SOUTH QUALITY

PROFICIENCY TESTING PROVIDER

REPORT No 11659

Date of issue: *March 30, 2026*

Status: FINAL REPORT

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IEC 61034-2

MEASUREMENT OF SMOKE DENSITY OF CABLES BURNING UNDER DEFINED CONDITIONS

Program: SQ-2543

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1. FOREWORD

This report summarizes the results of the **SQ-2543** proficiency testing program on the measurement of the density of smoke emitted by burning cables. This program is conducted in a bilateral format, following the A.3.3 classification of the ISO 17043 standard ("Split-sample testing schemes").

South Quality conducted the testing program in December 2025 with the aim of assessing the laboratory's ability to competently perform the designated tests.

2. ORGANIZATION

Program Coordinator:	Eng. Erika Brest
Assistant Technician:	Mateo Giovanni
Statistic:	Lic. Manuel Tozaki
Supervision:	Eng. Emiliano Medina

3. OBJECTIVE

The objective of this proficiency testing program is to determine the light transmittance, using the following standard:

Standard
IEC 61034-2: 2005 + AMD1: 2013 + AMD2: 2019

To verify this, batches of cables have been selected.

Participant in this program have not been previously informed about the expected values or value ranges of the samples they receive.

4. PARTICIPANT

Company:	**Lynxeo Deutschland GmbH**
Laboratory:	**NQT/fire test lab**
Country:	Germany
Client ID:	E489
Contact person:	Ingeborg Dümmler Leitende Prüftechnikerin chemische Analytik inge.duemmler@lynxeogroup.com

5. HOMOGENEITY

Several batches were prepared identically by the staff at South Quality.

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 applied, and samples were selected using random number generation software.

The results of this test are presented below:

Size of each batch: **40 units** Tested samples from each batch: **8 units**

DETERMINATION	HOMOGENEITY OF RESULTS IN THE ANALYZED SAMPLES		
	BATCH: LEM3060	BATCH: LEM3061	BATCH: LEM3062
Light transmittance	YES	YES	YES

Size of each batch: **40 units** Tested samples from each batch: **8 units**

DETERMINATION	HOMOGENEITY OF RESULTS IN THE ANALYZED SAMPLES		
	BATCH: LEM3171	BATCH: LEM3172	BATCH: LEM3173
Light transmittance	NO	YES	YES

Samples for this program are taken from the selected batches identified as **LEM3061** and **LEM3173**.

For the indicated batches, the values determined in the homogeneity study are utilized as the assigned values.

The analysis of the test data indicated that the selected samples exhibited sufficient homogeneity for the program. Therefore, the results of participants identified as outliers cannot be attributed to sample variability.

6. SAMPLE INFORMATION

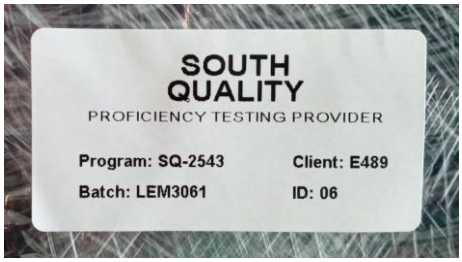
The following samples were sent for testing:

Batch:	LEM3061
Sample ID:	06
Characteristics:	Red cable - 1 x 1.5 mm^2 - Cu/LSOH - 50 m

Batch:	LEM3173
Sample ID:	11
Characteristics:	Ligth blue cable - 1 x 1 mm^2 - Cu/PVC - 50 m

7. IMAGES

SAMPLES



8. ASSIGNED VALUES

BATCH	MINIMUM LIGHT TRANSMITTANCE	
	(%)	SD
LEM3061	93.26	0.51
LEM3173	54.32	0.99

9. PARTICIPANT RESULTS (SEE APPENDIX)

CODE	MINIMUM LIGHT TRANSMITTANCE (%)
LEM3061-06	94.10
LEM3173-11	55.32

10. STATISTICS

The results must be treated as quantitative.

