REPORT No 11506

Date of issue: *December 5, 2025*

Status: FINAL REPORT

****

IEC 60227-5

POLYVINYL CHLORIDE INSULATED CABLES

PART 5: FLEXIBLE CABLES (CORDS)

Program: SQO-EM4 Round 11

****

Prepared by:	Reviewed by:	Approved by:
cn=VALENTYN E. KRAVCHENKO, o=PT SOUTH QUALITY SAS, ou=SOUTH QUALITY, email=tech@ptsouthquality.com, c=AR 2025.12.05 16:25:24 -03'00'	cn=ESTEBAN DI MARCO, o=PT SOUTH QUALITY SAS, ou=SOUTH QUALITY, email=edimarco@ptsouthquality.com, c=AR 2025.12.06 10:49:14 -03'00'	cn=Emiliano Medina, o=SOUTH QUALITY, ou=PT SOUTH QUALITY SAS, email=quality@ptsouthquality.com, c=ES 2025.12.08 15:52:00 -03'00'
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1. FOREWORD

This report summarizes the results of the **SQO-EM4 Round 11** proficiency testing program on the determination of physical properties of cables. This program is carried out under a simultaneous participation format, according to the A.3.1 classification of the ISO 17043 standard ("Model 2 - Figure A.1").

South Quality conducted the testing program in October/November 2025. The aim of the program was to assess the ability of laboratories to competently perform the nominated tests.

2. ORGANIZATION

Program Coordinator:	Eng. Esteban Di Marco
Assistant Technician:	Valentyn Kravchenko
Statistic:	Lic. Manuel Tozaki
Supervision:	Eng. Emiliano Medina

3. OBJECTIVE

The objective of this proficiency testing program is to determine the following properties of cable samples:

- Resistance of conductors (Test Ref. 1.1)
- Compliance with constructional provisions (Test Ref. 2.1)
- Pressure at high temperature (Test Ref. 6)
- Test of flame retardance (Test Ref. 10)

These properties were verified using the following standard:

Standard
IEC 60227-5: 2024

To verify this, batches of cables have been selected.

Participants in this program have not been informed in advance about the expected values, ranges, or behavior of the samples provided.

4. PARTICIPANTS

In the present round, 20 companies have participated with the following details:

CODE	Country	ISO 17025 accredited	Results delivered
01	China	Yes	Yes
02	Malaysia	Yes	No
03	France	Yes	Yes
04	Colombia	Yes	Yes
05	Spain	Yes	Yes
06	Australia	Yes	Yes
07	Italy	Yes	Yes
08	Brazil	No	Yes
09	Portugal	Yes	Yes
10	Argentina	No	No
11	Peru	Yes	Yes
12	England	Yes	Yes
13	Italy	Yes	Yes
14	Germany	Yes	Yes [(1)]
15	Brazil	Yes	Yes
16	Canada	Yes	Yes
17	Chile	No	Yes
18	Mexico	Yes	No
19	France	Yes	Yes
20	Türkiye	Yes	Yes

Notes:

[(1)] Partial results (Test Ref. No. 10 not performed)

5. HOMOGENEITY

Several batches were prepared by South Quality personnel in an identical way.

Subsequently, a homogeneity study was conducted with an ISO 17025 accredited laboratory.

The control process followed ISO 33405: 2024, clauses 7.4.1.1 / 7.4.1.2. Stratified random sampling was employed, and samples were chosen using random number generation software.

The results of these tests are presented below:

Size of each batch: **100 units** Tested samples from each batch: **20 units**

DETERMINATION	HOMOGENEITY OF RESULTS IN THE ANALYZED SAMPLES		
	BATCH: LEM2685	BATCH: LEM2686	BATCH: LEM2687
Resistance of conductors	YES	YES	NO

Size of each batch: **100 units** Tested samples from each batch: **20 units**

DETERMINATION	HOMOGENEITY OF RESULTS IN THE ANALYZED SAMPLES		
	BATCH: LEM2685	BATCH: LEM2686	BATCH: LEM2687
Compliance with constructional provisions	YES	YES	YES

Size of each batch: **50 units** Tested samples from each batch: **10 units**

DETERMINATION	HOMOGENEITY OF RESULTS IN THE ANALYZED SAMPLES		
	BATCH: LEM2685	BATCH: LEM2686	BATCH: LEM2687
Pressure at high temperature	YES	YES	YES

Size of each batch: **50 units** Tested samples from each batch: **10 units**

DETERMINATION	HOMOGENEITY OF RESULTS IN THE ANALYZED SAMPLES		
	BATCH: LEM2685	BATCH: LEM2686	BATCH: LEM2687
Test of flame retardance	YES	NO	YES

Samples for this program are taken from the selected batches identified as **LEM2685**.

