

MCMO 450/750V

Based on SFS 4880



PVC insulated and PVC sheathed control cable with a protecting concentric copper conductor



CONSTRUCTION

Conductors:	annealed copper solid class 1(RE) acc. to EN 60228
Insulation:	black lead free PVC compound type TI1
Inner covering:	filling compound
Concentric conductor:	round copper wires and copper tape
Sheath:	black lead free PVC compound type TM1

CHARACTERISTIC

Colour of sheath:	black
Core identification acc. to EN 50334:	black with numbering
Maximum conductor operating temperature:	+70°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-15°C
Maximum short-circuit conductor temperature:	+ 160°C
Minimum bending radius:	12 x D, D – overall diameter
Test voltage:	≥ 2500V AC 50Hz, 5min
Max. permissible tensile stress with cable grip for Cu-conductor:	50 N/mm ² , calculated for the nominal sum of cross-sections of the inner conductors; the cross-section of the concentric conductors not be considered.

REACTION TO FIRE

▪ Flame retardant:	IEC 60332-1-2, SS 424 14 75 F3
▪ CPR – reaction to fire class (acc. to EN 50575):	Eca

APPLICATIONS

PVC insulated and sheathed control cables with a protecting concentric conductor for fixed installations in measuring, control and signalling circuits.

Standard length cable packing	500 or 1000m on drums. Other forms of packing and delivery are available on request
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MCMO-1,5-2,5 based on SFS4880 JM-08-07-2020
Replace MCMO-1,5-2,5 based on SFS4880 JM-01-03-2018

MCMO 450/750V

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Number and cross-sectional area of conductor	Nominal thickness of insulation	Nominal thickness of sheath	Approximate overall diameter	Approximate net weight of cables	Maximum conductor resistance at temperature 20°C
n x mm ²	mm	mm	mm	kg/km	Ω/km
7x1,5/1,5	0,7	1,5	12,1	246	12,1/12,1
10x1,5/1,5	0,7	1,5	14,7	340	12,1/12,1
12x1,5/1,5	0,7	1,5	15,1	379	12,1/12,1
12x1,5/2,5	0,7	1,5	15,1	384	12,1/7,41
19x1,5/1,5	0,7	1,6	17,4	536	12,1/12,1
19x1,5/4	0,7	1,6	17,8	556	12,1/4,61
27x1,5/1,5	0,7	1,7	20,4	728	12,1/12,1
7x2,5/2,5	0,8	1,5	14,0	357	7,41/7,41
10x2,5/2,5*	0,8	1,6	19,1	579	7,41/7,41
12x2,5/2,5	0,8	1,6	17,7	553	7,41/7,41
14x2,5/2,5*	0,8	1,7	20,6	724	7,41/7,41
19x2,5/2,5	0,8	1,7	20,5	793	7,41/7,41

*no CPR Eca

Current ratings*

Operating temperature at conductor 70°C; ambient air temperature 30°C, ground temperature 20°C

Current ratings for control cables – HD 627 S1

Number of loaded cores	3	3
	laying in ground	laying in air
Cross-section, mm ²	Current ratings in Ampere (A)	
1,5	27	19,5
2,5	36	26

Conversion factors for multicore cable (≥ 7 cores)

The conversion factors are to be used for laying the cables in ground or in air, to the values given in above tables

MCMO-1,5-2,5 based on SFS4880 JM-08-07-2020
Replace MCMO-1,5-2,5 based on SFS4880 JM-01-03-2018

TELE-FONIKA Kable S.A.
www.tfkable.com

MCMO 450/750V

Based on SFS 4880



Number of loaded cores	Laying in ground	Laying in air
7	0,60	0,65
10	0,50	0,55
14	0,45	0,50
19	0,40	0,45
24	0,35	0,40
40	0,30	0,35

The values are referred to the following basic conditions:

