



# TÜRK LOYDU

## TYPE APPROVAL CERTIFICATE

This Certificate consists of 2 pages.

This is to certify that the

SHIPBOARD POWER CABLES  
for LOW VOLTAGE CIRCUITS

With type designations

U-HFFR m, U-HFFRA m, U-HFFRA m EMC

Manufactured by

ÜNİKA ÜNİVERSAL KABLO SANAYİ VE TİCARET A.Ş

Is found to comply with  
Türk Loydu Rules for the Classification of Steel Ships,  
IEC 60092-353, IEC 60331, IEC 60332-3 Cat A/F, IEC 60754, IEC 61034

**Application** : Halogen-free, flame retardant and fire resistive shipboard cables for power and lighting

**Design** : Voltage class: 0.6/1 kV, Temp. class: 90°C

**Sizes** : 1mm<sup>2</sup> to 300 mm<sup>2</sup> according to manufacturer production specification

**Address of Manufacturer** : Veliköy Sanayi Bölgesi Çerkezköy – Tekirdağ / Türkiye

**Place and date** : İSTANBUL / 05.04.2018

Subject to the conditions referred to in the following pages, this certificate is valid until 17.06.2023

**Emrah SÖĞÜTÇÜ**  
New Building Division Manager



**Yağız YILDIRIM**  
Surveyor



**Product description: SHIPBOARD POWER CABLES**

**Type Designation** : U-HFFR m (con. + fr.c + ins. + fil. + cov. + she. )  
U-HFFRA m (con. + fr.c. + ins. + fil. + cov. + arm. + she.)  
U-HFA m EMC (con. + fr.c + ins. + fil. + cov. + dr.w. + scr. + arm. +she.)

**Materials used** :

**Conductors (con.)** : Stranded or bunched plain or tin-coated annealed copper wire  
(class 2 or class 5 according to IEC 60228)

**FR Cover (fr.c.)** : Hellically applied fire resistant mica tape

**Insulation (ins.)** : XLPE according to IEC 60092-360

**Filler (fil.)**: Halogen-free flame retardant thermoplastic extruded compound (optional)

**Covering(cov.)**: Polyester tape

**Drain Wire (dr.w.)**:Plain or tinned copper wire

**Screen (scr.)**: Metal coated polyester tape

**Armouring (arm.)**:Plain or tinned copper braid

**Sheath (she.)** : Polyolefin based thermoplastic halogen-free flame retardant compound  
(SHF1 according to IEC 60092-360)

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

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**Type Approval Documentation :**

Product test reports

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

Type tests according to IEC 60092-353/350/360, IEC 60228, IEC 60332-3 Cat A/F, IEC 60754, IEC 61034, IEC 60331

**Place of test carried out** :

ÜNİKA Cable Factory – ÇERKEZKÖY

**Marking of product:**

ÜNİKA [type] [size] [volt] [related standards]



**Yağız YILDIRIM**

**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.