



Confirmation of Product Type Approval

Company Name: 2M KABLO SAN. VE TIC. A.S.

Address: GAZIOSMANPASA OSB MAHALLESİ 4.CADDENO:18 A CERKEZKOY TEKIRDAG Turkey

Product: Cable, Power and Control

Model(s): M2XCH FE180; M2XSH FE180; M2XACH FE180; M2XASH FE180 FM2XCH FE180;
FM2XSH FE180; FM2XCCH FE180; FM2XCSH FE180; FM2XACH FE180; FM2XAACH FE180;
FM2XAASH FE180

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	26-0565763-PDA	02-JUN-2026	01-JUN-2031
Manufacturing Assessment (MA)	22-5147135	09-MAR-2022	08-MAR-2027
Product Quality Assurance (PQA)	NA	NA	NA

Tier

3 - Type Approved, unit certification not required

Intended Service

Low voltage power and control cables for electrical equipment of shipboard applications. Not intended for use as propulsion cables.

Description

Fire resistant halogen-free, power and control cables

Insulation: XLPE

Flame barrier: Mica Tape

Inner Sheath / Separator: Halogen free filler or Polyester tape

Screen / Armour: Electrolytic Copper Wire Braiding (90% Coverage) and drain wire or galvanised steel braid

Sheath: Halogen-free, flame retardant compound (HFFR) (SHF1) (Green)

Ratings

Voltage grade: 0.6/1 kV (Power), 150/250 V (Control)

Maximum conductor operating temperature: 85 deg. C

Lowest ambient temperature for fixed installation: -40 deg. C

Service Restrictions

Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments

1. The installation of single conductor cables are to be in accordance to 4-8-4/21.7 of ABS Marine Vessel Rules.
2. The armor of single-conductor alternating-current cables is to be non-magnetic in accordance to 4-8-3/9.11 of ABS Marine Vessel Rules.
3. The following cable markings are to be provided in accordance with IEC 60092-353:
 - Indication of origin (manufacturer's name or trade mark) and rated voltage (U₀/ U) and construction (number of cores and cross sectional area of the conductor).
4. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
5. Not suitable for installation in mechanically aggressive environments and UV exposed applications.
6. When cables are used in hazardous areas, they are to be armored or mineral-insulated metal-sheathed, except for cables of intrinsically safe circuits subject to the requirements of 4-8-4/21.15 of ABS Marine Vessel Rules. Where cables pass through boundaries of such locations, they are to be run through gastight fittings. No splices are allowed in hazardous areas, except in intrinsically safe circuits.
7. For cables intended for routing between hazardous area and safe area, test report for limitation of the gas flow through the cable, as specified in Table 9 of IEC 60092-353:2024 and Table 10 of IEC 60092-376:2025, by independent 3rd party laboratory is to be provided. Alternatively, test can be performed at the manufacturer's in-house laboratory facilities in the presence of the attending ABS Surveyor.

Notes, Drawings and Documentation

Drawing No. 0158-4-22, Datasheet - FM2XCH FE180 & FM2XSH FE180, Revision: 1, Pages: 2

Drawing No. 7, LR Approved Sample Test Reports, Revision: 0, Pages: 35

Drawing No. 8, Confirmation Regarding TS IEC 60331-21-2006, Pages: 3

Previously Submitted Documentation:

Drawing No. 0155-2-22, Datasheet, Revision: -, Pages:

Drawing No. 0158-4-22, Datasheet, Revision: -, Pages:

Drawing No. 0249-1-22, Datasheet, Revision: -, Pages:

Drawing No. 0250-3-22, Datasheet, Revision: -, Pages:

Drawing No. 0253-2-22, Datasheet, Revision: -, Pages:

Drawing No. Test Report 2M Kablo Turkey, Smoke Density_PRD00051430_21.01.2016, Revision: -, Pages:

Drawing No. Test Report 2M Kablo Turkey, Smoke Density PRD00051445 05.01.2016, Revision: -, Pages:

Drawing No. Test Report Zwick-Roell Lab Turkey, PRD00051430, 21.01.2016 Revision: -, Pages:

Drawing No. TSE DeneTurkey, Test Report - PRD00051430 IEC 60754-1 & -2, 04.02.2016 Revision: -, Pages:

Drawing No. TSE Dene Turkey, Test Report - PRD00051430 IEC 60684-2, 11.03.2016 Revision: -, Pages:

Drawing No. Test Report Zwick-Roell Lab Turkey, PRD00051445,13.01.2016 Revision: -, Pages:

Drawing No. TSE Dene Turkey, Test Report - PRD00051445_IEC 60684-2, 08.03.2016 Revision: -, Pages:

Drawing No. TSE Dene Turkey, Test Report - PRD00051445_IEC 60754-1 & -2, 04.02.2016 Revision: -, Pages:

Drawing No. Test Report Zwick-Roell Lab Turkey, PRD00051430, 13.01.2016 Revision: -, Pages: -

Drawing No. Test Report_2M Kablo Turkey,- IS3059526, 04.02.2016 Revision: -, Pages: -

Drawing No. Statement of design description 17 Sept. 2021, Revision: -, Pages:

Term of Validity

This Product Design Assessment (PDA) Certificate remains valid until 01/Jun/2031 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

ABS Rules

2026 Rules for Conditions of Classification - Ship 1A-1-4/7.7, 1A-1-A3 and A4, which covers the following:

2026 Rules for Building and Classing Marine Vessels: 4-8-3/9.1, 4-8-3/9.3, 4-8-3/9.5, 4-8-3/9.7, 4-8-3/9.9

2025 Rules for Conditions of Classification - Offshore 1B-1-4/9.7, 1B-1-A2 and A3, which covers the following:

2026 Rules for Building and Classing Offshore Units: 4-3-4/7.1.1, 4-3-4/7.1.2, 4-3-4/7.1.3, 4-3-4/7.1.4

2026 Rules for Conditions of Classification - Light and High-Speed Craft 1C-1-4/11.9, 1C-1-A2 and A3, which covers the following:

2026 Rules for Building and Classing High Speed Crafts: 4-6-4/13.1.1, 4-6-4/13.1.2, 4-6-4/13.1.3, 4-6-4/13.1.4

International Standards

IEC 60228 (Ed. 4.0: 2023),

IEC 60092-353 (Ed. 5.0: 2024),

IEC 60332-3-10 (Ed. 2.0: 2018),

IEC 60684-2 (Ed. 4.0: 2025),

IEC 60811-501 (Ed 1.0: 2012/AMD2: 2023),

IEC 60092-376 (Ed. 4.0: 2025),

IEC 60332-1-1 (Ed. 1.1: 2015),

IEC 60332-1-2 (Ed. 2.0: 2025),

IEC 60332-3-22 (Ed. 2.0: 2018) Cat A,

IEC 61034-1/2 (Ed. 3.2: 2019),
IEC 60754-1 (Ed. 3.1: 2019),
IEC 60754-2 (Ed. 2.1: 2019),
IEC 60331-1/2 (Ed 2.0: 2018),
IEC 60092-350 (Ed. 5.0: 2020)

EU-MED Standards

NA

National Standards

TS IEC 60331-21: 2006

Government Standards

NA

Other Standards

NA



A handwritten signature in blue ink, appearing to read "Joseph W. ...".

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 04-Jun-2026 6:40

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.