Analysis of this testing data indicated that samples were sufficiently homogeneous for the program and, therefore, any participant results identified as outliers cannot be attributed to sample variability.

6. SAMPLE INFORMATION

The following samples were sent to be testing (Participant **Code 14**):

Batch:	LEM2685
Sample ref. ID:	1.1
Characteristics:	Cord 60227 IEC 53 - 3 x 1.5 mm2 - 250 cm - 1 unit

Batch:	LEM2685
Sample ref. ID:	2.1
Characteristics:	Cord 60227 IEC 53 - 3 x 1.5 mm2 - 5 cm - 3 units

Batch:	LEM2685
Sample ref. ID:	6
Characteristics:	Cord 60227 IEC 53 - 3 x 1.5 mm2 - 15 cm - 6 units

Batch:	LEM2685
Sample ref. ID:	10
Characteristics:	Cord 60227 IEC 53 - 3 x 1.5 mm2 - 75 cm - 1 unit

7. IMAGES

SAMPLES

8. ASSIGNED VALUES

The assigned values are obtained from the results reported by all participants (**Consensus values**).

9. STATISTICS

The results must be treated as qualitative as quantitative.

According B.3.1.3 of ISO 17043 the appropriate technique is to compare participant results with the assigned values

a) For qualitative results (Assigned values equal to 0), the comparison will be made directly against the assigned value, so any difference will be evaluated as **Unsatisfactory**.

b) For quantitative results the comparison will be made through ***z score*** (B3 - ISO 17043).

$$z = \frac{x - X}{\hat{\sigma}}$$

x is the participant's result

X is the assigned value

$\hat{\sigma}$ is the standard deviation

The performance evaluation of each sample is carried out with the following criteria:

$\|z\| \leq 2.0$	**indicates "satisfactory" performance and generates no signal;**
$2.0 < \|z\| < 3.0$	**indicates "questionable" performance and generates a warning signal;**
$\|z\| \geq 3.0$	**indicates "unsatisfactory" performance and generates an action signal;**

10. PARTICIPANT' RESULTS

LABORATORY CODE	CONDUCTOR RESISTANCE (ohm/km at 20 °C)		
	BLUE	BROWN	GREEN
01	18.88	27.33	18.12
03	19.07	27.41	18.03
04	19.17	27.33	19.22
05	19.10	27.30	18.80
06	18.95	27.35	18.41
07	18.87	27.23	18.16
08	18.95	27.09	18.68
09	18.84	27.25	19.31
11	18.84	27.32	19.58
12	18.98	27.34	18.98
13	19.09	27.03	18.17
14	18.99	27.23	18.79
15	18.99	27.41	18.67
16	18.90	27.43	18.45
17	19.22	27.15	20.01
19	19.05	27.00	18.36
20	18.83	27.22	19.35

ASSIGNED VALUES - CONDUCTOR RESISTANCE (ohm/km at 20 °C)						
BATCH	BLUE		BROWN		GREEN	
	AVG	SD	AVG	SD	AVG	SD
LEM2685	18.98	0.12	27.26	0.13	18.77	0.57

LABORATORY CODE	WIRE DIAMETER (mm)		
	BLUE	BROWN	GREEN
01	0.31	0.29	0.30
03	0.30	0.30	0.31
04	0.31	0.30	0.30
05	0.31	0.30	0.31
06	0.31	0.31	0.31
07	0.31	0.30	0.30
08	0.31	0.31	0.31
09	0.32	0.30	0.31
11	0.31	0.30	0.30
12	0.31	0.30	0.30
13	0.30	0.31	0.30
14	0.31	0.30	0.31
15	0.31	0.29	0.32
16	0.30	0.30	0.30
17	0.31	0.31	0.30
19	0.30	0.30	0.31
20	0.31	0.30	0.30

