Certificate number: 11733/E4 BV
File number: ACE 01/126/04
Product code: 2501H

This certificate is not valid when presented without the full attached schedule composed of 7 sections. Full certificate is to be requested to the manufacturer

www.veristar.com

TYPE APPROVAL CERTIFICATE

This certificate is issued to

UNTEL KABLOLARI SANAYI VE TICARET A/S

KOCAELI - Türkiye

for the type of product

CABLES (LOW VOLTAGE)

0.6/1 & 1.8/3 kV
Type: MG series and M2X series.

Requirements:
BUREAU VERITAS Rules for the Classification of Steel Ships and Naval Ships.
IEC 60092-350 (2020), IEC 60092-353 (2024), IEC 60092-360 (2021), IEC 60092-376 (2025)
IEC 60228 (2023)
IEC 60331-1 (2018)
IEC 60332-1-2 (2025), IEC 60332-3-22 Cat.A (2018)
IEC 60754-1/2 (2019)
IEC 61034-1/2 (2019)

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 31 Jul 2028

For Bureau Veritas Marine & Offshore,
At BV ISTANBUL, on 28 Sep 2026,
Gurcan Yilmaz

This certificate was created electronically and is valid without signature

This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Flame Retardant and Fire Resistant (FFR Type only) Lighting and Control cables.

1.1 - Common specifications:

Rated voltage:	0.6/1 & 1.8/3 kV
Temperature class:	90°C
Flame retardant:	IEC 60332-1-2 and IEC 60332-3-22 (Cat. A)
Fire resistant:	IEC 60331-1 (FFR Type only)
Halogen Free:	IEC 60754-1/2
Low Smoke:	IEC 61034-1/2
Fire and water spray resistant:	IEC 60331-2 + EN 50200 (WSR/WJR type)
Fire and water jet resistant:	IEC 60331-1 + BS 8491 (WSR/WJR type)

1.2 - Construction:

Conductor:	Plain or tinned stranded copper - Class 2 or class 5 (flex type)
Fire protection:	Fire Resistant Foil (FFR type)
Insulation:	XLPE (2X without WSR/WJR type) HEPR (G type) HF90 (WSR/WJR type)
Individual screen:	Aluminium Polyester tape (M2XCH (EMC) CC type**)**
Bedding and/or inner sheath and/or filler:	Bedding/Inner sheath: Halogen free & flame retardant compound Filler: Flame retardant & non hygroscopic material
Foil:	Halogen Free foil
Braiding:	Copper wires (C Type)
Screen:	Copper braiding screen with copper polyester tape (M2XCH (EMC) CC type**)**
EMC Screen:	Electrolytic copper tape (EMC Type)
VFD Screen:	Copper / Polyester tape coverage 100% and copper wire braided screen min. coverage 90% (VFD type)
Outer Sheath:	SHF1 or SHF2 SHF1 (M2XCH (EMC) CC type**)**

1.3 - Product Range:

Type	Number of cores	Cross sectional areas (mm^2)	Rated Voltage
MGH **MGCH**	1	1.5 to 400	0.6/1 kV
	2, 3	1 to 300	
	4, 5	1 to 240	
	7 to 14	1 to 2.5	
	16 to 24	1.5 to 2.5	
	60	6	
MGH-FFR **MGCH-FFR**	1	2.5 to 400	
	2, 3	1 to 300	
	4, 5	1 to 240	
	7	1 to 2.5	
	10 to 37	1.5 to 2.5	
M2XH, M2XH-FFR **M2XCH, M2XCH-FFR** **M2XCH-FFR-EMC**	1	1.5 to 400	
	2, 3	1 to 300	
	4, 5	1 to 240	
	7	1 to 2.5	
	10 to 61	1.5 to 2.5	
MGCH-EMC **M2XCH-EMC**	3 to 5	1.5 to 300	
M2XCH-FFR WSR/WJR **M2XCH-FFR EMC WSR/WJR** **M2XH-FFR WSR/WJR**	1 to 61	1 to 400	
M2XCH FFR-VFD	1	10 to 240	
	3+3E	16+6E to 240+50E	
MGCH-SMF-EMC **MGCH-FFR-EMC-SMF**	3, 4	35 to 240	
MGCH-EMC **MGCH-FFR-EMC**	1, 3, 4	1 to 300	
	2	1 to 240	
	5	1 to 120	
	7 to 37	1.5 to 2.5	
M2XCH-VFD	1 to 5	1.5 to 300	0.6/1 kV
	1 to 5	10 to 300	1.8/3 kV
	3+3E	16+6E to 240+50E	
M2XCH -EMC	1 to 5	1.5 to 300	1.8/3 kV
M2XCH (EMC) CC **M2XCH (EMC) CC FFR**	3+1P	1.5 to 4 + 0.5	0.6/1 kV + 150/250V
	3+2P	2.5 + 0.5	
	3G+1P	1.5 to 2.5 +1.5	
	4G + 1P	1.5 to 10 + 1.5	

