

TYPE APPROVAL CERTIFICATE

Certificate no.:
TAE00001ZR
Revision No:
5

This is to certify:
that the Low Voltage Cable

with type designation(s)
S103 BFOU(i) and BFOU(i)-M 250 V, S104 BFOU(c) and BFOU(c)-M 250 V

issued to
Unika Universal Kablo San. ve Tic. A.S.
ISTANBUL, Türkiye

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 (V)	Temp. class (°C)
S103 BFOU(i) and BFOU(i)-M 250 V	250	90
S104 BFOU(c) and BFOU(c)-M 250 V	250	90

Issued at **Høvik** on **2026-08-20**

This Certificate is valid until **2027-06-29**.

DNV local unit: **Istanbul**

Approval Engineer: **Deep Vaishampayan**



for **DNV**

This document has been digitally signed and will
therefore not have handwritten signature

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

Type: S103 BFOU(i) and BFOU(i)-M 250 V,
S104 BFOU(c) and BFOU(c)-M 250 V

Construction:
Conductors: Tinned, stranded copper according to IEC 60228 class 2 or class 5
Core insulation: Mica-tape helically applied + EPR
Screen: Copper or Aluminium backed polyester tape w/tinned copper drain wire
Bedding: Flame retardant halogen-free compound
Metal covering: Tinned, Copper wire braid
Outer sheath: SHF Mud

NEK 606 types:

Number x elements	Cross section
1 2 3 4 7 8 9 10 cores, pairs, triples	0,75 1,5 2,5
12 14 16 19 24 cores, pairs, triples	0,75 1,5

Comply with IEC 60092-376:

Number x elements	Cross section
1 2 3 4 7 8 9 10 12 14 16 19 24 cores, pairs, triples	1

Manufactured by:

Unika Universal Kablo San. ve Tic. A.S.

Yeni Sulun Sok. No:5 Iclevent 34330 Besiktas – Istanbul, Turkey

Application/Limitation

This cable is fire resistant in accordance with IEC Publication 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: Drawing doc. No. 500/TOVDD/87 rev.1 dated 07.05.2008.
Data table doc. No. 500/TOVD/87 rev.1 dated 05.05.2008.
Test report no: Binder with test reports received 03.12.2008 and 02.01.2009.
Rep.No:TR-2026-024 dated 09.07.2026

Tests carried out

Standard	Issued	General description	Limitation
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 60331-1/2	2018-03	Tests for electric cables under fire conditions - Circuit integrity - Part 1/2: Test method for fire with shock at a temperature of at least 830 °C for cables of rated voltage up to and including 0,6/1,0 kV and with an overall diameter exceeding / not exceeding 20 mm	Minimum 90 min+15 min cooling down time
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
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 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%

Standard	Issued	General description	Limitation
NEK TS606 Ed7	2025-03	Cables for offshore installations - halogen-free low smoke flame-retardant / fire-resistant (HFFR-LS). Technical specification.	Mud resistance test: Required Max variations ±: IRM902 & 903 100°C 7d. TS & E@B, Weight & vol.: ±30% Calc. Bromide 70°C 56d. TS & E@B: ±25%, Weight: ±15%, vol.: ±20% Oil based mud: EDC 95/11 70°C 56d TS & E@B ±30%, Weight & vol.: ±25%
UL2556	2021-04	UL2556 2021-04 UV Resistance Test. ASTM G155 Cycle 1 /UL2556:2021. Irradiance 0,35 W/m²/nm.	720h. Max decay in tensile strength and elongation@break 20% compared with unaged material.

Marking of product

UNIKA – S103 BFOU(i) and BFOU(i)-M 250 V, size – IEC 60331 - IEC 60332-3-22 – Lot No. or
 UNIKA – S104 BFOU(c) and BFOU(c)-M 250 V - size – IEC 60331 - IEC 60332-3-22 – Lot 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