The comparison is made according B.3.1.3 of ISO 17043 and the appropriate technique is to compare participant results with the assigned values. The results can be compare using percent difference ***z score.***

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

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;

11. EVALUATION OF PERFORMANCE

BATCH	MINIMUM LIGHT TRANSMITTANCE (%)		| z score |	PERFORMANCE RESULT
	PARTICIPANT RESULT	ASSIGNED VALUE		
LEM3061	94.10	93.26	**1.65**	**SATISFACTORY**
LEM3173	55.32	54.32	**1.01**	**SATISFACTORY**

12. CONCLUSIONS

The overall performance on this **SQ-2543** program from the participant laboratory **Lynxeo Deutschland GmbH - NQT/fire test lab**, is **SUFFICIENT** based on expected results.

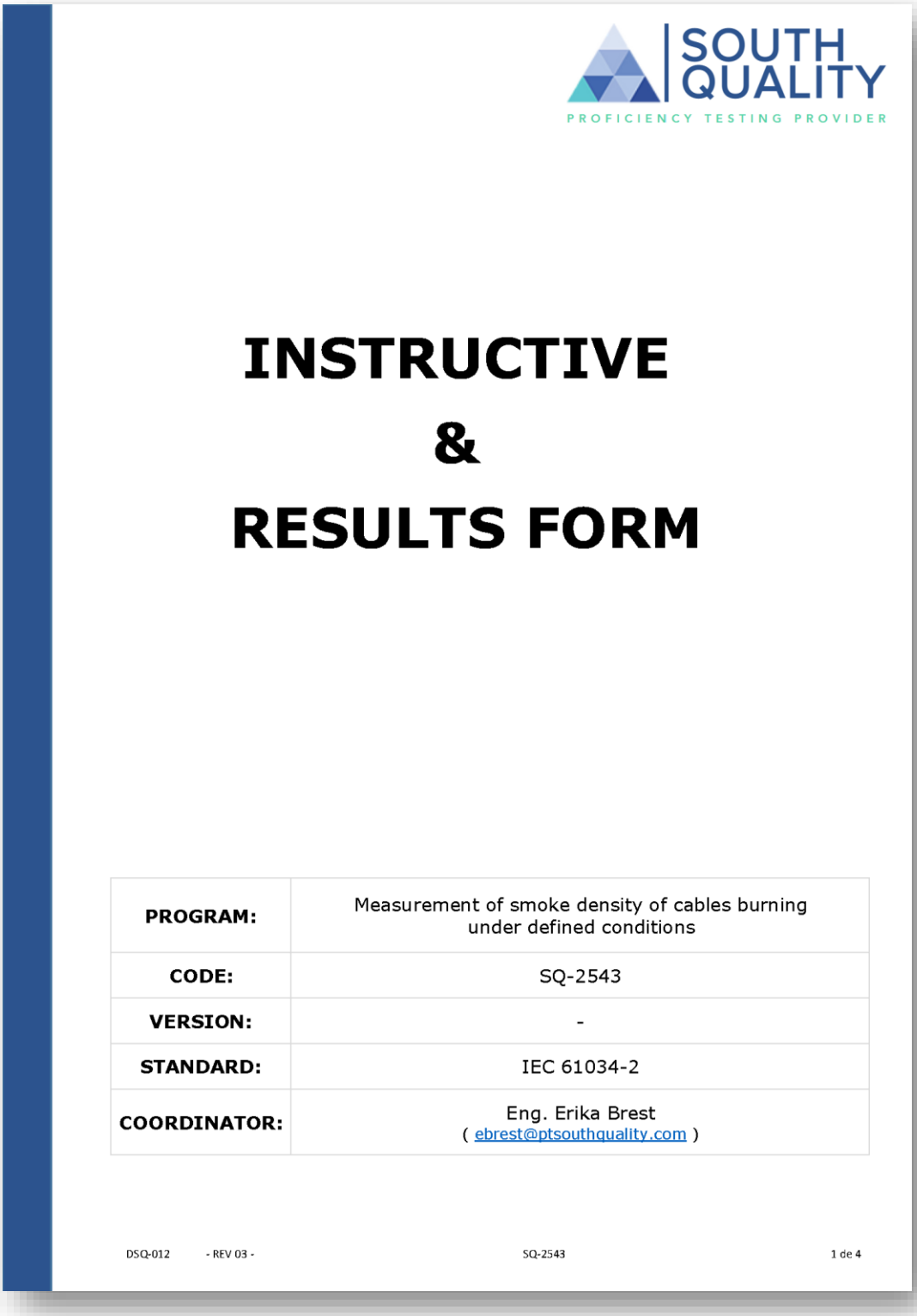
The criteria used for evaluating the overall performance are as follows:

