

REPORT No 12047

Date of issue: August 27, 2026

Status: FINAL REPORT

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 “split-sample” design described in clause A.4.2 of ISO/IEC 17043: 2023 (Alternative interlaboratory comparisons).

South Quality conducted the testing program in May/June 2026 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
Statistics: Lic. Manuel Tozaki
Supervision: Eng. Emiliano Medina

3. OBJECTIVE

The objective of this proficiency testing program is to determine the light transmittance in accordance with the following standard:

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

To verify this, batches of cables were selected.

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

4. PARTICIPANT

Company: **METCAB UYGUNLUK DEGERLENDIRME LIMITED SIRKETI**
Laboratory: **METCAB TEST LABORATORY**
Country: Türkiye
Client ID: S362
Contact person: Ersin Gök
Technical Manager
egok@metcab.org

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: LEM3305	BATCH: LEM3306	BATCH: LEM3307
Light transmittance	YES	NO	YES

Size of each batch: **40 units**

Tested samples from each batch: **8 units**

DETERMINATION	HOMOGENEITY OF RESULTS IN THE ANALYZED SAMPLES		
	BATCH: LEM3624	BATCH: LEM3625	BATCH: LEM3626
Light transmittance	YES	YES	NO

Samples for this program are taken from the selected batches identified as **LEM3305** and **LEM3625**.

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.

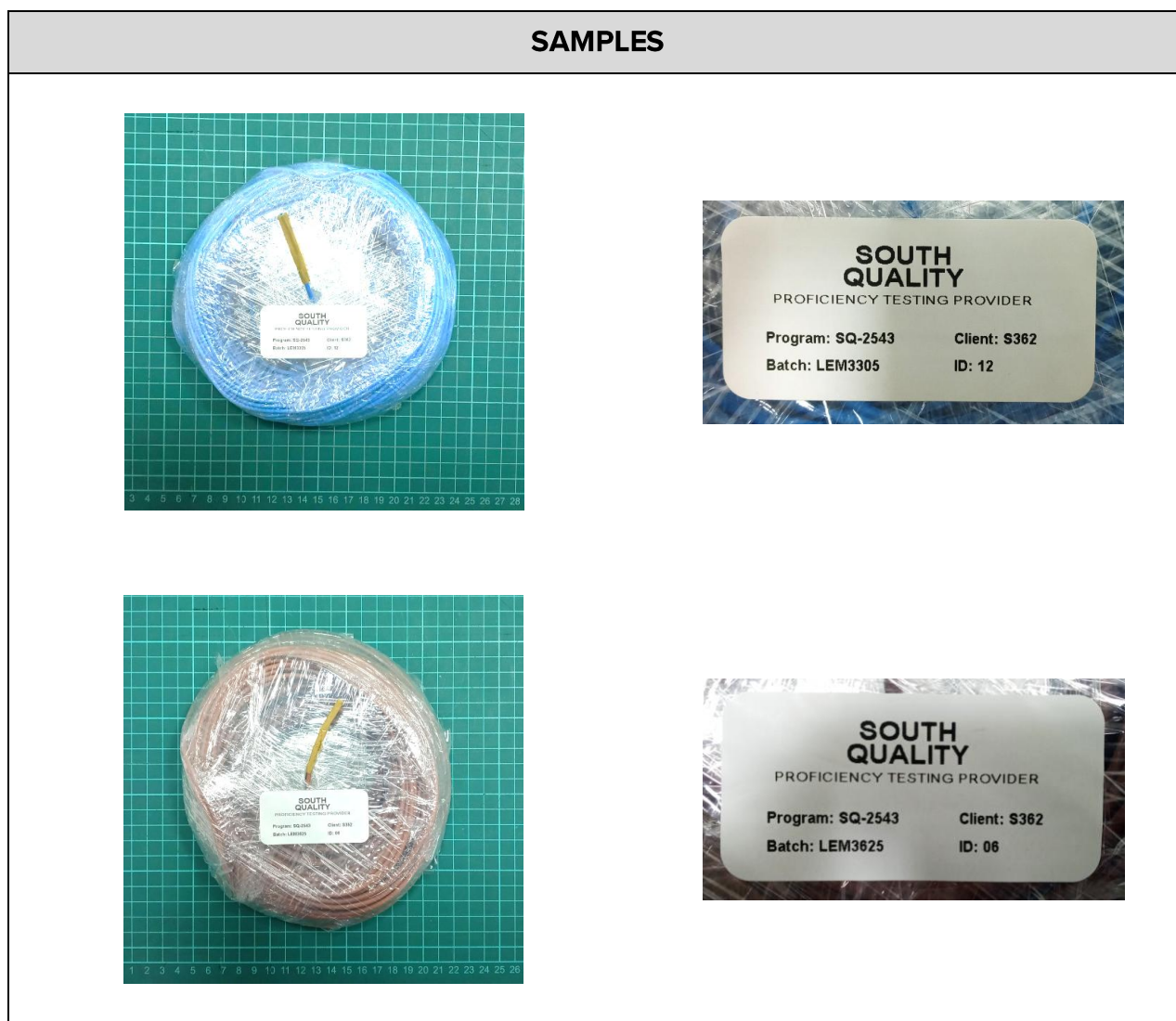
6. SAMPLE INFORMATION

The following samples were sent for testing:

Batch:	LEM3305
Sample ID:	12
Characteristics:	Light blue cable - Cu/LSOH - 1 x 1 mm ² - 50 m

Batch:	LEM3625
Sample ID:	06
Characteristics:	Brown cable - Cu/PVC - 1 x 1.5 mm ² - 50 m

7. IMAGES



8. ASSIGNED VALUES

BATCH	MINIMUM LIGHT TRANSMITTANCE	
	(%)	SD
LEM3305	38.91	0.87
LEM3625	95.06	0.94

9. PARTICIPANT RESULTS (SEE APPENDICES B AND C)

CODE	MINIMUM LIGHT TRANSMITTANCE (%)
LEM3305-12	40.45
LEM3625-06	96.50

10. STATISTICS

The results must be treated as quantitative.

According to B.4.1.3 of ISO 17043 the appropriate technique is to compare participant results with the assigned values. The results can be compared using **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		
LEM3305	40.45	38.91	1.77	SATISFACTORY
LEM3625	96.50	95.06	1.53	SATISFACTORY

12. CONCLUSIONS

The overall performance on this **SQ-2543** program from the participant laboratory **METCAB UYGUNLUK DEGERLENDIRME LIMITED SIRKETI - METCAB TEST LABORATORY**, 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 A

INSTRUCTIONS



INSTRUCTIONS

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)

1 - General

This document serves as a guide for managing the results of the **SQ-2543** program.

2 - Standard

IEC 61034-2: 2005 + AMD 1: 2013 + AMD 2: 2019

3 - Tests involved

TEST
Measurement of the density of smoke emitted by burning cables

4 - Samples

CODE	SAMPLE	QUANTITY
LEM3305-12	Light blue cable - 1 x 1 mm ²	50 m
LEM3625-06	Brown cable - 1 x 1.5 mm ²	50 m

5 - Notes

- a) Being a bilateral program there is no deadline to accomplish sending results.
- b) The participant must submit the results using the usual report employed by their laboratory.
- c) Samples must be retained until the end of the program, which concludes with the submission of the final report.
- d) To review the results, test images would be appreciated. Images can be attached at the end of this document or sent by email.

PHOTOGRAPHS

DSQ-012 - REV 06 -

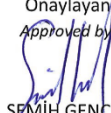
SQ-2543

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APPENDIX B

PARTICIPANT RESULTS (BATCH: LEM3305)

Rapor no:/TS20260521_164211

METCAB DENEY LABORATUVARI	
METCAB UYGUNLUK DEĞERLENDİRME LTD. ŞTİ. DENEY LABORATORY (SİLİVRİ) Selimpaşa, 6093. Sk. No:18, 34590 Silivri/İstanbul Web: www.metcab.org	
DENEY RAPORU TEST REPORT	
Deneysel Talep Eden Customer	SOUTH QUALITY
Deneysel Talep Tarihi/No Order Date/No	18.04.2026 / SQ-2543
Numunenin Tanımı Sample Description	TREFILCON S.R.L - INDUSTRIA ARGENTINA 450/750V - 1.00mm ² - 247 NM 02 - C4 - BWF-B < SELLO IRAM - RES. M.P.S.C 169/2018> LEM3305 ID 12 POGRAM SQ-2543 CLIENT S362
Numune Kabul Tarihi Test Item Receipt Date	4.05.2026
Deneysel Yapıldığı Tarih Date of Test	21.05.2026
Uygulanan Standard/Metod Applied Standard/Method	EN 61034-2:2005+/A1:2013+/A2:2020
Rapor No/Sayfa Sayısı Number of pages of the report	2
Açıklamalar Remarks	Proficiency Testing
Deneysel ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deneysel metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir. The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.	
 Mühür Seal Tarih Date 30.06.2026	Deneysel yapan Experimenter  Şenol Sarı Lab. Staff
	Gözetmen Supervisor
	Onaylayan Approved by  SEMIH GENÇEL Lab. Manager

Bu rapor, hazırlayan laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz raporlar geçersizdir. Bu rapor, sadece deneysel yapılan numune için geçerlidir.
This test report shall not be reproduced other than in full except with the written permission of the laboratory.
Test reports without signature and seal are not valid. This test report represents only testes sample(s).