ASSIGNED VALUES - WIRE DIAMETER (mm)						
BATCH	BLUE		BROWN		GREEN	
	AVG	SD	AVG	SD	AVG	SD
LEM2685	0.31	0.005	0.30	0.006	0.31	0.006

LABORATORY CODE	PRESSURE AT HIGH TEMPERATURE (%)			
	BLUE	BROWN	GREEN	SHEATH
01	28	32	28	21
03	23	27	30	22
04	24	31	28	25
05	26	32	29	22
06	29	26	30	22
07	27	32	28	21
08	29	26	30	22
09	22	28	29	22
11	28	25	28	25
12	27	30	30	23
13	30	24	30	24
14	25	24	29	24
15	24	32	28	28
16	24	29	28	23
17	23	25	30	22
19	28	31	30	23
20	27	24	29	21

ASSIGNED VALUES - PRESSURE AT HIGH TEMPERATURE (%)								
BATCH	BLUE		BROWN		GREEN		SHEATH	
	AVG	SD	AVG	SD	AVG	SD	AVG	SD
LEM2685	26	2.4	28	3.2	29	0.9	23	1.3

LABORATORY CODE	TEST OF FLAME RETARDANCE	
	UPPER DISTANCE (mm)	LOWER DISTANCE (mm)
01	0	492
03	0	473
04	25	511
05	0	495
06	0	495
07	0	485
08	0	481
09	0	480
11	0	471
12	0	489
13	0	489
14	-	-
15	0	498
16	0	476
17	0	497
19	0	483
20	0	480

ASSIGNED VALUES - TEST OF FLAME RETARDANCE (mm)				
BATCH	UPPER DISTANCE		LOWER DISTANCE	
	AVG	SD	AVG	SD
LEM2685	0	-	487	10.6

11. EVALUATION OF PERFORMANCE

LABORATORY CODE	CONDUCTOR RESISTANCE (LEM2685) |z score|		
	BLUE	BROWN	GREEN
01	0.8	0.5	1.1
03	0.8	1.2	1.3
04	1.6	0.5	0.8
05	1.0	0.3	0.1
06	0.3	0.7	0.6
07	0.9	0.2	1.1
08	0.3	1.3	0.2
09	1.2	0.1	1.0
11	1.2	0.5	1.4
12	0.0	0.6	0.4
13	0.9	1.8	1.1
14	0.1	0.2	0.0
15	0.1	1.2	0.2
16	0.7	1.3	0.6
17	2.0	0.9	2.2
19	0.6	2.0	0.7
20	1.3	0.3	1.0

LABORATORY CODE	WIRE DIAMETER (LEM2685) |z score|		
	BLUE	BROWN	GREEN
01	0.0	1.7	1.7
03	2.0	0.0	0.0
04	0.0	0.0	1.7
05	0.0	0.0	0.0
06	0.0	1.7	0.0
07	0.0	0.0	1.7
08	0.0	1.7	0.0
09	2.0	0.0	0.0
11	0.0	0.0	1.7
12	0.0	0.0	1.7
13	2.0	1.7	1.7
14	0.0	0.0	0.0
15	0.0	1.7	1.7
16	2.0	0.0	1.7
17	0.0	1.7	1.7
19	2.0	0.0	0.0
20	0.0	0.0	1.7

LABORATORY CODE	PRESSURE AT HIGH TEMPERATURE (LEM2685) |z score|			
	BLUE	BROWN	GREEN	SHEATH
01	0.8	1.3	1.1	1.5
03	1.3	0.3	1.1	0.8
04	0.8	0.9	1.1	1.5
05	0.0	1.3	0.0	0.8
06	1.3	0.6	1.1	0.8
07	0.4	1.3	1.1	1.5
08	1.3	0.6	1.1	0.8
09	1.7	0.0	0.0	0.8
11	0.8	0.9	1.1	1.5
12	0.4	0.6	1.1	0.0
13	1.7	1.3	1.1	0.8
14	0.4	1.3	0.0	0.8
15	0.8	1.3	1.1	**3.9** ¤
16	0.8	0.3	1.1	0.0
17	1.3	0.9	1.1	0.8
19	0.8	0.9	1.1	0.0
20	0.4	1.3	0.0	1.5

