

**TYPE APPROVAL CERTIFICATE****This is to certify:****That the Electric Power Cable**

with type designation(s)

**MPRX 331 0,6/1 kV, MPRX 331 FLEXISHIP**

Issued to

**Nexans Deutschland GmbH****Mönchengladbach Nordrhein-Westfalen, Germany**

is found to comply with

**DNV GL rules for classification – Ships and offshore units****DNV GL class programme DNVGL-CP-0399 – Type approval – Electric cables****Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

Type	Voltage class (kV)	Temp. class (°C)
<b>MPRX 331 0,6/1 kV</b>	<b>0,6/1</b>	<b>90</b>
<b>MPRX 331 FLEXISHIP</b>	<b>0,6/1</b>	<b>90</b>

This Certificate is valid until **2022-01-15**.Issued at **Høvik** on **2017-01-16**for **DNV GL**DNV GL local station: **Essen CMC Western Germany**Approval Engineer: **Georgy Abramenko**

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**Andreas Kristoffersen**  
**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: **262.1-010567-2**  
 Certificate No: **TAE00001A6**

## Product description

MPRX 331 0,6/1 kV, MPRX FLEXISHIP 0,6/1 kV  
 Construction:  
 Conductors: Plain or tinned, stranded copper  
 Core insulation: Mica tape + HF XLPE  
 Sheath: SHF 1

Number of cores	Cross sectional area mm <sup>2</sup>
1	1,5 2,5 4 6 10 16 25 35 50 70 95 120 150 185 240 300
2	1,5 2,5 4 6 10 16 25 50
3	1,5 2,5 4 6 10 16 25 35 50 70 95 120 150 185 240
4	1,5 2,5 4 6 10 16 25 35 50 70 95 120 150
5	1,5 2,5 4 6 10 16 25 35 50 70 95 120
7 10 12 14 19 24 27 30 37	1,5 2,5
7	4

## Application/Limitation

This cable is fire resistant according to IEC 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

Data sheets: 1061 E MPRXCX331 V1 4, dated 29-01-2008  
 1344 E MPRX331 V1 1, dated 29-01-2008  
 MG-S-005 dated 20-07-2016  
 MG-S-006 dated 20-07-2016

Test report no: Nexans no: 2801164 dated 01-12-11  
 Nexans no: 2801162 dated 01-12-11  
 STE/DC/IEC 60331/2001/017 dated 01-10-22  
 STE/DC/IEC 60331/2001/016 dated 01-10-17  
 16092301, dated 03-10-2016  
 Emission 1061\_15A dated 01.09.2015  
 Emission 1067\_15A dated 01.09.2015.

## 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 60092-353	2011-08	Electrical installations in ships - Part 353: Power cables for rated voltages 1 kV and 3 kV	0,6/1 kV

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IEC 60331-1	2009-05	Fire resistance / Circuit integrity – Test for method for fire with shock at temperature of at least 830°C for cables rated up to and including 0,6/1 kV	Minimum 90 min
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	90 min. test
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 60684-2	2011-08	Flexible insulating sleeving – Part 2: Methods of test	Low Halogen: <0,1% Halogen
IEC 60754-1	2011-11	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content	Low Halogen: <0,5% Halogen
IEC 60754-2	2011-11	Test on gases evolved during combustion of materials from cables - Part 2: Determination of acidity (by pH measurement) and conductivity	Halogen free: pH > 4,3 Conductivity < 10µS/mm

## Marking of product

| NEXANS | - MPRX 331 - size - 0,6/1 kV – IEC 60332-3-22 – IEC 60331-1 - IEC 60331-21 – batch no.

## Periodical assessment

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

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to RT to 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.

Assessment to be performed at least every second year.

END OF CERTIFICATE