(DOK. NO : F.16.08, REV: 00, REV TRH: -, YAYIN TARİHİ: 01.03.2025)

1/2

Rapor no:/TS20260521_164211

METCAB DENEY LABORATUVARI <i>METCAB TEST LABORATORY</i>	
DENEY SONUÇLARI/TEST RESULTS	
TEST RAPORU/TEST REPORT	
EN 61034-2:2005+/A1:2013+/A2:2020	
Özellikler/Specifications	Ölçülen Değer/Measured Value
Dış çap/Overall diameter : 2,6 mm Kablo sayısı/Number of samples : 35/7 adet- piece / demet-bundle	Işık geçirgenliği/Light Transmittence = 40,45%

Yeterlilik testi amacıyla TREFILCON S.R.L - INDUSTRIA ARGENTINA 450/750V - 1.00mm² - 247 NM 02 - C4 - BWF-B < SELLO IRAM - RES. M.P.S.C 169/2018> LEM3305 ID 12 POGRAM SQ-2543 CLIENT S362 numunesi üzerinde yukarıda belirtilen standartlara göre deneyler uygulanmış ve yukarıdaki sonuçlar alınmıştır. / For Proficiency Testing purposes, tests were performed on a specimen with a cross-sectional area of TREFILCON S.R.L - INDUSTRIA ARGENTINA 450/750V - 1.00mm² - 247 NM 02 - C4 - BWF-B < SELLO IRAM - RES. M.P.S.C 169/2018> LEM3305 ID 12 POGRAM SQ-2543 CLIENT S362 in accordance with the standards specified above, and the results presented above were obtained

(DOK. NO : F.16.08, REV: 00, REV TRH: -, YAYIN TARİHİ: 01.03.2025)

2/2

APPENDIX C

PARTICIPANT RESULTS (BATCH: LEM3625)

Rapor no:/TS20260521_143115

METCAB DENEY LABORATUVARI

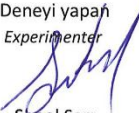
METCAB UYGUNLUK DEĞERLENDİRME LTD. ŞTİ. DENEY LABORATORY (SİLİVRİ)
Selimpaşa, 6093. Sk. No:18, 34590 Silivri/İstanbul
Web: www.metcab.org

DENEY RAPORU TEST REPORT

Deneysel Talep Eden Customer	SOUTH QUALITY
Deneysel Talep Tarihi/No Order Date/No	18.04.2026 / SQ-2543
Numunenin Tanımı Sample Description	1x1,5mm ² LEM3305 ID 06 POGRAM SQ-2543 CLIENT S362
Numune Kabul Tarihi Test Item Receipt Date	4.05.2026
Deneysel Yapıldığı Tarih Date of Test	21.05.2026
Uygulanan Standard/Metod Applied Standard/Method	EN 61034-2:2005+/A1:2013+/A2:2020
Rapor No/Sayfa Sayısı Number of pages of the report	2
Açıklamalar Remarks	Proficiency Testing

Deneysel ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deneysel metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.
The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.



Deneysel yapan
Experimenter

Şenol Sarı
Lab. Staff

Gözetmen
Supervisor

Onaylayan
Approved by

SEMİH GENÇEL
Lab. Manager

Bu rapor, hazırlayan laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz raporlar geçersizdir. Bu rapor, sadece deneysel yapılan numune için geçerlidir.
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(DOK. NO : F.16.08, REV: 00, REV TRH: -, YAYIN TARİHİ: 01.03.2025)
1/2

Rapor no:/TS20260521_143115

METCAB DENEY LABORATUVARI <i>METCAB TEST LABORATORY</i>	
DENEY SONUÇLARI/TEST RESULTS	
TEST RAPORU/TEST REPORT	
EN 61034-2:2005+/A1:2013+/A2:2020	
Özellikler/Specifications	Ölçülen Değer/Measured Value
Dış çap/Overall diameter : 3,1 mm Kablo sayısı/Number of samples : 28/4 adet- piece / demet-bundle	Işık geçirgenliği/Light Transmittance = 96,5%

Yeterlilik testi amacıyla 1x1,5mm² LEM3305 ID 06 POGAM SQ-2543 CLIENT S362 numunesi üzerinde yukarıda belirtilen standartlara göre deneyler uygulanmış ve yukarıdaki sonuçlar alınmıştır. / For Proficiency Testing purposes, tests were performed on a specimen with a cross-sectional area of 1x1,5mm² LEM3305 ID 06 POGAM SQ-2543 CLIENT S362 in accordance with the standards specified above, and the results presented above were obtained

(DOK. NO : F.16.08, REV: 00, REV TRH: -, YAYIN TARİHİ: 01.03.2025)
2/2

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