

TYPE APPROVAL CERTIFICATE

This is to certify:

That the **Termination and Joint for Cable**

with type designation(s)

**Cold shrink termination for Polymeric Insulated cables - ZTT-NLS for 1 or 3 cores 6/10 kV,
Cold shrink termination for Polymeric Insulated cables - ZTT-NLS for 1 or 3 cores 8,7/15 kV**

Issued to

ZTT Cable Accessories Co.,Ltd.
Nantong, China

is found to comply with

DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

Indoor Terminations for Medium Voltage Polymeric Insulated cables 6/10kV and 8,7/15kV.

Single core and three core.

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

Issued at **Høvik** on **2021-10-14**

This Certificate is valid until **2026-10-13**.

for **DNV**

DNV local station: **Nantong**

Approval Engineer: **Ivar Bull**

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Trond Sjøvåg
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.

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 300,000 USD.



Product description

Cold shrink termination for Polymeric Insulated cables - ZTT-NLS for 1 or 3 cores 6/10 kV,
Cold shrink termination for Polymeric Insulated cables - ZTT-NLS for 1 or 3 cores 8,7/15 kV
Suitable for compression cable lugs.

ZTT-NLS for 1 or 3 cores 6/10 kV,

Type designation and Voltage class [kV]	Number of cores	Nominal conductor Cross-section [mm²]
ZTT-NLS-#1	3-core	16-35
ZTT-NLS-#2	3-core	50-95
ZTT-NLS-#3	3-core	120-185
ZTT-NLS-#4	3-core	240-300
ZTT-NLS-#5	1.core	16-35
ZTT-NLS-#6	1.core	50-95
ZTT-NLS-#7	1.core	120-185
ZTT-NLS-#8	1.core	240-300
ZTT-NLS-#9	1.core	400-500

ZTT-NLS for 1 or 3 cores 8.7/15 kV

Type designation and Voltage class [kV]	Number of cores	Nominal conductor Cross-section [mm²]
ZTT-NLS-#10	3-core	25-70
ZTT-NLS-#11	3-core	95-150
ZTT-NLS-#12	3-core	185-240
ZTT-NLS-#13	3-core	300-400
ZTT-NLS-#14	1.core	25-70
ZTT-NLS-#15	1.core	95-150
ZTT-NLS-#16	1.core	185-240
ZTT-NLS-#17	1.core	300-400
ZTT-NLS-#18	1.core	500-630

Application/Limitation

For indoor use.

Installation to be done in accordance with the installation instructions.

Type Approval documentation

Tests carried out

Tested according to IEC 60502-4 (2010).

	Test Sequence	GB/T 12706.4	8.7/15(10kV)	IEC 60502-4	8.7/15(10kV)
1	AC Withstand or DC withstand	$4.5U_0$, 5min	39	$4.5U_0$, 5min	39
2	Partial Discharge	$1.73U_0 \leq 10\text{pC}$	15	$1.73U_0 \leq 10\text{pC}$	15
3	Impulse (95~100°C)	± 10 times	95	± 10 times	95
4	Load cycling in air (95~100°C)	60 cycles at $2.5U_0$	23	60 cycles at $2.5U_0$	23
5	Partial Discharge (95~100°C)	$1.73U_0 \leq 10\text{pC}$	15	$1.73U_0 \leq 10\text{pC}$	15
6	Thermal short circuit (conductor)	2 times	---	2 times	---
7	Dynamic short circuit	1 time	---	1 time	---
8	Impulse (room temperature)	± 10 times	95	± 10 times	95
9	AC withstand	$2.5U_0$, 15min	23	$2.5U_0$, 15min	23
10	Moisture test	$1.25U_0$, 300hrs	11	$1.25U_0$, 300hrs	11

Marking of product

ZTCA –Type designation NLS-# xx – Voltage – No of cores - 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.

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.

END OF CERTIFICATE