LABORATORY CODE	TEST OF FLAME RETARDANCE (LEM3225)	
	QUALITATIVE	|z score|
	UPPER DISTANCE	LOWER DISTANCE
01	SATISFACTORY	0.5
03	SATISFACTORY	1.3
04	UNSATISFACTORY ¤	2.3
05	SATISFACTORY	0.7
06	SATISFACTORY	0.7
07	SATISFACTORY	0.2
08	SATISFACTORY	0.6
09	SATISFACTORY	0.7
11	SATISFACTORY	1.5
12	SATISFACTORY	0.2
13	SATISFACTORY	0.2
14	-	-
15	SATISFACTORY	1.0
16	SATISFACTORY	1.1
17	SATISFACTORY	0.9
19	SATISFACTORY	0.4
20	SATISFACTORY	0.7

Laboratory **Code 01**: The laboratory has obtained **SATISFACTORY** results in the determination of all parameters.

Laboratory **Code 02**: The laboratory has not sent the results before the deadline.

Laboratory **Code 03**: The laboratory has obtained **SATISFACTORY** results in the determination of all parameters.

Laboratory **Code 04**: The laboratory has obtained an **UNSATISFACTORY** result in the qualitative assessment of the test of flame retardance. The laboratory has obtained a **QUESTIONABLE** result in the *z score* assessment of the test of flame retardance. Also the laboratory has obtained **SATISFACTORY** results in the remaining tests.

Laboratory **Code 05**: The laboratory has obtained **SATISFACTORY** results in the determination of all parameters.

Laboratory **Code 06**: The laboratory has obtained **SATISFACTORY** results in the determination of all parameters.

Laboratory **Code 07**: The laboratory has obtained **SATISFACTORY** results in the determination of all parameters.

Laboratory **Code 08**: The laboratory has obtained **SATISFACTORY** results in the determination of all parameters.

Laboratory **Code 09**: The laboratory has obtained **SATISFACTORY** results in the determination of all parameters.

Laboratory **Code 10**: The laboratory has not sent the results before the deadline.

Laboratory **Code 11**: The laboratory has obtained **SATISFACTORY** results in the determination of all parameters.

Laboratory **Code 12**: The laboratory has obtained **SATISFACTORY** results in the determination of all parameters.

Laboratory **Code 13**: The laboratory has obtained **SATISFACTORY** results in the determination of all parameters.

Laboratory **Code 14**: The laboratory has obtained **SATISFACTORY** results in all verified parameters.

Laboratory **Code 15**: The laboratory has obtained an **UNSATISFACTORY** result in the pressure at high temperature test (SHEATH). Also the laboratory has obtained **SATISFACTORY** results in the remaining tests.

Laboratory **Code 16**: The laboratory has obtained **SATISFACTORY** results in the determination of all parameters.

Laboratory **Code 17**: The laboratory has obtained a **QUESTIONABLE** result in the conductor resistance test (GREEN). Also the laboratory has obtained **SATISFACTORY** results in the remaining tests.

Laboratory **Code 18**: The laboratory has not sent the results before the deadline.

Laboratory **Code 19**: The laboratory has obtained **SATISFACTORY** results in the determination of all parameters.

Laboratory **Code 20**: The laboratory has obtained **SATISFACTORY** results in the determination of all parameters.

12. CONCLUSIONS

The overall performance in this **SQO-EM4 Round 11** program by the participating laboratories, based on the expected results, is as follows:

- Laboratories Codes **01, 03, 05, 06, 07, 08, 09, 11, 12, 13, 14, 16, 19,** and **20** have obtained a **SUFFICIENT** performance according to the expected results and should not take action;

- Laboratory Code **17** has obtained an **ALMOST SUFFICIENT** performance according to the expected results and must evaluate if it is necessary to take action in the tests where it has obtained a different result than expected.

- Laboratories Codes **04**, and **15** have obtained an **INSUFFICIENT** performance in accordance with the expected results and must take action in the tests where they have obtained a different result than expected (See **Appendix B**).