- **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

PARTICIPANT RESULTS

(Results form)



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INSTRUCTIVE
&
RESULTS FORM

PROGRAM:	Measurement of smoke density of cables burning under defined conditions
CODE:	SQ-2543
VERSION:	-
STANDARD:	IEC 61034-2
COORDINATOR:	Eng. Erika Brest (ebrest@ptsouthquality.com)

DSQ-012 - REV 03 - SQ-2543 1 de 4

1 - General

This document is intended to be filled with the results of the **SQ-2543** program.

Results must be typed, not handwritten.

2 - Standard

IEC 61034-2: 2019 (Ed. 3.2)

3 - Tests involved

TEST
Measurement of the density of smoke emitted by burning cables

4 - Samples

CODE	SAMPLE	QUANTITY
LEM3061-06	Red cable - 1 x 1.5 mm^2	50 m
LEM3173-11	Light blue cable - 1 x 1 mm^2	50 m

5 - Notes

a) Being a bilateral program there is no deadline to accomplish sending results.
b) Tables in this document can be modified at will for the addition of data or observations.
c) To review the results, sending images of the tests will be appreciated. Images can be attached to the end of this document or can be sent by email.
d) Once this document is completed, it is requested to transform it into a pdf file and send it to the program coordinator.

6 - **Test results**

Method:	According to standard

Test date:	04.12.2025 04.12.2025

CONDITIONING	
Temperature (°C):	24
Relative humidity (%):	31
Duration (h):	0,67

CODE	Cable diameter (mm)	Number of specimens	Minimum light transmittance (%)
LEM3061-06	2,86	35 (7x5)	94,10
LEM3173-11	2,62	35 (7x5)	55,32

OBSERVATIONS
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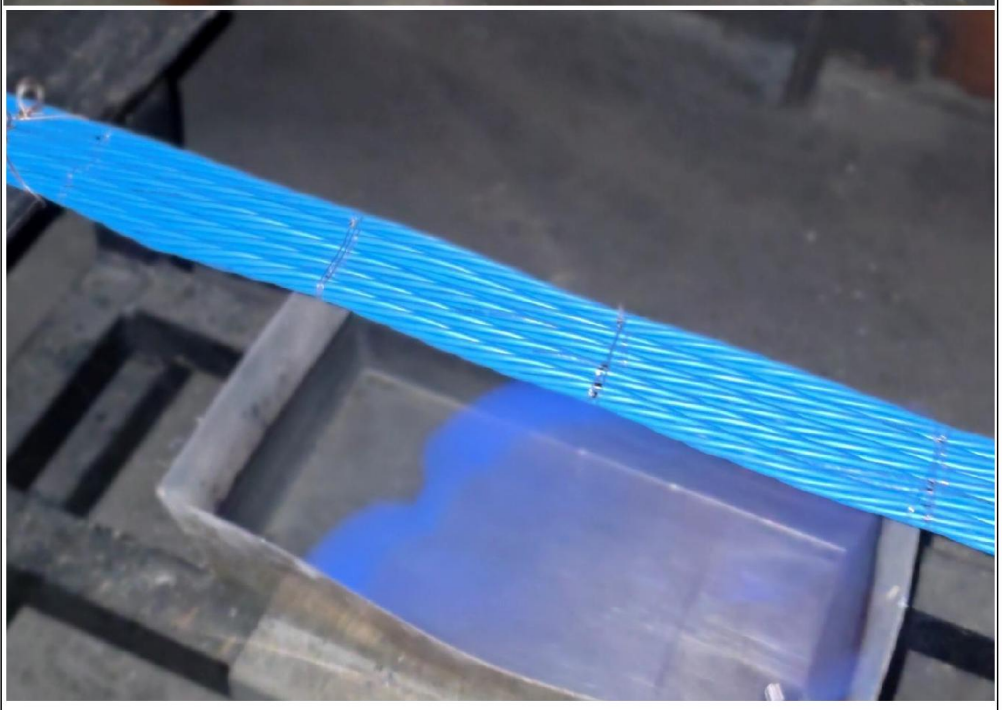
PHOTOGRAPHS



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