



REPORT OF PERFORMANCE

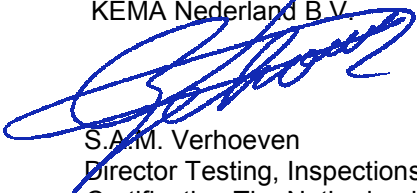
TIC 1619-12

OBJECT	2-core control cable
TYPE	500 V, 2x1,5 mm ² CU/MICA/XLPE/OS/LSHF
MANUFACTURER	United Industries-Elsewedy 10th of Ramadan City, Egypt
CLIENT	Elsewedy Cables Group, Cairo, Egypt
TESTED BY	KEMA HIGH-VOLTAGE LABORATORY Arnhem, The Netherlands
DATE OF TESTS	1 to 6 November 2012
TEST PROGRAMME	Several fire test based on client's instructions: Flame spread test on single cables in accordance with IEC 60332-1-2, Tests for electric cables required to maintain circuit integrity under fire conditions in accordance with BS 6387 (1994) and smoke emission test in accordance with IEC 61034-2 (2005).
SUMMARY AND CONCLUSION	The object passed the tests.

This Report of Performance applies only to the object tested. The responsibility for conformity of any object having the same designations with that tested rests with the Manufacturer.

This report consists of 14 pages in total.

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KEMA Nederland B.V.

S.A.M. Verhoeven
Director Testing, Inspections &
Certification The Netherlands

Arnhem, 8 July 2013

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1 IDENTIFICATION OF THE TEST OBJECT

1.1 Description of the test object

Manufacturer	United Industries-Elsewedy 10 th of Ramadan City – Industrial Zone A3 – Egypt
Type	fire resistance cable
Year of manufacture	2012
Sampling procedure	by the manufacturer
Rated voltage, U_0	500 V
No. of cores	2
Marking on the cable	ELSEWEDY CABLES = 2x1,5 mm ² CU/MICA/XLPE/OS/LSHF 500 V FIRE RESISTANT CABLE 2012

Conductor

- material	copper
- cross-section	1,5 mm ²
- approx. diameter/dimensions	1,5 mm
- type/shape of conductor	stranded plain annealed
- maximum conductor temperature in normal operation	90 °C

Insulation

- material	MICA tape + XLPE
- nominal thickness	MICA tape: 0,11 mm XLPE: 0,6 mm
- material designation	MICA tape: Vonroll 366.19-80 XLPE: LE4423/LE 4476
- material supplier	MICA tape: Vonroll XLPE: Borealis
- core identification	red, black

Binder tape

- approx. dimensions	polyester tape 1 x 0,023 mm
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Metallic screen

- material aluminium/polyester laminated tape in contact with tinned copper drain wire
- cross-section 0,2 mm²
- number and nominal diameter of wires 7 wires of 0,2 mm
- nominal thickness and width of tape 0,024 x 30 mm (overlap of 20 %) approx.
- nominal thickness/diameter 0,023 mm for polyester tape
0,024 mm for Al/PET tape
nominal diameter after screen 6,8 mm

Oversheath

- material Low Smoke Halogen Free “90”
- nominal thickness 1 mm
- outer diameter of cable 8,8 mm
- material designation HF 4522
- material supplier Fain Plast
- colour red

Fire retardant

yes

Manufacturing details

- location of manufacturing United Industries-Elsewedy
10th of Ramadan City – Industrial Zone A3 – Egypt
- factory identification of extrusion line Insulation: EXT007
Sheating: EXT002
- manufacturer of the extrusion lines Maillefer
- identification of the production batch 697/2011/3R
- manufacturing length (where cable sample for testing has been taken from) 528 m
- length markings on cable sample sent to KEMA begin: 395 m
end: 517 m

1.2 List of documents

The manufacturer has guaranteed that the object submitted for tests has been manufactured in accordance with the following documents.

KEMA has verified that these documents adequately represent the object tested.

The following documents are included in this report:

drawing no./ document no.	revision	date	title
Tech. Offer NO.:041071	1	09-10-2012	CU/MICA/XLPE/OS/LSHF
Technical offer	0	9-10-2012	Flame Retardant Multi Core cable with Stranded Plain annealed Copper conductor, Mica + XLPE insulated LSHF sheathed – 500 V

2 GENERAL INFORMATION

2.1 The tests were witnessed by

The tests were not witnessed.

2.2 The tests were carried out by

Name	Company
Mr B. Vos	DEKRA Certification B.V., Arnhem, The Netherlands

2.3 Subcontracting

All tests were subcontracted to DEKRA Certification B.V.

2.4 Purpose of the test

Purpose of the test was to verify whether the material complies with the specified requirements.

2.5 Applicable standards

When reference is made to a standard and the date of issue is not stated, this applies to the latest issue, including amendments, which have been officially published prior to the date of the tests.