The criteria used for evaluating the overall performance are as follows:

- **SUFFICIENT** performance: No unsatisfactory/questionable results were obtained.

- **ALMOST SUFFICIENT** performance: No unsatisfactory results were obtained, but one questionable result was found.

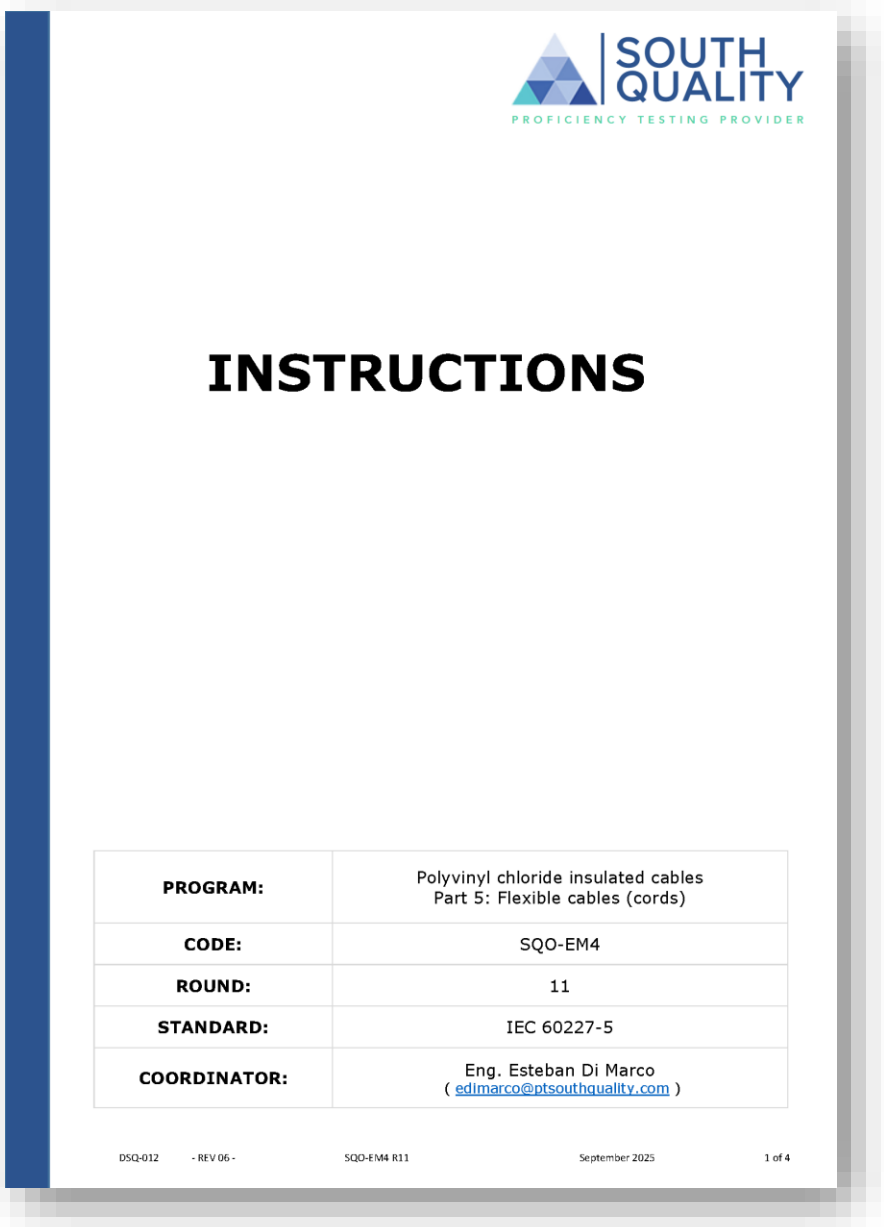
- **INSUFFICIENT** performance: An unsatisfactory result or two questionable results were obtained.

