

# REPORT No 11745

*Date of issue: June 1, 2026*

*Status: FINAL REPORT*

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## ISO 10545-14 CERAMIC TILES - RESISTANCE TO STAINS - Program: SQ-3513

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## 1. FOREWORD

This report summarizes the results of the **SQ-3513** proficiency testing program on the determination of the resistance to stains of ceramic tiles. 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 April 2026 with the aim of assessing the laboratory's ability to competently perform the designated tests.

## 2. ORGANIZATION

Program Coordinator: Lic. Esther Casas  
 Assistant Technician: Berenice Ferrel  
 Statistic: Lic. Manuel Tozaki  
 Supervision: Eng. Emiliano Medina

## 3. OBJECTIVE

The objective of this proficiency testing program is to assess the classification of stain resistance of ceramic tiles based on visual examination, using the following standard:

Standard
ISO 10545-14: 2015

To verify this, batches of ceramic tile samples have been 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: **TCKI**  
 Laboratory: **Laboratorium**  
 Country: Netherlands  
 Client ID: E548  
 Contact person: Ing. Ineke Geist  
 Head of laboratory  
[i.geist@tcki.nl](mailto:i.geist@tcki.nl)

## 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: **250 units**

Tested samples from each batch: **20 units**

DETERMINATION	HOMOGENEITY OF RESULTS IN THE ANALYZED SAMPLES		
	BATCH: LGC2644	BATCH: LGC2645	BATCH: LGC2646
RESISTANCE TO STAINS	YES	YES	NO

DETERMINATION	HOMOGENEITY OF RESULTS IN THE ANALYZED SAMPLES		
	BATCH: LGC2849	BATCH: LGC2850	BATCH: LGC2851
RESISTANCE TO STAINS	YES	NO	YES

Samples for this program are taken from the selected batches identified as **LGC2645** and **LGC2849**.

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:	LGC2645
Sample ID:	08
Characteristics:	Red ceramic tile (Unglazed) - 200 x 200 x 8 mm - 5 units

Batch:	LGC2849
Sample ID:	05
Characteristics:	White ceramic tile (Glazed) - 200 x 200 x 6 mm - 5 units

## 7. IMAGES



## 8. ASSIGNED VALUES

BATCH	RESISTANCE TO STAINS ( CLASSIFICATION )
LGC2645	CLASS 1
LGC2849	CLASS 5

## 9. PARTICIPANT RESULTS (SEE APPENDICES B AND C)

CODE	RESISTANCE TO STAINS ( CLASSIFICATION )
LGC2645-08	CLASS 1
LGC2849-05	CLASS 5

## 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	RESISTANCE TO STAINS ( CLASSIFICATION )		PERFORMANCE RESULT
	PARTICIPANT RESULT	ASSIGNED VALUE	
LGC2645	CLASS 1	CLASS 1	SATISFACTORY
LGC2849	CLASS 5	CLASS 5	SATISFACTORY

## 12. CONCLUSIONS

The overall performance of this **SQ-3513** program from the participant laboratory **TCKI - Laboratorium**, is **SUFFICIENT** based on expected results.

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

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

# APPENDIX A

## INSTRUCTIONS



# INSTRUCTIONS

<b>PROGRAM:</b>	CERAMIC TILES - RESISTANCE TO STAINS -
<b>CODE:</b>	SQ-3513
<b>VERSION:</b>	-
<b>STANDARD:</b>	ISO 10545-14
<b>COORDINATOR:</b>	Lic. Esther Casas ( <a href="mailto:ecosas@ptsouthquality.com">ecosas@ptsouthquality.com</a> )

### 1 - General

This document serves as a guide for managing the results of the **SQ-3513** program.

### 2 - Standard

**ISO 10545-14: 2015**

### 3 - Tests involved

TEST
Determining the resistance to stains of ceramic tiles

### 4 - Samples

CODE	SAMPLE	QUANTITY
LGC2645-08	Red ceramic tile (Unglazed) - 200 x 200 x 8 mm	5
LGC2849-05	White ceramic tile (Glazed) - 200 x 200 x 6 mm	5

### 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 are to be handled as routine lab samples, with all testing, documentation, and reporting adhering to **ISO 10545-14**.
- d) Samples must be retained until the end of the program, which 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**

# APPENDIX B

## PARTICIPANT RESULTS (TEST REPORT #26.03.00533)



**TCKI**

Stichting TCKI Florijnweg 6, Velp-Arnhem, The Netherlands +31 26 3845600  
PO Box 27, NL-6880 AA Velp KvK 41047499 info@tcki.nl www.tcki.nl



Customer :  
T.C.K.I. (intern)

TCKI order number : 26.03.00533  
Sample test number : SQ-3513 batch LGC2645 ID8  
Your job description :

### Report

Collective designation/sample test number (also invoice designation):  
SQ-3513 batch LGC2645 ID8


Dear,

I herewith send you the results of the products you supplied.

- Sampling, recommendations and declarations of conformity of the results fall outside the scope of the accreditation.
- The laboratory management can give you, on request, supplementary information concerning the test procedure and measurement uncertainty of the results or can be found in the clarification document.
- Results from this report only have reference to the tested material.
- Duplication of this document is only allowed with preliminary permission of TCKI or client.
- Findings and declarations of conformity do not take into account the measurement uncertainty.

