

# REPORT No 11683

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## ISO 10545-7

# CERAMIC TILES - RESISTANCE TO SURFACE ABRASION FOR GLAZED TILES

## Program: SQ-3546

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|  |  |   |
|--|--|---|
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## 1. FOREWORD

This report summarizes the results of the **SQ-3546** proficiency testing program on the determination of resistance to surface abrasion of glazed ceramic. 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  
 Statistics: Lic. Manuel Tozaki  
 Supervision: Eng. Emiliano Medina

## 3. OBJECTIVE

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

| Standard          |
|-------------------|
| ISO 10545-7: 1996 |

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: **600 units**

Tested samples from each batch: **60 units**

| DETERMINATION                  | HOMOGENEITY OF RESULTS IN THE ANALYZED SAMPLES |                |                |
|--------------------------------|--|----------------|----------------|
|                                | BATCH: LGC2890                                 | BATCH: LGC2891 | BATCH: LGC2892 |
| RESISTANCE TO SURFACE ABRASION | YES  | YES            | YES            |

Samples for this program are taken from selected batch identified as **LGC2892**.

For the batch indicated, the values determined in the homogeneity study are used as assigned values.

Analysis of this test data indicated that the selected samples were sufficiently homogeneous for the program and therefore the results of participants identified as outliers cannot be attributed to sample variability.

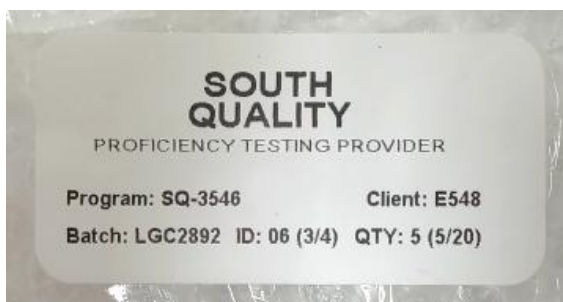
## 6. SAMPLE INFORMATION

The following sample was sent for testing:

|                  |   |
|------------------|---|
| Batch:           | LGC2892   |
| Sample ID:       | 06  |
| Characteristics: | White ceramic tile (Glazed) - 200 x 200 x 6 mm - 20 units |

## 7. IMAGES

### SAMPLES



## 8. ASSIGNED VALUES

| BATCH   | ABRASION STAGE - FAILURE VISIBLE<br>NUMBER OF TURNS | RESISTANCE TO SURFACE ABRASION<br>CLASSIFICATION |
|---------|---|--|
| LGC2892 | 12000   | CLASS 4  |

## 9. PARTICIPANT RESULTS (SEE APPENDIX B)

| CODE       | ABRASION STAGE - FAILURE VISIBLE<br>NUMBER OF TURNS | RESISTANCE TO SURFACE ABRASION<br>CLASSIFICATION |
|------------|---|--|
| LGC2892-06 | 12000   | CLASS 4  |

## 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

| PARAMETER   | BATCH: LGC2892        |                   | PERFORMANCE<br>RESULT |
|---|-----------------------|-------------------|-----------------------|
|   | PARTICIPANT<br>RESULT | ASSIGNED<br>VALUE |                       |
| ABRASION STAGE - FAILURE VISIBLE<br>NUMBER OF TURNS | 12000                 | 12000             | SATISFACTORY          |
| RESISTANCE TO SURFACE ABRASION<br>CLASSIFICATION    | CLASS 4               | CLASS 4           | SATISFACTORY          |

## 12. CONCLUSIONS

The overall performance on this **SQ-3546** program from the participant laboratory **TCKI - Laboratorium**, 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 A

## INSTRUCTIONS



# INSTRUCTIONS

|                     |   |
|---------------------|---|
| <b>PROGRAM:</b>     | CERAMIC TILES<br>RESISTANCE TO SURFACE ABRASION FOR GLAZED TILES                                  |
| <b>CODE:</b>        | SQ-3546   |
| <b>VERSION:</b>     | -   |
| <b>STANDARD:</b>    | ISO 10545-7   |
| <b>COORDINATOR:</b> | Lic. Esther Casas<br>( <a href="mailto:ecasas@ptsouthquality.com">ecasas@ptsouthquality.com</a> ) |

### 1 - General

This document serves as a guide for managing the results of the **SQ-3546** program.

### 2 - Standard

**ISO 10545-7: 1996**

### 3 - Tests involved

| TEST   |
|--|
| Determining the resistance to surface abrasion of glazed ceramic |

### 4 - Samples

| CODE       | SAMPLE   | QUANTITY |
|------------|--|----------|
| LGC2892-06 | White ceramic tile (Glazed) - 200 x 200 x 6 mm | 20       |

### 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 10545-7**.
- 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 #26.04.00027)



**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 : 26.04.00027  
Sample test number : SQ-3546 Batch LGC2892 ID6  
Your job description :

### Report

Collective designation/sample test number (also invoice designation):  
SQ-3546 Batch LGC2892 ID6


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, 14-04-2026

  
M. Geist, Head of laboratory.

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**TCKI**

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## INVESTIGATION ON CERAMIC TILES

|   |                             |
|---|-----------------------------|
| Customer  | : T.C.K.I. (intern)         |
| Manufacturer                                    | : T.C.K.I. (intern)         |
| TCKI order number                               | : 26.04.00027               |
| Sample test number<br>(Also invoice indication) | : SQ-3546 Batch LGC2892 ID6 |
| 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                                 | : 20                        |

1. Abrasion resistance, glazed ceramic tiles



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## Q# 1. Abrasion resistance, glazed ceramic tiles (EN-ISO 10545-7)

TCKI order number : 26.04.00027  
 Sample test number : SQ-3546 Batch LGC2892 ID6  
 Sample number : 1 - 16

### Results

|                      |                    |
|----------------------|--------------------|
| 100 rotations        | Well               |
| 150 rotations        | Well               |
| 600 rotations        | Well               |
| 750 rotations        | Well               |
| 1500 rotations       | Well               |
| 2100 rotations       | Well               |
| 6000 rotations       | Well               |
| 12000 rotations      | Visual degradation |
| Resistance to stains | Not applicable     |
| Result: Class 4      |                    |

### Classification of glazed ceramic tiles:

| Abrasion stage: failure visible at revolutions | Class |
|--|-------|
| 100  | 0     |
| 150  | 1     |
| 600  | 2     |
| 750 , 1500                                     | 3     |
| 2100, 6000, 12000                              | 4     |
| 12000 + resistanced to staining                | 5     |

If not 11 specimens have been tested, the number of tested specimens is deviating from the standard.

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