APPENDIX A

A1 - PARTICIPANT DATA

Company:	**U.I. Lapp GmbH**
Laboratory:	Laboratory Germany (LG)
Country:	Germany
Client ID:	E480
Contact person:	Laura Marie Erdmann (Quality Management Representative)
	laura.marie.erdmann@lapp.com

A2 - INSTRUCTIONS



INSTRUCTIONS

PROGRAM:	Polyvinyl chloride insulated cables Part 5: Flexible cables (cords)
CODE:	SQO-EM4
ROUND:	11
STANDARD:	IEC 60227-5
COORDINATOR:	Eng. Esteban Di Marco (edimarco@ptsouthquality.com)

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1 - General

This document serves as a guide for managing the results of the **SQO-EM4 (Round 11)** program.

2 - Standard

IEC 60227-5: 2024

3 - Participant

U.I. Lapp GmbH	**CODE 14**

4 - Tests involved

Ref. No	TEST
1.1	Resistance of conductors
2.1	Compliance with constructional provisions
6	Pressure at high temperature
10	Test of flame retardance

5 - Samples

CODE	SAMPLE	QUANTITY	TEST
LEM2685-14	Cord 60227 IEC 53 - 3 x 1.5 mm^2 - 250 cm	1	1.1
	Cord 60227 IEC 53 - 3 x 1.5 mm^2 - 5 cm	3	2.1
	Cord 60227 IEC 53 - 3 x 1.5 mm^2 - 15 cm	6	6
	Cord 60227 IEC 53 - 3 x 1.5 mm^2 - 75 cm	1	10

6 - **Notes**

a) The deadline for the delivery of results is **November 21, 2025**.
b) The participant must submit the results using the usual report employed by their laboratory.
c) The samples must be kept until the end of the program, which closes with the submission of the final report.
d) Samples should be treated as a routine laboratory sample. All testing, recording and reporting is to be performed in accordance with IEC 60227-5.
e) To review the results, the submission of images of the tests is appreciated. These images can be attached at the end of this document or sent via email.

PHOTOGRAPHS

A3 - PARTICIPANT RESULTS

Document-ID: COR-TP-INTERN-800	Test report	LAPP
LG	Report no.: CA-26-032_LGC	date: 29.10.2025

Test report

CA-26-032_LGC

Proficiency tests SQO-EM4 Round 11

Laboratory	U.I. Lapp GmbH - Laboratory Germany
Adress of Laboratory	Schulze-Delitzsch-Str. 25 70565 Stuttgart Germany
Client	PT SOUTH QUALITY SAS
Adress of Client	Pareja 3981 - Villa Devoto (C1419GVG) Ciudad Autónoma de Buenos Aires - Argentina
Processing numbers	
Internal job number	---
Customer number	SQO-EM4
Sample	Polyvinyl chloride insulated flexible cables (**LEM2685-14)**
Article number	---
Dimension	3 x 1,5 mm² (60227 IEC 53)
Supplier	---

Created by: 14.11.2025

X M. Muecke

Teamleader / Senior Laboratory Technician
Signiert von: Marcel Muecke

Reviewed by: 14.11.2025

X Erdmann

Laboratory
Quality Management Representative
Signiert von: Laura Marie Erdmann

Approved by: 14.11.2025

X Erdmann

Laboratory
Quality Management Representative
Signiert von: Laura Marie Erdmann

Disclaimer:
This test report may only be copied or published in its original form.
The test results relate exclusively to the commissioned test specimen(s)
All accredited tests are marked with #.
Throughout this report a comma is used as the decimal separator.

Template created by
Vivien Scherer
Template created at
17.10.2025

Released by
Laura Marie Erdmann
Released at
28.10.2025

Document version
2.0
Valid to
28.10.2030

1. Summary

The following tests were carried out in the examination period 29.10.2025 – 10.11.2025, on the samples provided by the client.

The following changes were made in consultation with the client:

Adjustment	Reason for the adjustment
Ref. No 10: test of flame retardance not carried out	test not possible

Testing Summary:
☐ All tests passed
☐ No abnormalities

☒ Following tests failed*
☒ Following tests showed abnormalities**

Chapter	Test	Comment
5.1	*1.1 Resistance of conductors	Do not reach target value
5.1	*1.1 Resistance of conductors	Cross-section is too small
5.1	**1.1 Resistance of conductors	numbers of single wires are different
5.2	**2.1 Compliance with constructional provisions	different dimensions

Details can be found in chapter 5. Results.