3 FLAME SPREAD TEST ON SINGLE CABLES

Standard and date

Standard IEC 60332-1-2 (2004)

Test date 6 November 2012

Characteristic test data

Duration 60 s

item	unit	requirement	measured/determined
- length free of charring	mm	> 50	390
- downward limit charred surface	mm	< 540	480

Result

The object passed the test.

4 TEST FOR ELECTRIC CABLES REQUIRED TO MAINTAIN CIRCUIT INTEGRITY UNDER FIRE CONDITIONS _ RESISTANCE TO FIRE ALONE (CATEGORY C)

Standard and date

Standard BS 6387 (1994)
Test date 1 November 2012

Characteristic test data

Flame application time 3 Hours
Test voltage 500 V

item	unit	requirement	calculated/measured
- temperature	°C	950 ± 40	956
- result to be obtained		no fuses fails or circuit-breaker is interrupted and the lamp is not extinguished	pass

Result

The object passed the test.

5 TEST FOR ELECTRIC CABLES REQUIRED TO MAINTAIN CIRCUIT INTEGRITY UNDER FIRE CONDITIONS _ RESISTANCE TO FIRE WITH WATER (CATEGORY W)

Standard and date

Standard BS 6387 (1994)
Test date 1 November 2012

Characteristic test data

Flame application time to fire alone 15 Minutes
Flame application time together with water spray 15 Minutes
Test voltage 500 V

item	unit	requirement	calculated/measured
- temperature	°C	650 ± 40	650
- result to be obtained		no fuses fails or circuit-breaker is interrupted and the lamp is not extinguished	pass

Result

The object passed the test.

6 TEST FOR ELECTRIC CABLES REQUIRED TO MAINTAIN CIRCUIT INTEGRITY UNDER FIRE CONDITIONS _ RESISTANCE TO FIRE WITH MECHANICAL SHOCK (CATEGORY Z)

Standard and date

Standard BS 6387 (1994)
Test period 1 November 2012

Characteristic test data

Flame application time 15 minutes
Test voltage 500 V
Bend radius 6 x D

item	unit	requirement	calculated/measured
- temperature	°C	950 ± 40	965
- result to be obtained		no fuses fails or circuit-breaker is interrupted and the lamp is not extinguished	Pass

Result

The object passed the test.

