



# TÜRK LOYDU

## TYPE APPROVAL CERTIFICATE

This Certificate consists of 2 pages.

This is to certify that the

### SHIPBOARD GENERAL INSTRUMENTATION, CONTROL AND COMMUNICATION CABLES

With type designations

FMGCG, FMGCH, FMGCH-FFR

Manufactured by

ÜNTEL KABLOLARI SANAYİ VE TİCARET A.Ş.

Is found to comply with

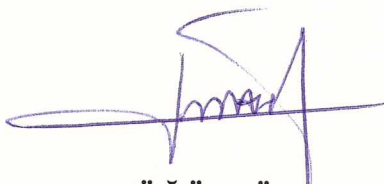
Türk Loydu Rules Chapter 5, Chapter 105,  
DIN 89159, IEC 60092-376, IEC 60332-3 category A, IEC 60331

<b>Application</b>	: General instrumentation, control and communication cables for ships
<b>Design</b>	: Voltage class 250 V and Temp. class 85°C
<b>Sizes</b>	: acc. to DIN 89159
<b>Address of Manufacturer</b>	: Demirciler Köyü, Makine OSB, 6. Cadde, No:4, 41455 Dilovası/KOCAELİ TÜRKİYE
<b>Place and date</b>	: İSTANBUL / 12.01.2018

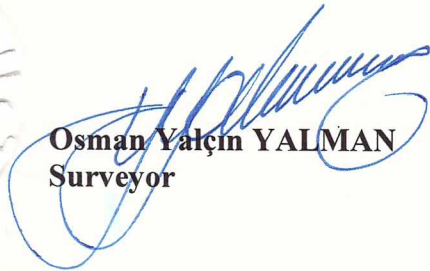


Subject to the conditions referred to in the following pages, this certificate is valid until 27.06.2021.

This certificate supersedes TO.DEB.16-0506-10 numbered and 28.06.2016 date certificate

  
**Emrah SÖĞÜTÇÜ**  
New Building Division Manager



  
**Osman Yalçın YALMAN**  
Surveyor

**Product description** : SHIPBOARD GENERAL INSTRUMENTATION, CONTROL AND COMMUNICATION CABLES

**Type Designation** : FMGCG, FMGCH (con. + ins. + cov. + arm. + she.)  
FMGCH-FFR (con. + FR cov. + ins. + cov. + arm. + she.)

**Materials used** :

**Conductors (con.)** : Stranded copper wire

**Fire Resistive covering (FR cov.)**: mica band

**Insulation (ins.)** : EPR

**Armouring (arm.)** : Copper braid

**Inner Covering (cov.)** : Lapped

**Outer Sheath (she.)** : SE1 for FMGCG and SHF1 for FMGCH acc. to IEC 60092-360

**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. Cables with a conductor cross section of 0.75 mm<sup>2</sup> may only be used for general instrumentation, control and communication with a maximum current consumption of up to 6 ampere.

**Documentation** : Product data sheets and test reports.

**Test carried out (and results)** : Type tests according to DIN 89159, for fire resistive cables according to IEC 60331

**Place of test carried out** : ÜNTEL Cable Factory – Dilovası Kocaeli

**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.