TEST REPORT: 20198604/6
Modena, 11/12/19

CUSTOMER
FLORIM CERAMICHE SPA - VIA CANALETTO 24 - 41042 - FIORANO MODENESI - MO

MATERIAL and/o SAMPLE to be tested
porcelain tiles;

Denomination
serie Onyx & More articolo White porphyry superficie strutturato spessore 6 mm marchio casa Dolce casa;

Date of sample reception
18/11/2019;

Kind of test executed
Determination of Chemical Resistance

Referring standards
UNI EN ISO 10545-13:2017

Shifting from standards
No one

Equipment
Forced ventilation stove cod. MCP C43

Subcontracted phases
No one

Sampling made by
Customer

The test results showing in this Report are only referred to the sample taken by our staff or supplied by the Customer. He commits himself to reproduce integrally this document. Partial reproduction is forbidden. The times of retain of the samples was indicated in the offer related to the test report.
DETERMINATION OF CHEMICAL RESISTANCE

Beginning date : 02/12/2019
Analysis ending date : 06/12/2019

SAMPLE : Ceramic tiles, marked « serie Onyx & More articolo White porphyry superficie strutturato spessore 6 mm marchio casa Dolce casa »

CLASSIFICATION

Normal classification

- HB Pencil test (untreated tile)
  - Remove?
    - NO: Use alternative classification
    - YES: Chemical attack
      - Low concentration acids and alkalis
      - High concentration acids and alkalis
      - Visible effect?
        - NO: HB pencil test (treated tile)
          - Remove?
            - NO: Class A
            - YES: Class B
        - YES: Reflection test?
          - NO: Blurred?
            - NO: Class A
            - YES: Class C
          - YES: Partial or complete loss of original surface?
            - NO: Class B
            - YES: Class C

Alternative visual classification

- HB pencil test (untreated tile)
  - Remove?
    - YES: Use normal classification
    - NO: Chemical attack
      - Household chemicals and swimming pool salts
      - Low concentration acids and alkalis
      - High concentration acids and alkalis
      - Visual examination
        - Visible effect?
          - NO: Class A(v)
          - YES: Class B(v)
            - NO: Partial or complete loss of original surface?
              - NO: Class C(v)
              - YES: Class D(v)
**RESULTS**

Type of chemical attack: contact on proper surface

<table>
<thead>
<tr>
<th>TEST SOLUTIONS</th>
<th>Period of Test</th>
<th>CLASS OF RESISTANCE Sample 1</th>
<th>CLASS OF RESISTANCE Sample 2</th>
<th>CLASS OF RESISTANCE Sample 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium chloride 100 g/l</td>
<td>24 hours</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Sodium hypochlorite solution 20 mg/l</td>
<td>24 hours</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Citric acid solution 100 g/l</td>
<td>24 hours</td>
<td>LA</td>
<td>LA</td>
<td>LA</td>
</tr>
<tr>
<td>Hydrochloric acid solution 3% (V/V)</td>
<td>(96±1) hours</td>
<td>LA</td>
<td>LA</td>
<td>LA</td>
</tr>
<tr>
<td>Potassium hydroxide 30 g/l</td>
<td>(96±1) hours</td>
<td>LA</td>
<td>LA</td>
<td>LA</td>
</tr>
<tr>
<td>Hydrochloric acid solution 18% (V/V)</td>
<td>(96±1) hours</td>
<td>HA</td>
<td>HA</td>
<td>HA</td>
</tr>
<tr>
<td>Lactic acid 5% (V/V)</td>
<td>(96±1) hours</td>
<td>HA</td>
<td>HA</td>
<td>HA</td>
</tr>
<tr>
<td>Potassium hydroxide 100 g/l</td>
<td>(96±1) hours</td>
<td>HA</td>
<td>HA</td>
<td>HA</td>
</tr>
</tbody>
</table>

**REQUIREMENTS UNI EN 14411:2016**

GROUP: Bla  
UNI EN 14411:2016 Annex: G  

<table>
<thead>
<tr>
<th>CHEMICAL RESISTANCE</th>
<th>REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testing with household chemicals, swimming pool salt</td>
<td>minimum classe B</td>
</tr>
<tr>
<td>Testing with products at low acid and alkalis concentration</td>
<td>declared value</td>
</tr>
<tr>
<td>Testing with products at high acid and alkalis concentration</td>
<td>declared value</td>
</tr>
</tbody>
</table>