Certificate no.:
TAE0000577

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Electric Power Cable

with type designation(s)
P111 RU, RU(C)

issued to
Lynxeo (Suzhou) Cable Technology Co., Ltd.
Suzhou, Jiangsu, **China**

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application:

Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Type	Rated voltage (kV)	Temp. class (°C)
P111 RU	0.6/1	90
RU(C)	0.6/1	90

Issued at **Høvik** on **2026-03-10**
This Certificate is valid until **2031-03-09**.
DNV local unit: **Shanghai**

for **DNV**

Approval Engineer: **Georgy Abramenko**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

P111 RU or RU(C) 0,6/1kV

Conductor:	Circular tinned stranded copper conductor, Class 2 or Class 5
Insulation:	EPR
Collective screen (RU(C) types):	AL/PET or Cu/PET taping as collective screen with copper drain wires
Outer sheath:	Halogen-free compound SHF2 or SHF MUD Sheath code no marking: Minimum requirement E: Enhanced oil resistant – category b M: Enhanced oil resistant – category b & mud resistant – category c H: Enhanced oil resistant – category b & hydraulic/gear oil resistant – category d H-M: Enhanced Oil resistant – category b & c & dSHF2SHF2

No of elements	**Conductor cross section (mm²)**
1C	1 1.5 2.5 4 6 10 16 25 35 50 70 95 120 150 185 240 300 400
2C, 3C, 4C	1 1.5 2.5 4 6 10 16 25 35 50 70 95 120 150 185 240
2C+E	2x1+1E, 2x1.5+1.5E, 2x2.5+2.5E, 2x4+4E, 2x6+6E, 2x10+10E, 2x16+16E, 2x25+16E, 2x35+25E 2x50+25E, 2x70+35E, 2x95+50E, 2x120+70E, 2x150+95E, 2x185+95E, 2x240+120E
3C+E	3x1+1E, 3x1.5+1.5E, 3x2.5+2.5E, 3x4+4E, 3x6+6E, 3x10+10E, 3x16+16E, 3x25+16E, 3x35+25E 3x50+25E, 3x70+35E, 3x95+50E, 3x120+70E, 3x150+95E, 3x185+95E, 3x240+120E
4C+E	4x1+1E, 4x1.5+1.5E, 4x2.5+2.5E, 4x4+4E, 4x6+6E, 4x10+10E, 4x16+16E, 4x25+16E, 4x35+25E 4x50+25E, 4x70+35E, 4x95+50E, 4x120+70E, 4x150+95E, 4x185+95E, 4x240+120E
5 6 7 8 9 10 12 14 16 18 19 20 23 24 27 30 33 37 44	1 1.5 2.5

Application/Limitation

The requirement of SOLAS Chapter II-1 Part D Reg.45, 5.2 to limit Fire Propagation along Bunches of cables or wires are fulfilled without any additional measure.

Tests carried out

Standard	**Release**	**General description**	**Limitation**
DNV CP-0399	2021-08	Electric cables.	
IEC 60092-350	2020-01	Electrical installations in ships - Part 350: General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-360	2021-01	Electrical installations in ships - Part 360: Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables	
IEC 60092-353	2024-06	Electrical installations in ships - Part 353: Power cables for rated voltages 1 kV and 3 kV	
IEC 60332-1-2	2025-06	Tests on electric and optical fibre cables under fire conditions - Part 1-2: Test for vertical flame propagation for a single insulated wire or cable - Procedure for 1 kW pre-mixed flame	
IEC 60332-3-22	2018-07	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	Charred portion of sample does not exceed 2,5m above bottom edge of burner.
IEC 60754-1	2019-11	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content	Low Halogen: <0,5% Halogen

Standard	Release	General description	Limitation
IEC 60754-2	2019-11	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
IEC 60684-2	2025-06	Flexible insulating sleeving – Part 2: Methods of test Clause 47.1 Methods of determination of low levels of chlorine, and/or Bromine and/or iodine Clause 47.2 Methods of determination of low levels of fluorine	HF max 0,1% [0,02% can be detected]
IEC 61034-1/2	2019-11	Measurement of smoke density of cables burning under defined conditions – Part 1: Test apparatus Part 2: Test procedure and requirements	Low smoke Light transmittance >60%
IEC 60079-14 Annex E	2014-05	Restricted breathing test for cables	
NEK TS 606	2025	Cables for offshore installations. Halogen-free and/or mud resistant. Technical specification.	Mud resistance test on SHF Mud: IRM902, IRM903 100 C 7d. Calcium Bromide 70 C 56d. Oil based mud: EDC 95/11 70 C 56d
CSA C 22.2 No.03	2009	Test methods for electrical wires and cables	Cold bending: -40°C Cold impact: -35°C
ANSI/UL 1581	2023	Reverence Standard for Electrical Wires, Cables, and Flexible Cords	Sunlight resistant: 720hrs

Marking of product
0.6/1 kV P111 RU or RU(C) - size – LYNXEO 448 - IEC 60332-3-22

Periodical assessment
The scope of the retention/renewal survey is to verify that the conditions stipulated for the Type Approval Certificate are complied with and that no alterations are made to the design and/or the material of product.

The main elements of the survey are:

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

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

Manufactured by:
Lynxeo (Suzhou) Cable Technology Co. Ltd.
No.1588 Songwei Road, Wuzhong Economic and Technological Development Zone, Suzhou, Jiangsu Province, China.