2. Purpose of the test

Purpose:

Determination of physical properties

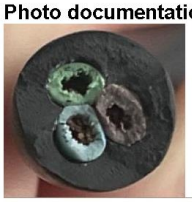
Containing following tests:

Chapter	Test	Standard / Datasheet	Version	Processor
5.1	1.1 Resistance of conductors	IEC 60227-5 DIN EN IEC 60228	2024-02 2024-12	ENYE1
5.2	2.1 Compliance with constructional provisions Dimensions of: green core blue core brown core sheath	IEC 60227-5	2024-02	 ENYE1 VISC4 GENI1 MAFI3
5.3	6 Pressure at high temperature green core blue core brown core sheath	IEC 60227-5	2024-02	 ENYE1 VISC4 GENI1 MAFI3

3. Sample description

Material	Polyvinyl chloride
Test specimen	flexible round cables: Ref. No 1.1: new sample for resistance of conductors: Ref. No 2.1: sample for compliance with constructional provisions Ref. No 6: sample for pressure at high temperature Ref. No 10: test of flame retardance
Receipt of test specimen	sample for resistance of conductors: 28.10.2025 sample for compliance with constructional provisions: 21.10.2025 sample for pressure at high temperature: 21.10.2025 sample for test of flame retardance: 21.10.2025
Condition of test specimen	as delivered

Photo documentation:



sample for resistance of conductors:

sample for compliance with constructional provisions:

sample for pressure at high temperature:

Sample for test of flame retardance:

4. Test Conditions

4.1 Environment

The tests were carried out from 29.10.2025 29.10.2025 – 10.11.2025 in the facilities of the Laboratory Germany at:

☒ Oskar-Lapp-Str. 2, in 70565 Stuttgart, Germany
☐ Breitwiesenstr. 10, in 70565 Stuttgart, Germany

Information about the exact location and the room conditions, where our tests are carried out can be obtained on request to the email address test.request.laboratory.de.uil@lapp.com.

4.2 Equipment and measurement uncertainties

Our equipment used, their measurement tolerances and the measurement uncertainties of our DAkkS-accredited procedures can be obtained on request to the email address test.request.laboratory.de.uil@lapp.com. Further information can be obtained from our Global: Laboratory Germany LappNet-Community.

4.3 Conformity

The conformity statement is made in accordance with the decision rule “Confidence level 50” (reduced confident level) with a conformity greater than 50%. If the measured value is within or on the limit, the results are evaluated as acceptable.
More information about the conformity and discission rule can be obtained on request to the email address test.request.laboratory.de.uil@lapp.com.

5. Results

5.1 1.1 Resistance of conductors

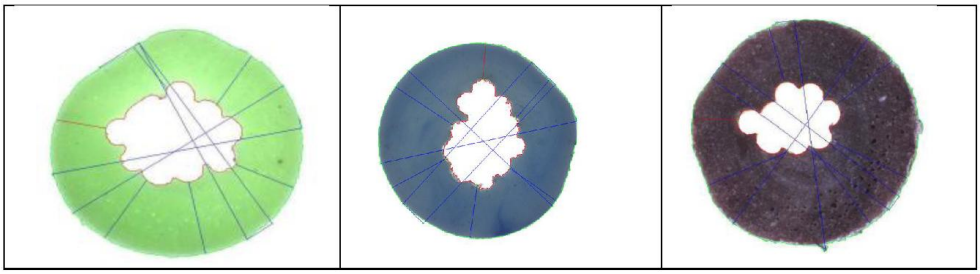
conductor resistance

	target value	actual value		
core:	---	green	blue	brown
material:	---	bare copper		
AVG single wire diameter [mm]:	max. 0,26	0,31	0,31	0,30
number of single wires:	---	13	13	9
cross section [mm²]:	1,5	1,0	1,0	0,6
conductor resistance [Ohm/km @ 20 °C]:	max. 13,3	18,79	18,99	27,23
result:	---	failed		