Laying in ground		Laying in air	
Ground temperature at installation depth:	20°C	Ambient temperature:	30°C
Load factor:	0,7	Load factor:	1,0
Soil-thermal resistivity of moist area:	1,0 k · m/W	Arrangement: free in air, protection against direct solar radiation, no external heat sources, unrestricted dissipation of heat.	
Soil-thermal resistivity of dry area:	2,5 k · m/W		
Laying depth:	0,7 m		

Correction factors for various ambient air temperatures

Ambient temperature, °C	10	15	20	25	30	35	40	45	50
Rating factor	1,22	1,17	1,12	1,06	1,00	0,94	0,87	0,79	0,71

* As defined in DIN VDE 0276-603, DIN VDE 0276-627, HD 603 S1, HD 627 S1.

Conversion factors for deviating ambient temperature defined in DIN VDE 0298 part 4.

All information contained in this document, including the tables and drawings, are provided for information only and not a commercial offer; nor may it constitute the basis for pursuing any claim against TELE-FONIKA KABLE S.A.

MCMO-1,5-2,5 based on SFS4880 JM-08-07-2020
Replace MCMO-1,5-2,5 based on SFS4880 JM-01-03-2018

CERTIFICATE

Management system as per
ISO 9001 : 2015

The Certification Body TÜV NORD CERT GmbH hereby confirms as a result of the audit, assessment and certification decision according to ISO/IEC 17021-1:2015, that the organization

TELE-FONIKA Kable S.A.
ul. Hipolita Cegielskiego 1, PL / 32-400 Myślenice
with the locations according to the annex

operates a management system in accordance with the requirements of ISO 9001 : 2015 and will be assessed for conformity within the 3 year term of validity of the certificate.

Scope

Design, manufacturing of cables. Design, manufacturing and sales of cable accessories.
High-voltage project management. Supervisions and repairs of HV cables.

Certificate Registration No. 44 100 17460018
Audit Report No. PL4380/2023

Valid from 2023-12-23
Valid until 2026-12-22
Initial certification 1991


Certification Body
at TÜV NORD CERT GmbH

Katowice, 2023-12-07

TÜV NORD CERT GmbH

Am TÜV 1

45307 Essen

www.tuev-nord-cert.com



ANNEX

to Certificate Registration No. 44 100 17460018
ISO 9001 : 2015

TELE-FONIKA Kable S.A. ul. Hipolita Cegielskiego 1, PL / 32-400 Myślenice

Certificate Registration No.	Location	Scope
44 100 17460018-001	TELE-FONIKA Kable S.A. Zakład Myślenice ul. Hipolita Cegielskiego 1, PL / 32-400 Myślenice	Design, manufacturing of cables: elecommunication cables, data cables, fibre-optic cables, bare and covered conductors, automotive cables, low voltage cables, installation cables, flexible cables, fire resistant and halogen-free cables.
44 100 17460018-003	TELE-FONIKA Kable S.A. Zakład Kraków ul. Wielicka 114, PL / 30-663 Kraków	Design, manufacturing of cables: power cables rated up to 150kV, signal and control cables, bare and covered conductors, bare and covered overhead line conductors, rubber cables, telecommunication cables, installation wire, multi-core flexible wires, mining cables, shipboard cables, fire resistant and halogen-free cables, welding cables, safety cables.
44 100 17460018-004	TELE-FONIKA Kable S.A. Zakład Bydgoszcz ul. Fordońska 152, PL / 85-752 Bydgoszcz	Design, manufacturing of medium- and high-voltage cables. Design, manufacturing and sales of cable accessories. High-voltage project management. Supervisions and repairs of HV cables.
44 100 17460018-005	TELE-FONIKA Kable Central Europe GmbH Kleinhülsen 29, D-40721 Hilden	Sales of cables and cable accessories.