2. DOCUMENTS AND DRAWINGS:

Specification Ref. 2019_02-TS-98, rev.01, dated 10 Apr 2019.
Specifications Ref. FR70-020, rev.01, FR70-030, rev.01, FR70-031, rev.01 and FR70-041, rev.01, dated 19 Jul 2019.
Specifications Ref. FR70-044, rev.01, FR70-050, rev.01 and FR70-051, rev.01, dated 19 Jul 2019.
Specification Ref. 2019_05-TS-127, rev.05, dated 06 Oct 2019.
Specifications Ref. 2022_12-TS-10, rev.00 and 2022_12-TS-12, rev.00, dated 05 Dec 2022.
Specifications Ref. 2022_12-TS-8, rev.00 and 2022_12-TS-20, rev.00, dated 09 Dec 2022.
Specification Ref. FR70-021, rev.03, dated 26 Dec 2022.
Specification Ref. 2019-07-TS_95, rev.02, dated 08 Jan 2023.
Specifications Ref. 2019_02-TS-34, rev.03 and 2019_02-TS-96, rev.02 dated 09 Jan 2023.
Specification Ref. R00_2023_01_TS_22, dated 10 Jan 2023.
Specification Ref. 2023_03_134, dated 24 Mar 2023.
Specification Ref. 2023_09-TS_105, rev.00, dated 29 Sep 2023.
Specification Ref. 2023-10-TS-141, rev.01, dated 24 Oct 2023.
Specification Ref. 2026_05-TS-18702, rev.01, dated 18 May 2026.
Specification Ref. 2026_07-TS-18702-2, rev.02, dated 21 Jul 2026.
Specfications Ref. 46002-16062-1 M2XCH VFD 0.6/1kV, rev.00 and 46002-16062-1 M2XCH VFD 1.8/3kV, rev.00, dated 11 Dec 2025.

3. TEST REPORTS:

VDE test report ref. 17730-9020-0001 / 32ZFM dated 2001-08-22.
Manufacturer's test report ref. 01/09/300/1 dated 2001-09-12.
Manufacturer's test report ref. 03/11/600 dated 2003-11-28.
Manufacturer's test report ref. 03/11/602, dated 26.05.2005, stamped by BV.
UNTEL KABLO A.S.: Tests on rubber and elastomer, dated 18/05/2005.
TSE Test Report, ref. 016.01.05/05-1166, dated 14/06/2005.
UNTEL KABLO A.S.: Routine Test Reports dated 16.03.2007.
UNTEL KABLO A.S.: Routine Test Report Ref. 11.04 dated 09.11.2009.
UNTEL KABLO A.S : Routine test reports dated 12/Jan./2010
Manufacturer's test report for M2XCH cables, dated 28.12.2012, stamped by BV.
Manufacturer's test report ref. D172480, dated 26.01.2018, stamped by BV.
Manufacturer's test report ref. BV-2018-006-1, dated 17.01.2018, stamped by BV.
Test reports Ref. P11733-1901-R0, P11733-1902-R0, P11733-1904-R0 and P11733-1905-R0, dated 27 Feb 2019.
Test reports Ref. T11733-1901-R0, T11733-1902-R0 and T11733-1905-R0, dated 05 Mar 2019.
Test reports Ref. P11733-1903-R0 and T11733-1903-R0, dated 14 Mar 2019.
Test report Ref. T11733-1904-R0, dated 05 Apr 2019.
Test reports Ref. MT1905-RO to MT1908-RO, dated 16 May 2019.
Test reports Ref. MT1909-RO to MT1918-RO, dated 04 Jul 2019.
Test report Ref. 388203, dated 07 Feb 2018.
Test report Ref. 471761, dated 27 May 2019.
Test reports, dated 04 Jul 2019.
Test reports, dated 07 Jun 2022.
Test report, dated 16 Jun 2022.
Test report, dated 10 Jan 2023.
Test reports Ref. T19031-R00, 19032-R00, 19033-R00, T19034-R00, T19035-R00, T19036-R00, T19037-R00 and 19038-R00, dated 03 May 2023.
Test reports Ref. 2023-10-1, dated 23 Oct 2023.
Test report dated 08 Oct 2024.
Test report Ref. 202521224, dated 23 Dec 2025.
Test report Ref. 202617241, dated 11 Jun 2026.
Test report Ref. 202617241-1, dated 24 Jun 2026.

4. APPLICATION / LIMITATION:

BUREAU VERITAS Rules for the Classification of Steel Ships and Naval Ships.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above products are to be supplied by **UNTEL KABLOLARI SANAYI VE TICARET A/S** in compliance with the type described in this certificate.
5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.
5.3 - **UNTEL KABLOLARI SANAYI VE TICARET A/S** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.
5.4 - For information, **UNTEL KABLOLARI SANAYI VE TICARET A/S** has declared to Bureau Veritas the following production site:

UNTEL KABLOLARI SANAYI VE TICARET A/S
DEMIRCILER KOYU
MAKINE OSB
6.CADDE NO.4 41455
DILOVASI
KOCAELI
Türkiye

6. MARKING OF PRODUCT:

The cable shall be marked on the surface outer sheath, in a durable legible and visible manner, with the following information throughout the length of cable:
- Rated voltage
- Number of cores and cross-sectional area of the conductors
- Applicable standards to flame retardant and fire resitance (with the category if applicable)
- Manufacturer's name or trademark
- Code designation (optional)

7. OTHERS:

7.1 - It is **UNTEL KABLOLARI SANAYI VE TICARET A/S**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 11733/E3 BV, issued by the Society.

***** END OF CERTIFICATE *****