



Main Laboratory Sassuolo

Centro di Ricerca, Sperimentazione, Consulenza e Controllo Qualità

Scandiano, 02/18/2016



Messrs CERAMICHE MARINER S.p.A.

Via Michelangelo, 22
42014 CASTELLARANO
(RE)

Confidential Test Report N. 0597/2016 /I
on ceramic tiles defined by ASTM C 242

Our ref.num.: 16670

Date of request: 02/12/2016

Test Specimen

"Glazed paver tiles 30x60 cm marked:
Serie VINCI"

Source

Submitted to Laboratory by Client

Date Received

02/16/2016

Time of test execution

start: 02/16/2016 end: 02/18/2016

Test detail / method description / test procedure

" Standard test method for resistance of ceramic tile to chemical substances -
Standard ASTM C 650 "

*The report relates only to the sample(s) tested. This report must not be reproduced in part
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misrepresentation of the results or their implications.*

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Confidential Test Report N. 0597/2016 /I

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Date 02/18/2016

CERAMICHE MARINER S.p.A.

Test specimen

"Glazed paver tiles 30x60 cm marked:

Serie VINCI"

STANDARD TEST METHOD FOR RESISTANCE OF CERAMIC TILE
TO CHEMICAL SUBSTANCES
(Standard ASTM C 650)

This test method calls for one or more tests, each consisting of exposing flat pieces of ceramic tile to the action of a specific chemical substance for a definite period of time at a prescribed temperature. After exposure, the surfaces of the tile are rinsed with water and inspected for effect.

Test solution	Visual test	Pencil test	N. of samples
<u>Common household and cleaning chemicals</u>			
Acetic acid, 3 % (v/v)	NA	NA	1
Acetic acid, 10 % (v/v)	NA	NA	1
Ammonium chloride, 100g/l	NA	NA	1
Citric acid solution, 30 g/l	NA	NA	1
Citric acid solution, 100 g/l	NA	NA	1
Lactic acid, 5 % (v/v)	NA	NA	1
Phosphoric acid, 3 % (v/v)	NA	NA	1
Phosphoric acid, 10 % (v/v)	NA	NA	1
Sulfamic acid, 30 g/l	NA	NA	1
Sulfamic acid, 100 g/l	NA	NA	1
<u>Swimming pool chemicals</u>			
Sodium hypochlorite solution, 20 mg/l	NA	NA	1
<u>Acids and bases</u>			
Hydrochloric acid solution, 3 % (v/v)	NA	NA	1
Hydrochloric acid solution, 18 % (v/v)	NA	NA	1
Potassium hydroxide, 100 g/l	NA	NA	1
Potassium hydroxide, 30 g/l	NA	NA	1

Legend: (NA) = Not Affected

(A) = Affected

THE DIRECTOR
(M.L. Simioli)





Main Laboratory Sassuolo

Centro di Ricerca, Sperimentazione, Consulenza e Controllo Qualità

Scandiano, 02/19/2016



Messrs **CERAMICHE MARINER S.p.A.**

Via Michelangelo, 22
42014 CASTELLARANO
(RE)

Confidential Test Report N. 0600/2016 /I
on ceramic tiles defined by ASTM C 242

Our ref.num.: 16670
Date of request: 02/12/2016

Test Specimen

" Glazed paver tiles 30x60 cm marked:
Serie VINCI"

Source

Submitted to Laboratory by Client

Date Received

02/16/2016

Time of test execution

start: 02/16/2016 end: 02/18/2016

Test detail / method description / test procedure

" Standard test method for water absorption -
Standard ASTM C373:2014 "

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Confidential Test Report N. 0600/2016 /I

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Date 02/19/2016

CERAMICHE MARINER S.p.A.

Test specimen

"Glazed paver tiles 30x60 cm marked:
Serie VINCI"

STANDARD TEST METHOD FOR WATER ABSORPTION
(STANDARD ASTM C 373)

Definition: samples were dried to a constant mass in an oven at 150 °C, then cooled and weighed. Then were immersed in distilled boiling water, boiling vigorously for 5 hours before cooling gradually to a total elapsed time of 29 hours. Samples were removed from the water, wiped dry and immediately reweighed.

Dimension of specimens: 20,5x20,5 cm

Sample N.	Percent Water Absorption
1	0,3
2	0,5
3	0,6
4	0,6
5	0,6

Average WA (%): 0,5



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Scandiano, 02/18/2016



Messrs **CERAMICHE MARINER S.p.A.**

Via Michelangelo, 22
42014 CASTELLARANO
(RE)

Confidential Test Report N. 0586/2016 /I
on ceramic tiles defined by ASTM C 242

Our ref.num.: 16670

Date of request: 02/12/2016

Test Specimen

" Glazed paver tiles 30x60 cm marked:
Serie VINCI"

Source

Submitted to Laboratory by Client

Date Received

02/16/2016

Time of test execution

start: 02/16/2016 end: 02/18/2016

Test detail / method description / test procedure

" Standard test method for determination of resistance to staining -
Standard ASTM C 1378 "

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Confidential Test Report N. 0586/2016 /I

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Date 02/18/2016

CERAMICHE MARINER S.p.A.

Test specimen

"Glazed paver tiles 30x60 cm marked:
Serie VINCI"

**STANDARD TEST METHOD FOR
DETERMINATION OF RESISTANCE TO STAINING
(Standard ASTM C 1378)**

This test method is intended to determine the resistance to staining of ceramic tile surfaces. The resistance to staining is determined by maintaining test solutions in contact with ceramic tile surfaces for a specified period of time. After exposure, the surface is cleaned in a defined manner, and the test specimens are inspected visually for changes.

Temperature maintained during the test: 19 °C

Tile N°	Staining material	Visual test	Exposure time to staining agent
1	Contrasting Grout	not affected	24 hours
2	Carbon Lamp Black	not affected	24 hours
3	Waterproof Ink Black	not affected	24 hours
4	Washable Ink	not affected	24 hours
5	Potassium Permanganate Solution, 1%	not affected	24 hours
6	Methylene Blue Solution, 1%	not affected	24 hours



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(M.L. Simioli)