5.2 2.1 Compliance with constructional provisions

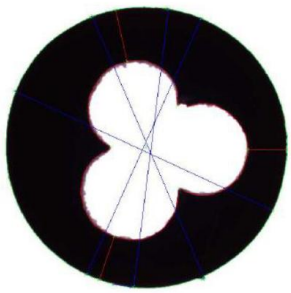
insulation

	target value	actual value		
material:	PVC	PVC		
core identification:	---	green, blue, brown		
core:	---	green	blue	brown
outer diameter AVG [mm]:	---	2,77	2,72	2,88
outer diameter MAX [mm]:	---	2,79	2,74	2,91
outer diameter MIN [mm]:	---	2,75	2,70	2,83
wall thickness AVG [mm]:	0,7	0,70	0,73	0,94
wall thickness MAX [mm]:	---	0,88	1,09	0,99
wall thickness MIN [mm]:	---	0,49	0,46	0,54



sheath

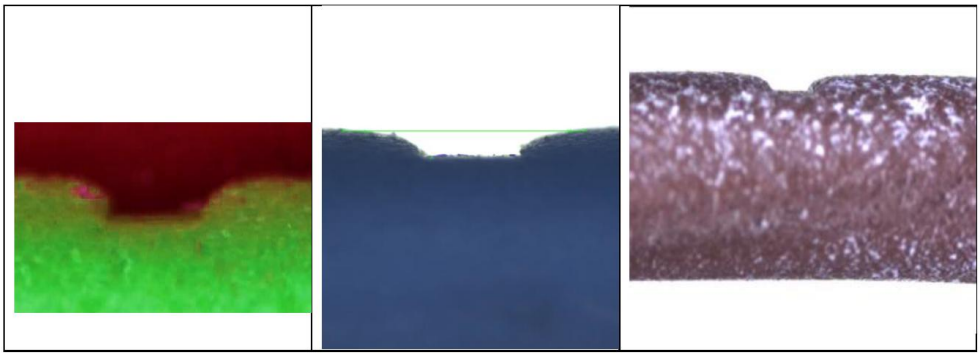
	target value	actual value
outer diameter AVG [mm]:	7,4 – 9,4	8,75
wall thickness AVG [mm]:	0,9	1,44
wall thickness MAX [mm]:	---	1,77
wall thickness MIN [mm]:	---	1,19
ovality AVG [%]:	---	2,13
ovality MAX [%]:	max. 15	2
ovality MIN [%]:	---	1,43



5.3 6 Pressure at high temperature

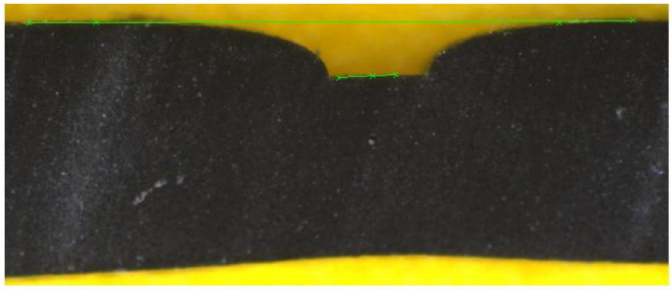
heat pressure test core

	target value			actual value		
temperature [°C]:	70 ± 2			70		
duration [h]:	4			4		
K:	0,6			0,6		
core:	green	blue	brown	green	blue	brown
outer diameter D [mm]:	---			2,77	2,72	2,88
weight [g]:	113	113	130	113	113	130
wall thickness AVG [mm]:	---			0,70	0,73	0,94
indentation depth median value [mm]:	---			0,20	0,18	0,23
indentation [%]:	max. 50			29	25	24
result:	---			passed		



heat pressure test sheath

	target value	actual value
temperature [°C]:	70 ± 2	70
duration [h]:	4	4
K:	0,6	0,6
outer diameter D [mm]:	---	8,75
weight [g]:	294	294
wall thickness AVG [mm]:	---	1,44
indentation depth median value [mm]:	---	0,35
indentation [%]:	max. 50	24
result:	---	passed



6. Disclaimer

The executing processors are confirming that all test tools used for the testing were checked for their relevant properties by using qualified measuring devices and assures that our personnel in the accredited laboratory are fully qualified and certified to conduct and evaluate the tests.

7. Attachment

- end of report -

APPENDIX B

VOID

----- END OF REPORT -----