



TÜRK LOYDU

TYPE APPROVAL CERTIFICATE

This is to certify that the
Shipboard Power, Lighting and Control Cables

Manufacturer : **2M KABLO SANAYİ VE TİCARET A.Ş.**

Address : **Organize Sanayi Bölgesi, Gaziosmanpaşa Mahallesi, 4. Cadde, No:18, 59500 Çerkezköy/Tekirdağ**

Product Type : **M2X**

Reference Rule : **TL Rules, Part E, Chapter 105 - Naval Ship Technology, Electrical Installations, 01.01.2022**
IEC 60092-360 Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables , 04.01.2021
IEC 60092-350 General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications, 28.01.2020
IEC 60754 - 1&2 Test on gases evolved during combustion of materials from cables, 17.11.2011
TL Rules, Part B, Chapter 5, Electric , 01.01.2024
IEC 60332-3-22, 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 , 19.11.2018
IEC 60092-353 Power cables for rated voltages 1 kV and 3 kV, 06.06.2024
IEC 60228:2023 Conductors of insulated cables, 11.12.2023
IEC 60332-1-2 Tests on electric and optical fibre cables under fire conditions, 10.06.2025
IEC 60684-2 Flexible insulating sleeving - Part 2: Methods of test, 05.09.2025
IEC 61034-1 Measurement of smoke density of cables burning under defined conditions - Part 1: Test apparatus, 20.04.2005
IEC 61034-2:2005/AMD2:2019 Measurement of smoke density of cables burning under defined conditions, 22.11.2019

Subject to the conditions referred to in the following pages, this certificate is valid until **03.08.2031**

Surveyor: **Abdullah DEMİRCİ**

Issued at **İstanbul** on **18.06.2026**



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Emrah SÖĞÜTÇÜ
New Building Division Manager
TÜRK LOYDU

Expire Date of Previous Certificate: 03.08.2026

This certificate is subject to terms and conditions described below:

Any significant change in design or construction may render this Certificate invalid. 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 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.

Product	: Shipboard Power, Lighting and Control Cables
Type of Product	: M2X
Approval No / Date	: PAE-EPAS/024434/26-0561/MY/06.04.2026
Application	: Low voltage power, lighting and control internal cables for Shipboard Installations. Not intended for use as essential cables.
Cross Section	: 1-300mm ²
Type Designation	: M2X: Halogen free unarmored, unsheathed power internal cables
Material Used	: Conductor: Bare or tinned stranded copper - Class 2 or 5 Material for Insulation: HF90 cross-linked compound in which the polymer is a polyolefin or equivalent synthetic polymer not containing halogens providing a compound which is compliant with type HF 90 Colour of Sheat: Black or Yellow/Green (other colors available on request)
Rated Voltage	: 0.6-1 kV
Operating Temperature	: -40°C to +90°C
Application/Limitation	: Naval Application are not covered with this Type Approval Certificates.
Documentation	: 1. Routine Test Report, Issued By 2MKABLO-15.05.2026 2. Ageing Test with Air Oven Test Report, Issued By 2MKABLO-15.05.2026 3. HotSet Test for HF90 Test Report, Issued By 2MKABLO-15.05.2026 4. Flame Propagation Test Report Issued By 2MKABLO-15.05.2026 5. Halogen Content -Determination of Acidity and Conductivity Test Report, Issued By 2MKABLO-07.05.2026 6. Smoke Density Test Report, Issued By 2MKABLO-07.05.2026 7. Increase in AC Capacitance Test Report, Issued By 2MKABLO-DD.MM.YYYY
Performed Tests	: Following Test have been carried out and found satisfactory; Quality Audit Visual Inspection and Dimensional Controls Marking & Print Durability Control Mechanical Controls; -Tensile Strength and Elongation Tests Thermal Effect Tests; -Hot Set Test Flame Retardant Test Tensile Strength and Elongation Change Tests Before/After Ageing Treatment Smoke Density Test Electrical Controls; -Conductor Resistance Test -High Voltage Test -Insulation Resistance Test -Increase in AC Capacitance Test Halogen Content Control, Corrosivity of Combustion Gases and Fluorine Content Test
Test Place	: Organize Sanayi Bölgesi, Gaziosmanpaşa Mahallesi, 4. Cadde No:18, 59500 Çerkezköy/Tekirdağ
Marking of Product	: 2MKABLO, [Lot Number], [related standards] [type] [size] [voltage class] [Production Year] [Cable Length]
Last Inspection Date	: 15.05.2026

Approval Conditions : -