End of the List



Certification Body
at TÜV NORD CERT GmbH

Katowice, 2023-12-07

TÜV NORD CERT GmbH

Am TÜV 1

45307 Essen

www.tuev-nord-cert.com



Deutsche
Akkreditierungsstelle
D-ZM-12007-01-00

CERTIFICATE

Management system as per
ISO 14001 : 2015

The Certification Body TÜV NORD CERT GmbH hereby confirms as a result of the audit, assessment and certification decision according to ISO/IEC 17021-1:2015, that the organization

TELE-FONIKA Kable S.A.
ul. Hipolita Cegielskiego 1, PL / 32-400 Myślenice
with the locations according to the annex

operates a management system in accordance with the requirements of ISO 14001 : 2015 and will be assessed for conformity within the 3 year term of validity of the certificate.

Scope

Design, manufacturing of cables. Design, manufacturing and sales of cable accessories.
High-voltage project management. Supervisions and repairs of HV cables.

Certificate Registration No. 44 104 17460018
Audit Report No. PL4380/2023

Valid from 2023-12-23
Valid until 2026-12-22
Initial certification 1998


Certification Body
at TÜV NORD CERT GmbH

Katowice, 2023-12-07

ANNEX

to Certificate Registration No. 44 104 17460018
ISO 14001 : 2015

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Certificate Registration No.	Location	Scope
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44 100 17460018-004	TELE-FONIKA Kable S.A. Zakład Bydgoszcz ul. Fordońska 152, PL / 85-752 Bydgoszcz	Design, manufacturing of medium- and high-voltage cables. Design, manufacturing and sales of cable accessories. High-voltage project management. Supervisions and repairs of HV cables.

End of the List


Certification Body
at TÜV NORD CERT GmbH

Katowice, 2023-12-07

TÜV NORD CERT GmbH

Am TÜV 1

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EU DECLARATION of CONFORMITY

No. TF3/UE/0230

1. Product model/product: PVC insulated and PVC sheathed control cable with a protecting concentric copper conductor

2. Manufacturer: **TELE-FONIKA Kable S.A.**

Address: **ul. Hipolita Cegielskiego 1, 32-400, Myślenice, Poland**

3. This declaration of conformity is issued under the sole responsibility of the manufacturer

4. Object of the declaration:

MCMO - 450-750V

Identified by a serial / batch number placed on the product / packaging

5. The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

2014/35/UE

Low Voltage Directive (LVD)

6. References to the relevant harmonised standards used or references to the other technical specifications in relation to which conformity is declared:

Document No. and date:	Title:
based on SFS 4880:2018	0,6/1 kV power cables. PVC-insulated PVC-sheathed cables. Construction and testing
-	-
-	-
-	-

7. Additional information:

-

-

Signed for and on behalf of: TELE-FONIKA Kable S.A.

Cracow, 2021-02-08

(place and date of issue)

Deputy Manager of Quality Control Department, Szymon Dukała
(function, name and surname)


(signature)

DECLARATION OF PERFORMANCE

Nr: DoP-16-0112-02

1	Unique identification code of the product-type	MCMO 450/750V
2	Range	7x1,5RE; 7x2,5RE; 12x1,5RE; 19x1,5RE; 12x2,5RE; 27x1,5RE; 19x2,5RE; 37x1,5RE; 27x2,5RE; 37x2,5RE
3	Intended use/es	Cable for general applications in construction works subject to reaction to fire requirements
4	Manufacturer	TELE-FONIKA Kable S.A. ul. Hipolita Cegielskiego 1 32-400 Myślenice, Polska
5	System/s of AVCP	3
6	Harmonised standard	EN 50575:2014 + EN 50575:2014/A1:2016
7	Notified body/ies	Instytut Techniki Budowlanej NB 1488
8	Declared performance/s	Reaction to fire: Eca Dangerous substances: NPD

The performance of the product identified above is in conformity with the set of declared performance/s.
This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

Rafał Bodzoń
(first and last name)



(signature)

Myślenice, 8.08.2023
(place, date of issue)

