SOUTH QUALITY

PROFICIENCY TESTING PROVIDER

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IEC 60811-403

ELECTRIC AND OPTICAL FIBRE CABLES - OZONE RESISTANCE TEST ON CROSS-LINKED COMPOUNDS -

Program: SQ-2514

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1. FOREWORD

This report summarizes the results of the **SQ-2514** proficiency testing program on the realization of ozone resistance test for verification of cross-linkable compounds. 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. 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 realize the ozone resistance test for verification of cross-linkable compounds, using the following standard:

Standard
IEC 60811-403: 2012

To verify this, batches of cables have been selected.

Participants in this program have not been previously informed about the expected behavior of the samples they receive.

As a usual practice of this program, three different combinations of samples can be sent to participants:

i. Sample A (PASS) + Sample B (PASS).
ii. Sample A (PASS) + Sample B (FAIL).
iii. Sample A (FAIL) + Sample B (FAIL).

4. PARTICIPANT

Company: **ELAND CABLES**

Country: United Kingdom

Client ID: E485

Contact person: Denham Gilday
Laboratory Manager
dgilday@elandcables.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: **50 units** Tested samples from each batch: **10 units**

DETERMINATION	HOMOGENEITY OF RESULTS IN THE ANALYZED SAMPLES (40°C - 72 h)		
	BATCH: LEM3232	BATCH: LEM3233	BATCH: LEM3234
OZONE RESISTANCE	NO	YES	YES

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

DETERMINATION	HOMOGENEITY OF RESULTS IN THE ANALYZED SAMPLES (40°C - 72 h)		
	BATCH: LEM3457	BATCH: LEM3458	BATCH: LEM3459
OZONE RESISTANCE	YES	YES	YES

Samples for this program are taken from the selected batches identified as **LEM3234** and **LEM3458**.

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

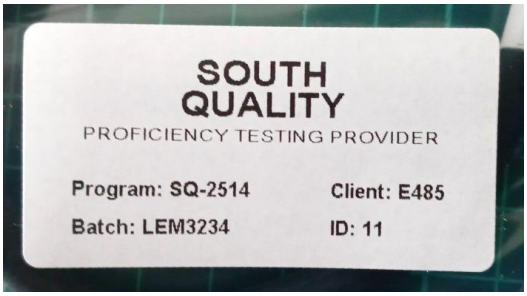
The following samples were sent for testing:

Batch:	LEM3234
Sample ID:	11
Characteristics:	Power cable - 2 x 0.75 mm^2 - 50 cm

Batch:	LEM3458
Sample ID:	08
Characteristics:	Power cable - 2 x 1.50 mm^2 - 50 cm

7. IMAGES

SAMPLES



SAMPLES
 

8. ASSIGNED VALUES

BATCH	OZONE RESISTANCE (40°C - 72 h)
LEM3234	PASS
LEM3458	PASS

9. PARTICIPANT RESULTS (SEE APPENDIX)

CODE	OZONE RESISTANCE (40°C - 72 h)
LEM3234-11	PASS
LEM3458-08	PASS

10. STATISTICS

The results must be treated as qualitative.

For qualitative results, the comparison will be made directly against the assigned values, so any difference will be evaluated as **Unsatisfactory.**

11. EVALUATION OF PERFORMANCE

BATCH	OZONE RESISTANCE (40°C - 72 h)		PERFORMANCE RESULT
	PARTICIPANT RESULT	ASSIGNED VALUE	
LEM3234	PASS	PASS	**SATISFACTORY**
LEM3458	PASS	PASS	**SATISFACTORY**

12. CONCLUSIONS

The overall performance on this **SQ-2514** program from the participant laboratory **ELAND CABLES**, is **SUFFICIENT** based on expected results.

The criteria used for the evaluation of the overall performance is the following:

- **SUFFICIENT** performance: No unsatisfactory results were obtained.
- **INSUFFICIENT** performance: An unsatisfactory result was obtained.

APPENDIX

PARTICIPANT RESULTS

(Results form)

INSTRUCTIONS

PROGRAM:	Electric and optical fibre cables Ozone resistance test on cross-linked compounds
CODE:	SQ-2514
VERSION:	-
STANDARD:	IEC 60811-403
COORDINATOR:	Eng. Esteban Di Marco (edimarco@ptsouthquality.com)

1 - General

This document serves as a guide for managing the results of the **SQ-2514** program.

2 - Standard

IEC 60811-403: 2012

3 - Tests involved

TEST
Realization of ozone resistance test for verification of cross-linkable compounds

4 - Samples

CODE	SAMPLE	QUANTITY
LEM3234-11	Power cable - 2 x 0.75 mm^2 - 50 cm	1
LEM3458-08	Power cable - 2 x 1.50 mm^2 - 50 cm	1

5 - Notes

a) Being a bilateral program, there is no deadline for submitting results.
b) The participant must submit the results using the usual report employed by their laboratory.
c) The samples should be treated as routine laboratory samples. All testing, recording, and reporting must be performed in accordance with IEC 60811-403.
d) The remaining samples must be retained until the program concludes with the submission of the final report.
e) To review the results, test images would be appreciated. Images can be attached at the end of this document or sent by email.

PHOTOGRAPHS

Ozone Resistance Test Results

Date		15/12/2025			
Identificartion		LEM3458 - 08			
Material Type		Insulation - EPR			
Standards		IEC 60502-1 2021 in conjunction with IEC 60811-403:2012			
Clause		Requirement + Test	Result - Remark	Result - Remark	Verdict
Method B as agreed			Brown	Blue	
MECHANICAL PROPERTIES OF INSULATION					
OZONE RESISTANCE TEST					
temperature	(40±2) °C				
Duration	72 h				
Ozone concentration	%	0, 0015 to 0, 0025			
Result to be obtained		No cracks	No cracks	No cracks	Pass

Date		15/12/2025			
Identificartion		LEM3234 - 11			
Material Type		IEC53 Insulation - IE4			
Standards		IEC 60245-4:2011 in conjunction with IEC 60245-1:2003, AMD1:2007 and IEC 60245-2:1994, AMD1:1997, AMD2:1997 IEC 63294:2021 IEC 60811-403:2012			
Clause		Requirement + Test	Result - Remark	Result - Remark	Verdict
Method B as agreed			Brown	Blue	
MECHANICAL PROPERTIES OF INSULATION					
OZONE RESISTANCE TEST					
temperature	(40±2) °C				
Duration	72 h				
Ozone concentration	%	0, 0015 to 0, 0025			
Result to be obtained		No cracks	No cracks	No cracks	Pass

Ozone Resistance Test Equipment

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