



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. E-8731
This Certificate consists of 4 pages

This is to certify that the
Electric Cable, Power Current
with type designation(s)
U-HF m, U-HF m (C)

Manufactured by
Unika Universal Kablo San. ve Tic. A.S.
ISTANBUL, Turkey

is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards
IEC 60092-353 (2001-04)
IEC 60332-3-22 (2000-10)
IEC 60754-1 (1994-01)
IEC 60754-2 (1997-04)
IEC 61034-2 (2005-04)

Application

General power and lighting. Unscreened. Halogen free. Low smoke.

Type	Voltage class (kV)	Temp. class (°C)
U-HF m	0,6/1	90
U-HF m (C)	0,6/1	90

Place and date
Høvik, 2009-03-06

for DET NORSKE VERITAS AS

Trond Sjøvåg
Trond Sjøvåg
Head of Section



Local Office
DNV Istanbul

This Certificate is valid until
2011-12-31

Ivar Bull
Ivar Bull
Surveyor

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Cert. No.: E-8731
 File No.: 827.10
 Job Id.: 262.1-003326-3

Product description

Type: U-HF m & U-HF m (C) 0,6/1 kV

Construction:

Conductors: Plain or tinned stranded copper class 2 or class 5

Core insulation: XLPE

Inner covering: Halogen free compound

Screen: Metal coated polyester tape w/plain or tinned drain wire (C)

Outer sheath: SHF1

Number of cores x conductor cross-section mm ²	Overall Diameter ±10% mm	Number of cores x conductor cross-section mm ²	Overall Diameter ±10% mm	Number of cores x conductor cross-section mm ²	Overall Diameter ±10% mm
U-HF m		2 x 70	31,5	4 x 50	29,4
1 x 1,0	4,8	2 x 95	36,5	4 x 70	33,9
1 x 1,5	5,1			4 x 95	38,8
1 x 2,5	5,5	3 x 1,0	7,9	4 x 120	43,8
1 x 4	6,1	3 x 1,5	8,8	4 x 150	47,6
1 x 6	6,5	3 x 2,5	9,6		
1 x 10	7,5	3 x 4	10,9	5 x 1,0	8,1
1 x 16	8,7	3 x 6	12,0	5 x 1,5	10,4
1 x 25	10,4	3 x 10	14,4	5 x 2,5	11,7
1 x 35	11,7	3 x 16	16,7		
1 x 50	13,2	3 x 25	22,8	7 x 1,0	10,4
1 x 70	15,3	3 x 35	25,4	7 x 1,5	11,5
1 x 95	17,4	3 x 50	29,2	7 x 2,5	12,7
1 x 120	19,7	3 x 70	33,7		
1 x 150	21,3	3 x 95	38,6	8 x 1,5	16,0
1 x 185	23,7	3 x 120	43,6		
1 x 240	26,7	3 x 150	47,2	12 x 1,0	13,9
1 x 300	29,4	3 x 185	52,8	12 x 1,5	15,2
		3 x 240	59,2	12 x 2,5	17,0
2 x 1,0	7,5				
2 x 1,5	8,1	4 x 1,0	8,8	16 x 1,0	15,4
2 x 2,5	9,1	4 x 1,5	9,6	16 x 1,5	17,0
2 x 4	10,3	4 x 2,5	10,5	16 x 2,5	18,9
2 x 6	11,3	4 x 4	12,2		
2 x 10	13,3	4 x 6	13,1	19 x 1,0	16,2
2 x 16	15,5	4 x 10	15,8	19 x 1,5	17,9
2 x 25	21,3	4 x 16	18,4	19 x 2,5	20,1
2 x 35	23,7	4 x 25	23,0		
2 x 50	26,9	4 x 35	25,6	24 x 1,0	18,2



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Number of cores x conductor cross-section mm ²	Overall Diameter ±10% mm
24 x 1,5	20,2
24 x 2,5	22,7
27 x 1,0	19,6
27 x 1,5	21,6
27 x 2,5	24,2
37 x 1,0	22,1
37 x 1,5	24,3
37 x 2,5	27,5
U-HF m (C)	
1 x 1,0	5,6
1 x 1,5	5,9
1 x 2,5	6,3
1 x 4	6,9
1 x 6	7,3
1 x 10	8,5
1 x 16	9,5
1 x 25	11,4
1 x 35	12,5
1 x 50	14,2
1 x 70	16,1
1 x 95	18,2
1 x 120	20,5
1 x 150	22,3
1 x 185	24,7
1 x 240	27,7
1 x 300	30,5
2 x 1,0	8,5
2 x 1,5	9,1
2 x 2,5	9,9
2 x 4	11,3
2 x 6	12,1
2 x 10	14,3
2 x 16	16,3

Number of cores x conductor cross-section mm ²	Overall Diameter ±10% mm
2 x 25	22,3
2 x 35	24,7
2 x 50	27,9
2 x 70	32,3
2 x 95	36,9
3 x 1,0	8,9
3 x 1,5	9,6
3 x 2,5	10,5
3 x 4	12,0
3 x 6	12,8
3 x 10	15,2
3 x 16	17,5
3 x 25	23,6
3 x 35	26,2
3 x 50	30,2
3 x 70	34,5
3 x 95	39,4
3 x 120	44,4
3 x 150	48,0
3 x 185	53,6
3 x 240	60,2
4 x 1,0	9,6
4 x 1,5	10,4
4 x 2,5	11,5
4 x 4	13,0
4 x 6	14,2
4 x 10	16,8
4 x 16	19,4
4 x 25	25,9
4 x 35	29,2
4 x 50	33,2
4 x 70	38,6
4 x 95	43,6
4 x 120	49,1
4 x 150	53,6

Number of cores x conductor cross-section mm ²	Overall Diameter ±10% mm
5 x 1,0	10,4
5 x 1,5	11,4
5 x 2,5	12,5
7 x 1,0	11,4
7 x 1,5	12,3
7 x 2,5	13,5
10 x 1,0	13,5
10 x 1,5	14,9
10 x 2,5	16,6
12 x 1,0	14,7
12 x 1,5	16,0
12 x 2,5	17,9
16 x 1,0	16,2
16 x 1,5	17,9
16 x 2,5	19,9
19 x 1,0	17,2
19 x 1,5	18,7
19 x 2,5	20,9
24 x 1,0	19,3
24 x 1,5	21,0
24 x 2,5	23,5
27 x 1,0	20,5
27 x 1,5	22,6
27 x 2,5	25,2
37 x 1,0	23,0
37 x 1,5	25,3
37 x 2,5	28,3



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Application/Limitation

The requirements of SOLAS Amendments Chapter II-1, Part D, Reg. 45, 5.2 (provision to be taken to limit Fire Propagation along Bunches of Cables or Wires) are fulfilled without any additional measures.

Type Approval documentation

Data sheets and drawings:

Data sheet and drawing U-HF m

Data sheet and drawing U-HF m (C)

Test reports:

IEC60332-3 Cat A dated 21.09.2007.

Electrical and physical routine test report No. 13550

Tests carried out

Type test according to IEC 60092-353, IEC 60332-3-22, IEC 60754-1/2, IEC 61034-1/2.

Marking of product

Product to be marked: UNIKA KABLO - U-HF m or U-HF m (C) - size - 0,6/1 kV

Certificate retention survey

The scope of the retention/renewal survey is to verify that the conditions stipulated for the Type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the survey are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Survey to be performed at least every second year.

END OF CERTIFICATE