7 SMOKE EMISSION TEST

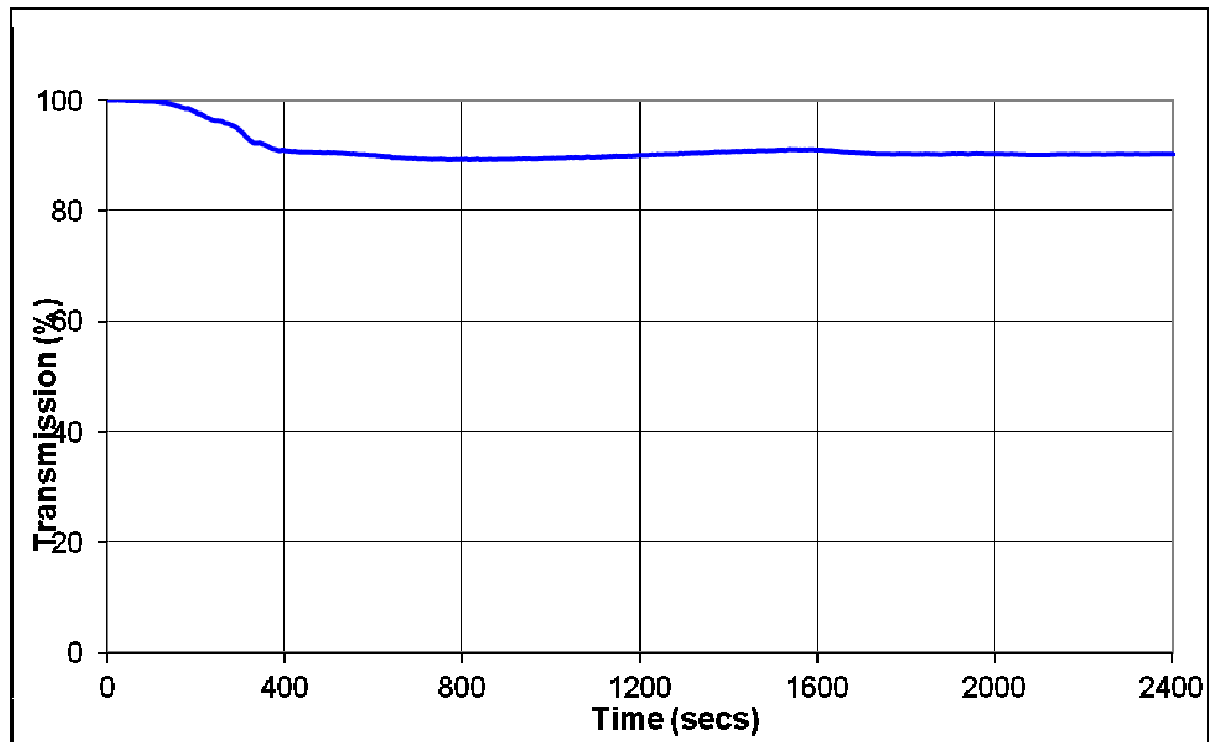
Standard and date

Standard IEC 61034-2 (2005)
 Test date 1 November 2012

Characteristic test data

Number of cables 5

item	unit	requirement	calculated/measured
- light transmittance	%	≥ 60	89,0



Result

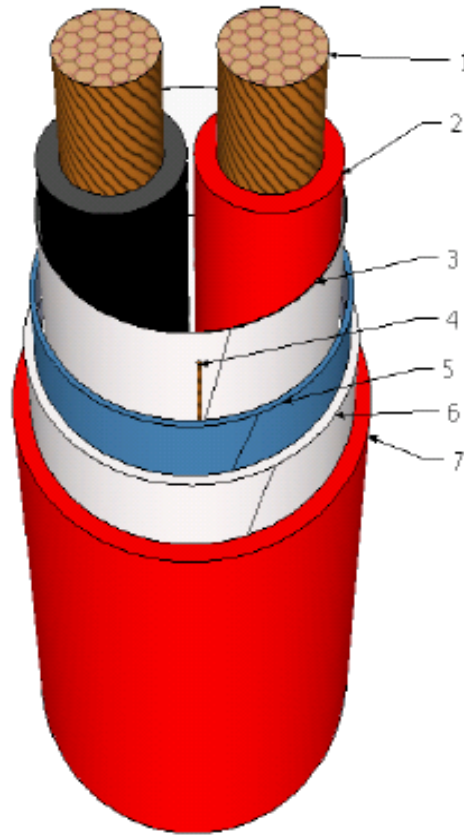
The object passed the test.

APPENDIX A MANUFACTURER'S DRAWING(S)/DATA SHEET

3 pages (including this page)

drawing no./ document no.	title	revision	date
Tech. Offer NO.:041071	CU/MICA/XLPE/OS/LSHF	1	09-10-2012
Technical offer	Flame Retardant Multi Core cable with Stranded Plain annealed Copper conductor, Mica + XLPE insulated LSHF sheathed – 500 V	0	9-10-2012

**ELSEWEDY
CABLES**



<i>Size</i> : 2 x 1.5 mm ²		<i>Type</i> : CU/MICA/XLPE/OS/LSHF	
<i>Voltage</i> : 500 V		<i>Standard</i> : BSEN 50288-7	
<i>Code</i> :		EL-SEWEDY CABLES	
<i>Sr.</i>	<i>Description</i>		
1.	Copper Conductor		
2.	Mica + XLPE Insulation		
3.	Polyester Tape		
4.	Drain Wire		
5.	AL/PET tape		
6.	Polyester Tape		
7.	LSHF (Flame Retardant)		
<i>Not to Scale</i>	<i>Drawn by</i> Mr. Hussieny Ahmed		<i>Approved by</i> Eng. Mustafa El-Saeed

ELSEWEDY CABLES
Special Cables Division
Technical Department



Technical Offer
10/9/2012
Rev. no. 0

Flame Retardant Multi Core cable with Stranded Plain annealed Copper conductor, Mica + XLPE insulated
LSHF sheathed - 500V
2X1.5mm²

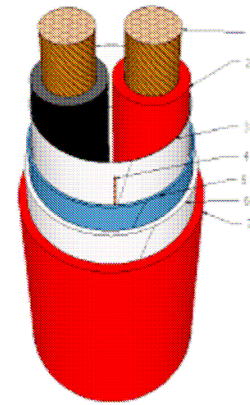
Constructional Data:

- Cable Designation standards:	Based on BS EN 50288-7	
- No. of cores	2	
- Cable Size:	1.5	mm ²
- Cores Identification:	Red-Black	
- Outer Sheath Color:	Red	
- Approx. Cable Weight:	84	kg/km
- Approx. Cable Outer diameter:	8.74 ± 1	mm
- Min. Bending Radius	70	mm

- Cable Marking (Ink Jet) :
=EL SEWEDY CABLES= 2X1.5 MM² CU/MICA/XLPE/OS/LSHF 500 V FIRE RESISTANT CABLE 2012

Electrical Data:

- Rated Voltage:	500 V	
- Conductor DC Resistance at 20 °C:	12.1	ohm/km
- Conductor AC resistance at maximum Operating Temperature and 50 HZ:	15.43	ohm/km
- Maximum conductor operating Temp.:	90	°C
- Maximum Conductor Temperature During S.C.:	250	°C
- Conductor S.C.C for 1 sec.:	0.21	kA



Cable Construction

- 1- Copper Conductor
- 2- Mica + XLPE Insulation
- 3- PET tape
- 4- Drain Wire
- 5- AL/PET Screen
- 6- PET tape
- 7- LSHF Sheath

Prepared By

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