Cracow, date 13.01.2021
Department: TJ3/TJT

of type tests carried out in TELE-FONIKA Kable

cable type: MCMO 7x1.5/1.5 1kV

Tests were carried based on: SFS 4880:2008

Drum number: 160T00563N
Batch number 5008078587
Order number: 34*89263
Material ID: F-114084K
Numer zlecenia: TJX
Objective of tests: type test
Sample delivered: 23.12.2020

Marking

„TF KABLE 3 MCMO 7x1,5RE/1,5 450/750V 2020/357/06 CE Eca”

Reference number	Test	Unit	Observed	Prescribed
Dimensional tests				
SFS 4880 p.2 pp.1	Conductor	Conductor Cu class 2 ; RE		
SFS 4880 p.2 pp.2	Insulation	PVC type DIV 6		
SFS 4880 p.2 pp.2.2 HD 603-1 tab.5	Thickness insulation - min. insulation no.: 1 insulations no.: 2 / 3 / 4 / 5 6 / 7	mm	0.65 / 0.68 / 0.66 / 0.66 / 0.65 / 0.64 / 0.65	min: 0.62
	Thickness insulation - mean value insulation no.: 1 insulations no.: 2 / 3 / 4 / 5 6 / 7	mm	0.82 / 0.84 / 0.82 / 0.84 / 0.83 / 0.84 / 8.75	min: 0.8
SFS 4880 p.2 pp.2.3	Core identification	black with numerals: 1 - 7		
SFS 4880 p.2 pp.3 construction card	Assembly of cores	the center of the cable consists of 7 insulated conductors arranged in layers.		
HD 603-3F p.2 pp.3 construction card	Diameter of the assembly	mm	8.5	obl: 8.3
SFS 4880 p.2 pp.4	Inner covering	PVC		
SFS 4880 p.2 pp.4.2 construction card	Thickness of inner covering - min	mm	0.56	min: 0.3
	Thickness of inner covering - mean value	mm	0.67	min: 0.6
karta wyrobu	Diameter of inner covering	mm	9.6	obl: 9.5
SFS 4880 p.2 pp.5 construction card	Concentric conductor	wire of Cu and contact tape Cu		
SFS 4880 p.2 pp.5.4 construction card	Diameter of concentric conductor	mm	10.2	obl: 10.0
	Diameter of wires of concentric conductor	mm	0.4	0.4
	Numbers of wires of concentric conductor	szt.	6	6
SFS 4880 p.2 pp.5.4	Gap between adjacent wires of the concentric conductor	mm	2.8	mean: 4
SFS 4880 p.2 pp.5.5	Size of contact tape	mm	0.1 x 10	min: 0.1 x 3
SFS 4880 p.2 pp.6	Oversheath	PVC typ DMV 9		
SFS 4880 p.2 pp.6.2	Color	black		
SFS 4880 p.2 pp.6.3 construction card	Thickness of sheath - min	mm	1.43	min: 1.18
	Thickness of sheath - mean value	mm	1.55	min: 1.5
construction card	Outer diameter of cable	mm	13.65	obl: 13.0

