICATION / LIMITATION OF USE**

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

**7. PRODUCTION SURVEY REQUIREMENTS**

Arrangements shall be made for a Society's Surveyor to carry out, on a periodic basis, visits of the Manufacturer's premises and product audits.

**8. ON BOARD INSTALLATION & MAINTENANCE REQUIREMENTS**

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

**9. MARKING FOR IDENTIFICATION**

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 & Temperature
- 3) Applicable standard to flame retardant/fire resistance
- 4) No. of conductor & conductor size
- 5) Manufacturer's name or trade mark
- 6) Year of manufacture.

**10. OTHERS**

10.1 - 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 **Suzhou Draka Cable Co. Ltd., Suzhou - China**, 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.

10.2 - This certificate supersedes the Type Approval Certificate n° 12999/A0 BV issued on 22/07/2003 by the Society.

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BUREAU VERITAS SHANGHAI

