

# TYPE APPROVAL CERTIFICATE

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## This is to certify:

**That the Low Voltage Cable**

with type designation(s)

**Üntel LFMGSSGO (VG 95218/64), LFMSGSSGO (VG 95218/65), LFMSGSSGO (VG 95218/66)**

Issued to

**Üntel Kablolari San. ve Tic. A.S.**  
**Dilovasi, Turkey**

is found to comply with

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

## Application :

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**Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.**

**Rated voltage (V) AC 250, DC 355**

**Temp. class (°C) 90**

Issued at **Hamburg** on **2021-08-17**

This Certificate is valid until **2026-08-16**.

for **DNV**

DNV local station: **Istanbul**

Approval Engineer: **Carsten Hunsalz**

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**Arne Schaarmann**  
**Head of Section**

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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

Type: Üntel LFMGSSGO (VG 95218/64), LFMSGSGO (VG 95218/65), LFMSGSSGO (VG 95218/66)

Rated voltage: 250V AC, 355V DC  
Maximum operating conductor temperature: 90 °C  
Conductor: Copper, stranded IEC 60228  
Insulation: Halogen free cross linked polymeric material  
Individual screen: Plain copper wire braid (for LFMSGSGO and LFMSGSSGO)  
Screen: Plain copper wire braid (double screen for LFMGSSGO and LFMSGSSGO)  
Outer sheath: Halogen free, cross linked elastomeric material

### Number of cores and Cross-sectional area

|                                           |                        |
|-------------------------------------------|------------------------|
| 2, 4, 7, 12, 19, 27 x2x0,4mm <sup>2</sup> | LFMGSSGO A001 to A006  |
| 30, 45, x2x0,4mm <sup>2</sup>             | LFMGSSGO B001 to B002  |
| 2, 4, 7, 12, 19, 27 x2x0,4mm <sup>2</sup> | LFMSGSGO A001 to A006  |
| 5, 12 x3x0,4mm <sup>2</sup>               | LFMSGSSGO A001 to A002 |

## Application/Limitation

The cables have been approved for firm laying, preferable on ships of the Federal Armed Forces.

## Type Approval documentation

Test Report: VDE Certificate of conformity with factory surveillance  
Certificate No. 40052489 / Ref. No. 1773000-5970-0064 / 265856, dated 2020-10-12

BAAINBw Certificate of Approval No. U3.3h/20098, dated 16.10.2020

VDE Certificate of conformity with factory surveillance  
Certificate No. 40053376 / Ref. No. 1773000-5970-0065 / 278942, dated 2021-04-20

BAAINBw Certificate of Approval No. U3.3h/21086, dated 22.04.2021

VDE Certificate of conformity with factory surveillance  
Certificate No. 40049462 / Ref. No. 1773000-5970-0066 / 250260, dated 2019-01-23

BAAINBw Certificate of Approval No. U3.3h/19072, dated 16.08.2019

Specification: VG 95218-64,65,66:2016-12

## Tests carried out

| Standard      | Issued  | General description                                                                                                                                                                       | Limitation |
|---------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| VG 95218-64   | 2016-12 | Cables and insulated wires - Part 64: Cable with single and double screen, with sheath, pair and triple formation, not screened, halogenfree, low fire hazard                             |            |
| VG 95218-65   | 2016-12 | Cables and insulated wires - Part 65: Cable with screen and sheath, cabled single elements, screened, halogenfree, low fire hazard                                                        |            |
| VG 95218-66   | 2016-12 | Cables and insulated wires - Part 65: Cable with screen and sheath, cabled single elements, screened, halogenfree, low fire hazard                                                        |            |
| VG 95218-2    | 2017-12 | Cables and insulated wires - Part 2: Generic specification                                                                                                                                |            |
| IEC 60332-1-2 | 2015-07 | 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 |            |

| Standard       | Issued  | General description                                                                                                                                                     | Limitation                                          |
|----------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| IEC 60332-3-24 | 2018-07 | Tests on electric and optical fibre cables under fire conditions – Part 3-24: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category C |                                                     |
| 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:<br>pH > 4,3<br>Conductivity < 10µS/mm |
| IEC 61034-1/2  | 2019-11 | Measurement of smoke density of cables burning under defined conditions –<br>Test apparatus, procedure and requirements                                                 | Low smoke<br>Light transmittance >60%               |

## Marking of product

ÜNTEL VG 95218 T 064 Type Dash No LFMGSSGO number of cores x size WEEK YEAR LOT NO MT.  
 ÜNTEL VG 95218 T 065 Type Dash No LFMSGSSGO number of cores x size WEEK YEAR LOT NO MT.  
 ÜNTEL VG 95218 T 066 Type Dash No LFMSGSSGO number of cores x size WEEK YEAR LOT NO MT.

## 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