



Certificate no.:
TAE00004W2

TYPE APPROVAL CERTIFICATE

This is to certify:
that the Category cables

with type designation(s)
Cat 5e 4x2 AWG24 F/UTP or F/FTP or S/UTP or S/FTP Armoured 86/SC (optional),
Cat 6 4x2 AWG23 F/UTP or F/FTP or S/UTP or S/FTP Armoured 86/SC (optional),
Cat 6A 4x2 AWG23 F/UTP or F/FTP or S/UTP or S/FTP Armoured 86/SC (optional),
Cat 7 4x2 AWG22 F/UTP or F/FTP or S/UTP or S/FTP Armoured 86/SC (optional),
Cat 7A 4x2 AWG22 F/UTP or F/FTP or S/UTP or S/FTP Armoured 86/SC (optional)

issued to
Shandong Zhongchuan Cable Co., Ltd.
Weihai, China

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

Application:

Data communication cable, installation/horizontal cable. Armoured (optional).
Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Issued at **Høvik** on **2024-05-22**

This Certificate is valid until **2029-05-21**.

for **DNV**

DNV local unit: **Dalian NB & CMC**

Approval Engineer: **Ivar Bull**

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.



Form code: TA 251

Revision: 2023-09

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Page 1 of 3

Product description

Screened Category cables. Horizontal wire.

Cat 5e 4x2 AWG24 F/UTP or F/FTP or S/UTP or S/FTP Armoured 86/SC (optional),
Cat 6 4x2 AWG23 F/UTP or F/FTP or S/UTP or S/FTP Armoured 86/SC (optional),
Cat 6A 4x2 AWG23 F/UTP or F/FTP or S/UTP or S/FTP Armoured 86/SC (optional),
Cat 7 4x2 AWG22 F/UTP or F/FTP or S/UTP or S/FTP Armoured 86/SC (optional),
Cat 7A 4x2 AWG22 F/UTP or F/FTP or S/UTP or S/FTP Armoured 86/SC (optional)

Construction	
Conductor	Solid bare copper, AWG size as per product description above
Insulation	Foam PE
Screens	Individual screen: F= AL/PE tape with tinned cu drain wire Common screen: F= AL/PE tape with tinned cu drain wire S= Braid screen
Inner sheath	SHF1
Armour (optional)	Copper wire braid
Outer sheath (optional)	SHF1 or SHF2

Conductor resistance maximum 9,5 Ohm per 100m.(horizontal wire).
For transmission properties, please refer to cable data sheets.

Application/Limitation

In order to achieve a transmission link compliant with Category 5E, 6, 6A, 7 or 7A cables shall be installed with suitable termination equipment according to manufacturer's recommendations.

The requirements of SOLAS Amendments Chapter II-1, Part D, Reg. 45, 5.2 (provision to be taken to limit Fire Propagation along Bundles of Cables or Wires) are fulfilled without any additional measures.

Type Approval documentation

Tests carried out

Standard	Release	General description	Limitation
IEC 61156-5	2020-04	Multicore and symmetrical pair/quad cables for digital communications – Part 5: Symmetrical pair/quad cables with transmission characteristics up to 1 000 MHz – Horizontal floor wiring – Sectional specification	Reference to requirement for category cable: Cat 5e (100MHz), Cat 6 (250 MHz) Cat 6A (500 MHz) Cat 7A (1000MHz),
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.	SHF1 or SHF2 outer sheath
IEC 60332-1-2	2015-07	Tests on electric cables under fire conditions. Test for vertical flame propagation for a single insulated wire or cable.	
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 60754-2	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

Standard	Release	General description	Limitation
IEC 61034-1/2	2019-11	Measurement of smoke density of cables	IEC 61034-1/2

Marking of product

Shandong Zhongchuan Cable Co – Cat 5e 4x2 AWG24/1 - F/UTP or F/FTP or S/UTP or S/FTP Armoured 86/SC (optional) – SHF1 - IEC 61156-5, IEC 60332-3-22 – LSZH – Date – Lot no – m Mark or

Shandong Zhongchuan Cable Co – Cat 6 4x2 AWG23/1 F/UTP or F/FTP or S/UTP or S/FTP Armoured 86/SC (optional), – SHF1 - IEC 61156-5, IEC 60332-3-22 – LSZH – Date – Lot no – m Mark or

Shandong Zhongchuan Cable Co – Cat 6A 4x2 AWG23/1 F/UTP or F/FTP or S/UTP or S/FTP Armoured 86/SC (optional), – SHF1 - IEC 61156-5, IEC 60332-3-22 – LSZH – Date – Lot no – m Mark or

Shandong Zhongchuan Cable Co – Cat 7 4x2 AWG22/1 F/UTP or F/FTP or S/UTP or S/FTP Armoured 86/SC (optional), – SHF1 - IEC 61156-5, IEC 60332-3-22 – LSZH – Date – Lot no – m Mark or

Shandong Zhongchuan Cable Co – Cat 7A 4x2 AWG22/1 F/UTP or F/FTP or S/UTP or S/FTP Armoured 86/SC (optional) – SHF1 - IEC 61156-5, IEC 60332-3-22 – LSZH – Date – Lot no – m Mark

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) and selected type tests (ref. to applicable class programs) checked (if not available these tests shall 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