We trust to be of service to you with the information provided.

Yours faithfully,  
Velp, 30-04-2026

  
Mieke Geist, Head of laboratory.

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PO Box 27, NL-6880 AA Velp KvK 41047499 info@tcki.nl www.tcki.nl



### INVESTIGATION ON CERAMIC TILES

Customer	: T.C.K.I. (intern)
Manufacturer	: T.C.K.I. (intern)
TCKI order number	: 26.03.00533
Sample test number (Also invoice indication)	: SQ-3513 batch LGC2645 ID8
Sampling date	: 18-03-2026
Date of receipt	: 18-03-2026
Sampling	: Unknown
Sample taken by	: South Quality
Supplied by	: South Quality
Finish	: Unglazed
Application	: Floor tile
Offered product specification	: Not applicable
Spacers	: No
Number of tiles	: 5

1. Resistance to stains



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### Q# 1. Resistance to stains (EN-ISO 10545-14)

TCKI order number : 26.03.00533  
 Sample test number : SQ-3513 batch LGC2645 ID8  
 Sample number : 1, 2, 3, 4, 5

Staining agent	Successful cleaning procedure 1)					Classifi- cation
	Product 1	Product 2	Product 3	Product 4	Product 5	
Green staining agent	D	D	D	D	D	2
Red staining agent	-	-	-	-	-	-
Iodine	C	C	C	C	C	3
Olive oil						1
<b>General classification: Class 1</b>						

- 1) Procedure A: Running hot water  
 Procedure B: Weak cleaning agent, sponge and running hot water  
 Procedure C: Mechanical cleaning with a brush and powerful cleaning agent  
 Procedure D: Appropriate solvent (acid, alkali or acetone)

If less than 5 specimens have been tested, the number of tested specimens is deviating from the standard.

# APPENDIX C

## PARTICIPANT RESULTS (TEST REPORT # 26.04.00023)



**TCKI**

Stichting TCKI Florijnweg 6, Velp-Arnhem, The Netherlands +31 26 3845600  
PO Box 27, NL-6880 AA Velp KvK 41047499 info@tcki.nl www.tcki.nl



Customer :  
T.C.K.I. (intern)

TCKI order number : 26.04.00023  
Sample test number : SQ-3513 Batch LGC2849 ID5  
Your job description :

### Report

Collective designation/sample test number (also invoice designation):  
SQ-3513 Batch LGC2849 ID5


Dear,

I herewith send you the results of the products you supplied.

- Sampling, recommendations and declarations of conformity of the results fall outside the scope of the accreditation.
- The laboratory management can give you, on request, supplementary information concerning the test procedure and measurement uncertainty of the results or can be found in the clarification document.
- Results from this report only have reference to the tested material.
- Duplication of this document is only allowed with preliminary permission of TCKI or client.
- Findings and declarations of conformity do not take into account the measurement uncertainty.

We trust to be of service to you with the information provided.

Yours faithfully,  
Velp, 15-04-2026

  
Mieke Geist, Head of laboratory.

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**TCKI**

 Stichting TCKI Florijnweg 6, Velp-Arnhem, The Netherlands +31 26 3845600  
 PO Box 27, NL-6880 AA Velp KvK 41047499 info@tcki.nl www.tcki.nl


### INVESTIGATION ON CERAMIC TILES

Customer	: T.C.K.I. (intern)
Manufacturer	: T.C.K.I. (intern)
TCKI order number	: 26.04.00023
Sample test number (Also invoice indication)	: SQ-3513 Batch LGC2849 ID5
Sampling date	: 18-03-2026
Date of receipt	: 18-03-2026
Sampling	: Unknown
Sample taken by	: South Quality
Supplied by	: South Quality
Finish	: Glazed
Application	: Floor tile
Offered product specification	: Not applicable
Spacers	: No
Number of tiles	: 5

1. Resistance to stains  
 Findings TCKI (tested against EN 14411 and EN-ISO 10545-1):  
 The required requirements are met in respect of the parts examined



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**Q# 1. Resistance to stains (EN-ISO 10545-14)**

TCKI order number : 26.04.00023  
 Sample test number : SQ-3513 Batch LGC2849 ID5  
 Sample number : 1, 2, 3, 4, 5

Staining agent	Successful cleaning procedure 1)					Classifi- cation
	Product 1	Product 2	Product 3	Product 4	Product 5	
Green staining agent	A	A	A	A	A	5
Red staining agent	-	-	-	-	-	-
Iodine	A	A	A	A	A	5
Olive oil	A	A	A	A	A	5
<b>General classification: Class 5</b>						

- 1) Procedure A: Running hot water
- Procedure B: Weak cleaning agent, sponge and running hot water
- Procedure C: Mechanical cleaning with a brush and powerful cleaning agent
- Procedure D: Appropriate solvent (acid, alkali or acetone)

TCKI result (tested according to EN 14411 and/or BRL 1010):  
 Meets the requirements

If less than 5 specimens have been tested, the number of tested specimens is deviating from the standard.

#) Operations marked with "Q" are RVA-accredited.

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