Reference number	Test	Unit	Observed	Prescribed
SFS 4880 p.2 pp.7.2	Marking of cable	mm	490	max: 1000
Electrical tests				
SFS 4880 p.3.1 pp.2	Voltage test on completed cable a.c.	kV/min	3/5	3/5
SFS 4880 p.3.3 pp.1	Resistance of phase conductors at temp. 20°C insulation no.: 1 insulations no.: 2 / 3 / 4 / 5 6 / 7	Ω/km	11.9/ 11.5/ 11.3 11.8/ 11.8/ 11.7/ 11.7	max: 12.1
SFS 4880 p.3.1 pp.3	Voltage test (spark test) on the outer sheath on completed cable	badanie podczas procesu technologicznego		
SFS 4880 p.3.3 pp.1.2	Resistance of concentric conductor at temp. 20°C	Ω/km	10.5	max: 12.1
SFS 4880 p.3.3 pp.3 HD 603-1 tab.1	Resistance of phase conductors at temp. 20°C insulation no.: 1 insulations no.: 2 / 3 / 4 / 5 6 / 7	Ωxcm	22/ 27/ 27/ 20 x10 ¹⁰ 32/ 25/ 26/ 33 x10 ¹⁰	min: 10¹⁰
SFS 4880 p.3.6 pp.4	Hight-voltage test	kV/h	4 / 4	4 / 4
SFS 4880 p.3.4 pp.7 HD 603-1 tab.1	Water absorption – electric method:			
	The water temp. 70±3°C/24h	kV/min	a.c. 4 / 5	a.c.4 / 5
	The water temp. 70±3°C /240h	kV/h	d.c 1.0 / 240	d.c 1.0/240
Tests on samples of insulation - DIV 6:				
SFS 4880 p.3.4 pp.2-3 SFS 4880 p.3.4 pp.7-11 HD 603-1 tab.1	Tensile strength before ageing insulation no.: 1 insulations no.: 2 / 3 / 4 / 5 6 / 7	MPa	16.3 16.8/17.0/16.2/16.1/16.4/16.2	min: 12.5
	Tensile strength after ageing in air at temp.100±2°C/168 h insulation no.: 1 insulations no.: 2 / 3 / 4 / 5 6 / 7	MPa	15.8 15.9/16.3/15.6/15.5/15.7/15.9	min: 12.5
	Changes in tensile strength insulation no.: 1 insulations no.: 2 / 3 / 4 / 5 6 / 7	%	-3 -5 / -4 / -4 / -4 / -4 / -2	max: ±25
	Elongation at break before ageing insulation no.: 1 insulations no.: 2 / 3 / 4 / 5 6 / 7	%	250 255/256/248/266/256/246	min: 150
	Elongation at break after ageing in air at temp.100±2°C/168 h insulation no.: 1 insulations no.: 2 / 3 / 4 / 5 6 / 7	%	259 260/251/255/253/247/251	min: 150
	Changes in elongation at break insulation no.: 1 insulations no.: 2 / 3 / 4 / 5 6 / 7	%	4 2 / -2 / 3 / -4 / -3.5 / 2	max: ±25
	Lass of mass test at temp. 80°C/168h insulation no.: 1 insulations no.: 2 / 3 / 4 / 5 6 / 7	%	0.12 0.12/ 0.11/0.13/0.11/0.12/0.12	max: 2
	Heat shock test at temp.150±2°C/1h insulation no.: 1 insulations no.: 2 / 3 / 4 / 5 6 / 7	Positive		
	Pressure test at high temp. at 80±2C/6h insulation no.: 1 insulations no.: 2 / 3 / 4 / 5 6 / 7	%	20 21 / 20/18 / 29 / 19 / 22	max: 50
	Elongation test at low temp. -25±2°C insulation no.: 1 insulations no.: 2 / 3 / 4 / 5 6 / 7	%	120 120/ 122/ 103/ 100/ 80/ 87	min: 20
Tests on samples of sheath - DMV 9:				
SFS 4880 p.3.4 pp.4-5	Tensile strength before ageing	MPa	19.6	min: 12.5
SFS 4880 p.3.4pp.8-11	Tensile strength after ageing in air	MPa	18.3	min: 12.5

