

# PRODUCT CERTIFICATE

Finished Product Laboratory

## ISO 13006-10545

Equivalent to the Brazilian Norm NBR 15463/NBR 13818

Dry-pressed ceramic tiles with low water absorption  $E_b \leq 0,1\%$

**PRODUCT:** MINERAL PORTLAND 60X60

Polish Rectified

**TIPOLOGY:** TECHINICAL PORCELAIN TILE

**SIZE:** 60X60

**CODE:** 22280E

**LINE:** MINERAL



| Characteristics                                | Test as per   | Results |
|--|---|---------|
| <b>Physical</b>                                |   |         |
| Water Absorption (%E)                          | ISO 10545-3<br>NBR 13818 - annex: B ( $E \leq 0,1\%$ )                | 0,1     |
| Modulus of Breaking Strength (MPa)             | ISO 10545-4<br>NBR 13818 - annex: C (NBR 15463 Average: $\geq 45$ )   | 45      |
| Breaking Load (N)                              | ISO 10545-4<br>NBR 13818 - annex: C (NBR 15463 Average: $\geq 1800$ ) | 1800    |
| Moisture Expansion (mm/m)                      | ISO 10545- 10<br>NBR 13818 - annex: J                                 | 0,1     |
| Resistance to Deep Abrasion (mm <sup>3</sup> ) | ISO 10545-6<br>NBR 13818 - annex: E ( $\leq 175$ )                    | 175     |
| Crazing Resistance                             | ISO 10545-11<br>NBR 13818 - annex: F                                  | Resist  |
| Frost Resistance                               | ISO 10545-12<br>NBR 13818 - annex: M                                  | NA      |
| Resistance to Thermal Shock                    | ISO 10545-9<br>NBR 13818 - annex: L                                   | Resist  |

### Chemical

#### Resistance to Stains

|                                   |  |   |
|-----------------------------------|--|---|
| Green staining agent in light oil | ISO 10545-14<br>NBR 13818 - annex: G<br>(Minimum: 3) | 5 |
| Red staining agent in light oil   |  | 5 |
| Olive Oil                         |  | 5 |

#### Chemical Resistance

|                             |  |   |
|-----------------------------|--|---|
| Hydrochloric Acid 3% (v/v)  | ISO 10545-13<br>NBR 13818 - annex: H<br>(Minimum: B) | A |
| Potassium Hydroxide 30g/L   |  | A |
| Citric Acid 100g/L          |  | A |
| Lactic Acid 5% (v/v)        |  | A |
| Hydrochloric Acid 18% (v/v) |  | A |
| Potassium Hydroxide 100g/L  |  | A |
| Ammonium Chloride 100g/L    |  | A |
| Sodium Hypochloride 20mg/L  |  | A |

| Coefficient of Friction |  |     |
|-------------------------|--|-----|
| Dry Surface             | NBR 13818 - annex: N<br>Method: TORTUS III<br>( Value $\geq$ 0,4 ) | 0,4 |
| Wet Surface             |  | 0,3 |
| Wet Surface             | ANSI A137. Section 9.6<br>(Minimum Average Value 0,42)             | 0,4 |

**Local of Use**

Cl - Commercial Light | RE - Residential | FA - Facade

**Recommendation for Application**

For information on application recommendations, refer to the virtual specifier: <http://especificadorvirtual.portobello.com.br>  
Tijucas, 21/10/2020

Portobello



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