Certificate No:
TAE000007T2

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Low Voltage Cable

with type designation(s)
BI(c), BI(ic)

Issued to
Suzhou Draka Cable Co. Ltd.
SUZHOU JIANGSU, China

is found to comply with
DNV GL rules for classification – Ships and offshore units

Application :

Control and instrumentation.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Type	Voltage class (V)	Temp. class (°C)
BI(c)	250 V	90
BI(ic)	250 V	90

This Certificate is valid until **2020-12-02**.

Issued at **Høvik** on **2015-12-03**
DNV GL local station: **Shanghai CMC** for **DNV GL**

Approval Engineer: **Georgy Abramenko**

Marit Laumann
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Job Id: **262.1-010964-5**
Certificate No: **TAE00000T2**

Product description

Type: BI (c) 250 V with overall screen;
BI (i+c) 250 V with individual and overall screens.

Construction:

Conductors:	Tinned or plain, stranded copper class 2 & class 5
Core insulation:	XLPE + mica tape
Individual and overall screen:	AL foil individual and collective screen with tinned copper drain wire
Outer sheath:	SHF1

Cables with overall screen	
Number of cores	Cross sectional area
Pairs: 1 2 3 4 6 7 8 10 12 14 16 19 24 27 30 37	0,75 1,0 1,5 2,5
Triads: 1 2 3 4 7 8 10 12	
Quads: 1 3 7	
Cables with individual and collective screen	
Number of cores	Cross sectional area
Pairs: 2 3 4 6 7 8 10 12 14 16 19 24 27 30 37	0,75 1,0 1,5 2,5
Triads: 2 3 4 7 8 10 12	
Quads: 3 7	

Application/Limitation

This type of cable is fire resistant in accordance with IEC publication 60331.

The requirements of SOLAS Amendments Chapter II-1, Part D, Reg. 45, 5.2 (provision to be taken to limit Fire Propagation along Bunches of Cables or Wires) are fulfilled without any additional measures.

Type Approval documentation

Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2014-08	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-360	2014-04	Electrical installations in ships - Part 360: Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables.	
IEC 60092-376	2003-05	Cables for control and instrumentation circuits 150/250 V (300 V)	
IEC 60331-21	1999-04	Tests for electric cables under fire conditions – Circuit integrity – Part 21: Procedures and requirements – Cables of rated voltage up to and including 0,6/1,0 kV	Minimum 90 min test.

Standard	Release	General description	Limitation
IEC 60332-3-22	2009-02	Tests on electric and optical fibre cables under fire conditions - Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category A	Bunch test Category A
IEC 60754-1	2011-11	Test on gases evolved during combustion of materials from cables – Determination of the amount of halogen acid gas	Low Halogen
IEC 60754-2	2011-11	Test on gases evolved during combustion of materials from cables – Determination of the degree of acidity of gases evolved during the combustion of materials taken from electric cables by measuring pH and condctivity	Halogen free
IEC 61034-1/2	2013-07 2013-09	Measurement of smoke density of cables burning under defined conditions – Test apparatus, procedure and requirements	Low smoke Light transmittance ≥ 60%

Marking of product

Suzhou Draka Cable Co. Ltd. – BI(c) or BI(i+c) – 150/250V – IEC 60331-21 - IEC 60332-3-22 – size – date.

Periodical assessment

The scope of the retention/renewal survey is to verify that the conditions stipulated for the Type approval is complied with and that no alterations are made to the product design or choice of materials.

- Inspection on factory samples, selected at random from the production line (where practicable)
- Check test reports from Production Sample Tests (PST) and Routine tests (RT)
- If test reports are not available, tests according to PST and RT shall be carried out
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Survey shall be performed at least every second year.

END OF CERTIFICATE