Reference number	Test	Unit	Observed	Prescribed
HD 603-1 tab.4	at temp. 100±2°C/168 h			
	Changes in tensile strength	%	-6	max: ±25
	Elongation at break before ageing	%	290	min: 150
	Elongation at break after ageing in air at temp. 100±2°C/168 h	%	280	min: 150
	Changes in elongation at break	%	-3	max: ±25
	Lass of mass test at temp. 80±2°C/168h	mg/cm ²	0.10	max: 2
	Heat shock test at temp. 150±2°C/1h	Positive		
	Pressure test at high temp. at 80±2°C/6h	%	20	max: 50
	Elongation test at temp. -25±2°C	%	93	min: 20
Tests on samples of completed cable				
SFS 4880 p.3.4 pp.6	Ageing test on piece of complete cable at temp. 80±2°C/168 h			
HD 603-1 tab.1 HD 603-1 tab.4A	Insulation			
	Tensile strength after ageing in air izolacja oznaczona nr: 1 izolacja oznaczona nr: 2 / 3 / 4 / 5 6 / 7	MPa	15.3 15.4/15.6/15.7/16.3/16.5/16.3	min: 12.5
	Changes in tensile strength izolacja oznaczona nr: 1 izolacja oznaczona nr: 2 / 3 / 4 / 5 6 / 7	%	-6 -8 / -8 / -3 / 1 / 1 / 1	max: ±25
	Elongation at break after ageing in air izolacja oznaczona nr: 1 izolacja oznaczona nr: 2 / 3 / 4 / 5 6 / 7	%	260 263/259/257/255/262/257	min: 150
	Changes in elongation at break izolacja oznaczona nr: 1 izolacja oznaczona nr: 2 / 3 / 4 / 5 6 / 7	%	4 3 / 1 / 4 / -4 / 2 / 5	max: ±25
	Sheath			
	Tensile strength after ageing in air	MPa	20.0	min: 12.5
	Changes in tensile strength	%	2	max: ±25
	Elongation at break after ageing in air	%	298	min: 150
	Changes in elongation at break	%	3	max: ±25
SFS 4880 p.3.4 pp.12 EN 60332-1-2	Fire test	Positive		
SFS 4880 p.3.4 pp.10.3 HD 603-1 tab. 4A	Impact test at temp. -20°C	Positive		
SFS 4880 p.3.4 pp.13 HD 605 p.2.4.1.3	Cable bending test temp. -25±2°C	Positive		

Final result : POSITIVE

Tests carried out by: TJT

Protocol checked by: Maria Walczak

MISTRZ KONTROLI JAKOŚCI

 Maria Walczak

0,09m ing: 360418

Cracow, 24.10.2020

Department: TJ3/TKE

Cable type: MCMO 7x1,5/1,5 RE w op.
Nominal voltage: 450/7 kV
Based on: SFS 4880:2018
Drum number: 07KB13849M
Length: 440 m

Routine & Sample test results

Test	Result	Unit
CONDUCTOR EXAMINATION	No breaks	Continuity inspection
CONDUCTOR RESISTANCE AT 20 °C	11,91	Ω/km
HIGHT-VOLTAGE TEST AC	No breakdown	2,5kV/5 min
SPARK TEST FOR INSULATIONS - AC FOR SHEATH - AC	No breakdown No breakdown	No breakdown
THICKNESS OF INSULATION (min.)	0,69	mm
THICKNESS OF SHEATH (min.)	1,34	mm
OUTER DIAMETER	13,5	mm.

The cable complies with the standard requirements to: SFS 4880:2018**Test(s) carried out by:****Report approved by:**

MISTRZ KONTROLI JAKOŚCI
Krzysztof Staroński

Quality Control Manager

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Designing: 360418

Cracow, 24.10.2020

Department: TJ3/TKE

Cable type: MCMO 7x1,5/1,5 RE w op.
Nominal voltage: 450/7 kV
Based on: SFS 4880:2018
Drum number: 07KB09658M
Length: 500 m

Routine & Sample test results

Test	Result	Unit
CONDUCTOR EXAMINATION	No breaks	Continuity inspection
CONDUCTOR RESISTANCE AT 20 °C	11,93	Ω/km
HIGHT-VOLTAGE TEST AC	No breakdown	2,5kV/5 min
SPARK TEST FOR INSULATIONS - AC FOR SHEATH - AC	No breakdown No breakdown	No breakdown
THICKNESS OF INSULATION (min.)	0,65	mm
THICKNESS OF SHEATH (min.)	1,33	mm
OUTER DIAMETER	13,6	mm.

