



Marine & Offshore
Division

Certificate number: 05563/F0 BV

File number: ACE 01/003/35

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

Nexans Deutschland GmbH

Mönchengladbach - GERMANY

for the type of product

INSTRUMENTATION AND COMMUNICATION CABLES

TX series.

150/250V.

Requirements:

BV Rules for the Classification of Steel Ships and Offshore Units.

IEC 60092-350 (2014), 376 (2003), 360 (2014), IEC 60228 (2004), IEC 60332-1 (2004), IEC 60332-3-22 Cat.A (2009), IEC 60331-1/2 (2009), IEC 60754-1/2 (2011), IEC 61034-1/2 (2013), IEC 60684-2 (2011).

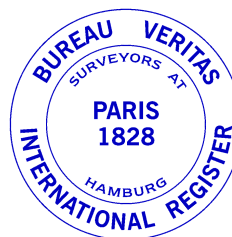
This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 11 Jan 2021

For BUREAU VERITAS,

At BV HAMBURG, on 11 Jan 2016,

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 & Offshore 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.

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BV Mod. Ad.E 530 October 2014

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

The **TX series** are instrumentation and communication cables for Marine and Offshore applications.

1.1 - Specifications:

Rated Voltage:	150/250 V
Temperature Class:	90°C
Flame Retardant:	IEC60332-1/3-22 Cat.A
Fire Resistant:	IEC 60331-1/2
Halogen Free:	IEC 60754-1/2 & IEC 60684-2
Low Smoke:	IEC 61034-1/2

1.2 - Construction:

Conductor:	Plain or tinned copper (Class 2 or 5 for FLEXISHIP types)
Fire resisting layer:	Mica tape (TX331 types only)
Insulation:	XLPE
Screen:	Alu/Polyester tape with a tinned copper drain wire (individual or common)
Outer Sheath:	Halogen free thermoplastic (SHF1)

1.3 - Approval's Range:

Type	Number of cores	Cross Sectional areas (mm ²)
TX (I)	1 to 37 pairs	0.5 - 0.75 - 1.0 - 1.5
TX (I) FLEXISHIP	1 to 21 triples	0.5 - 0.75 - 1.0 - 1.5
TX (C)	2 to 37 pairs	0.5 - 0.75 - 1.0 - 1.5
TX (C) FLEXISHIP	2 to 21 triples	0.5 - 0.75 - 1.0 - 1.5
TX (I) 331	1 to 37 pairs	0.75 - 1.0 - 1.5
TX (I) 331 FLEXISHIP	1 to 21 triples	0.75 - 1.0 - 1.5
TX (C) 331	2 to 37 pairs	0.75 - 1.0 - 1.5
TX (C) 331 FLEXISHIP	3 to 21 triples	0.75 - 1.0 - 1.5
TX (I) + (C)	1 to 37 pairs	0.5 - 0.75 - 1.0 - 1.5
TX (I) + (C) FLEXISHIP	1 to 21 triples	0.5 - 0.75 - 1.0 - 1.5

2. DOCUMENTS AND DRAWINGS:

Specifications refs. MG-S-100/101/104/105, all dated 10.Jul.2015.

Specification ref. MG-S-108, dated 29.Jul.2015.

3. TEST REPORTS:

Test reports:

- C 09557 of 13 April 1992.
- X 70177 of 07 July 1993.
- For RINA of 08 February 1995.
- Nexans approval test certificates dated 31.05.02.
- Nexans test reports dated 15/12/2003.
- Nexans test reports N°09-101dated 25/Nov./2009
- Nexans test report N°QUAL/LM/10-131 dated 15/12/2010.
- Nexans test report N°QUAL/LM/11-036 dated 21/01/2011.
- Tests report N°TMP-SRV-2015-79-04/05/06, dated 25.Nov.2015.

4. APPLICATION / LIMITATION:

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

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The **TX series** are to be supplied by **Nexans Deutschland GmbH** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320.

5.3 - **Nexans Deutschland GmbH** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products :

Nexans Deutschland GmbH
Bonnenbroicher Str. 2 - 14
41238 Mönchengladbach
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:

- 1) - Voltage grade.
- 2) - Cable symbol and temperature class.
- 3) - Number of conductors and conductor size.
- 4) - Applicable standard(s) to flame retardant and fire resistance (if any).
- 5) - Manufacturer's name or trademark.
- 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 **Nexans Deutschland GmbH**, will accept the responsibility for informing shipbuilders 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° 05563/E2 BV issued on 19.Jun.2015 by the Society.

*** END OF CERTIFICATE ***