



# TÜRK LOYDU

## TYPE APPROVAL CERTIFICATE

This Certificate consists of 2 pages.

This is to certify that the

### SHIPBOARD COMMUNICATION AND SIGNAL CABLES

With type designations

LFMSGSGO, LFMSGSG or LFMSGSGO-FR

Manufactured by

ÜNTEL KABLOLARI SANAYİ VE TİCARET A.Ş.

Is found to comply with

Türk Loydu Rules Part E Chapter 105,  
VG 95218 – 65 and IEC 60331-21 for fire resistivity

<b>Application</b>	: Communication and signal cable for naval ships
<b>Design</b>	: Voltage class 0.6/1 kV and Temp. class 85°C
<b>Sizes</b>	: According to VG 95218 - 65
<b>Address of Manufacturer</b>	: Demirciler Köyü, Makine OSB, 6. Cadde, No:4, 41455 Dilovası/KOCAELİ TÜRKİYE
<b>Place and date</b>	: İSTANBUL / 07.03.2018

Subject to the conditions referred to in the following pages, this certificate is valid until 27.06.2021.

This certificate supersedes TO.DEB.16-0506-19 numbered and 12.01.2018 date certificate

**Emrah SÖĞÜTÇÜ**  
New Building Division Manager



**Osman Yalçın YALMAN**  
Surveyor



**Product description** : SHIPBOARD COMMUNICATION AND SIGNAL CABLES

**Type Designation** : LFMSGSGO, LFMSGSG or LFMSGSGO-FR

**Materials used** :

All non-metallic materials shall be free of halogens.

**Material for conductors:** Copper for electrical application.

**Material for fire resistivity:** Fire resistive tape around conductor according to IEC 60331-21 (ONLY for LFMSGSG or LFMSGSGO-FR type)

**Material for insulation:** Halogen free cross-linked polyethylene.

**Material for covering of cores:** Halogen free plastic foil.

**Material for screen:** Copper for electrical application.

**Material for sheath:** Halogen free cross linked elastomeric compound, in general on the basis of olefin copolymer.

**Application/ Limitation (Approval conditions):**

For each new building and in service ships under major modifications, factory acceptance tests (routine tests) for cables shall be carried out before mounted to the ship with the witness of TL surveyor.

**Documentation** :

Product test reports (ÜNTEL, VDE, TSE, BOUN)

In-service life test (20'000 h) and determination of temperature index test report (IMQ 2010/12/21 No:01SK00128)

**Test carried out (and results) :**

Type tests according to VG95218 – 65 and IEC 60331-21 only for LFMSGSG or LFMSGSGO-FR type

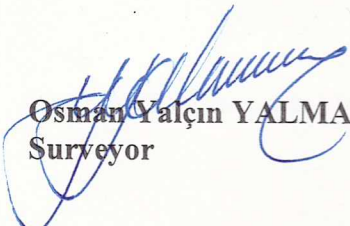
**Place of test carried out** :

Üntel Cable Factory – Ümraniye / İSTANBUL

Üntel Cable Factory – Dilovası /KOCAELİ

**Marking of product:** The product to be marked same as below mentioned.

ÜNTEL [type] [size] [volt. class] [related standards] [temp. class]

  
**Osman Yalçın YALMAN**  
Surveyor

This certificate is subject to terms and conditions described below:

- Any significant change in design or construction may render this Certificate invalid. Type Approval Certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. This certificate is not valid for products without marking above mentioned. The manufacturer should notify TÜRK LOYDU of any modifications or changes to the equipment in order to obtain valid certificate. This certificate shows that tested specimens as representative of the product complies of the TÜRK LOYDU rules, and relevant international instruments that apply to it.