The cable complies with the standard requirements to: SFS 4880:2018**Test(s) carried out by:****Report approved by:**

MISTRZ KONTROLI JAKOŚCI
Krzysztof Staronowski

Quality Control Manager

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0,64 ing: 360418

Cracow, 24.10.2020
Department: TJ3/TKE

Cable type: MCMO 7x1,5/1,5 RE w op.
Nominal voltage: 450/7 kV
Based on: SFS 4880:2018
Drum number: 07KB06101M
Length: 500 m

Routine & Sample test results

Test	Result	Unit
CONDUCTOR EXAMINATION	No breaks	Continuity inspection
CONDUCTOR RESISTANCE AT 20 C	11,91	Ω/km
HIGHT-VOLTAGE TEST AC	No breakdown	2,5kV/5 min
SPARK TEST FOR INSULATIONS - AC FOR SHEATH - AC	No breakdown No breakdown	No breakdown
THICKNESS OF INSULATION (min.)	0,64	mm
THICKNESS OF SHEATH (min.)	1,37	mm
OUTER DIAMETER	13,6	mm.

The cable complies with the standard requirements to: SFS 4880:2018**Test(s) carried out by:****Report approved by:**

MISTRZ KONTROLI JAKOŚCI
Krzysztof Staroński

Quality Control Manager

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0,00 ing: 360418

Cracow, 24.10.2020

Department: TJ3/TKE

Cable type: MCMO 7x1,5/1,5 RE w op.**Nominal voltage:** 450/7 kV**Based on:** SFS 4880:2018**Drum number:** 07KB06341M**Length:** 500 m**Routine & Sample test results**

Test	Result	Unit
CONDUCTOR EXAMINATION	No breaks	Continuity inspection
CONDUCTOR RESISTANCE AT 20 C	11,91	Ω/km
HIGHT-VOLTAGE TEST AC	No breakdown	2,5kV/5 min
SPARK TEST FOR INSULATIONS - AC FOR SHEATH - AC	No breakdown No breakdown	No breakdown
THICKNESS OF INSULATION (min.)	0,66	mm
THICKNESS OF SHEATH (min.)	1,25	mm
OUTER DIAMETER	13,7	mm.

The cable complies with the standard requirements to: SFS 4880:2018**Test(s) carried out by:****Report approved by:**
MISTRZ KONTROLI JAKOŚCI
Krzysztof Staroniski**Quality Control Manager**

Think of the environment! Do not print this document unless necessary.

0,67m ing: 360418

Cracow, 24.10.2020

Department: TJ3/TKE

Cable type: MCMO 7x1,5/1,5 RE w op.**Nominal voltage:** 450/7 kV**Based on:** SFS 4880:2018**Drum number:** 07KB12679M**Length:** 500 m**Routine & Sample test results**

Test	Result	Unit
CONDUCTOR EXAMINATION	No breaks	Continuity inspection
CONDUCTOR RESISTANCE AT 20 °C	11,92	Ω/km
HIGHT-VOLTAGE TEST AC	No breakdown	2,5kV/5 min
SPARK TEST FOR INSULATIONS - AC FOR SHEATH - AC	No breakdown No breakdown	No breakdown
THICKNESS OF INSULATION (min.)	0,67	mm
THICKNESS OF SHEATH (min.)	1,21	mm
OUTER DIAMETER	13,6	mm.

The cable complies with the standard requirements to: SFS 4880:2018**Test(s) carried out by:****Report approved by:**
MISTRZ KONTROLI JAKOŚCI
Krzysztof Staroński**Quality Control Manager**

Think of the environment! Do not print this document unless necessary.