



MARINE DIVISION

Certificate number: 10376/C0 BV

File number: ACE 01/159/01

Product code: 2505H

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

LEONI Special Cables GmbH

Friesoythe - GERMANY

for the type of product

INSTRUMENTATION AND COMMUNICATION CABLES

INDUSTRIAL ETHERNET Type: L-9YH(ST)CH 2x2x0.34/1.5-100 GN VZN FRNC.

Requirements:

IEC 60332-1-2, IEC60332-3-22, IEC 60092-359, IEC 60754-1/2, IEC 60811, IEC 61034-1/2, UL 444.

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: 15 Dec 2016**For BUREAU VERITAS,**

At BV HAMBURG, on 15 Dec 2011,

Dirk Hoepfner



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:

1.1 - Technical Specification:

Rated Voltage: 60V
Max. Temperature: 75°C
Flame Retardant: IEC60332-1-2 and IEC60332-3-22 Cat.A
Halogen Free: IEC60754-1/2

1.2 - Construction:

Core: Stranded tinned wire
Insulation: Polypropylène (PP)
Inner Sheath: Thermoplastic Compound (FRNC)
Screen: Tinned Copper wire braid
Outer Sheath: Thermoplastic Compound (FRNC)

1.3 - Product Range:

TYPE	Number of cores	Cross sectional Areas (mm ²)
L-9YH(ST) CH 2x2x0.34/1.5-100 GN VZN FRNC (100-ohm twisted-pair cable)	2 x 2	0.34

2. DOCUMENTS AND DRAWINGS:

According to Specifications: ITP K 02-E (Ed. 2000-05-24/SPEC_2e)
 filed in ACE 01/159/01.
 LEONI Special Cables GmbH Ref: L45467-J16-B16-EN dated 17.11.2011.

3. TEST REPORTS:

Test reports:

- L45467-J16-B16 dated 2000-05-31 issued by the Manufacturer.
- 00/060 dated 2000-05-24 & 00/062 dated 2000-06-08 and carried out by Bayer.
- The tests were witnessed by a Society's Surveyor.
- MPA Dresden N°2011-B-1336 dated 28 March 2011.
- MPA Dresden N°00-23-0568/02 dated 16 March 2011.

4. APPLICATION / LIMITATION:

According to 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 **LEONI Special Cables GmbH - GERMANY** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - Production sites are to be recognized by Bureau Veritas as per NR320 for HBV products. To this end **LEONI Special Cables GmbH - GERMANY** has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.

5.3 - **LEONI Special Cables GmbH - GERMANY** has declared to Bureau Veritas that the types of product described in this certificate are manufactured at the following production site:

LEONI Special Cables GmbH
Eschstrasse 1
D-26169 Friesoythe
GERMANY

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 trade mark
- 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 **LEONI Special Cables GmbH (Friesoythe - GERMANY)** 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 supersedes the Type Approval Certificate N° 10376/B0 BV issued on 23/03/2006 by the Society.

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