

# 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 GRAFITE 60X60 Natural  
Rectified

**TIPOLOGY:** TECHINICAL PORCELAIN TILE

**SIZE:** 60X60

**CODE:** 22289E

**LINE:** MINERAL



Characteristics	Test as per	Results
<b>Physical</b>		
Water Absorption (%E)	ISO 10545-3 NBR 13818 - annex: B ( $E \leq 0,1\%$ )	0,1
Modulus of Breaking Strength (MPa)	ISO 10545-4 NBR 13818 - annex: C (NBR 15463 Average: $\geq 45$ )	45
Breaking Load (N)	ISO 10545-4 NBR 13818 - annex: C (NBR 15463 Average: $\geq 1800$ )	1800
Moisture Expansion (mm/m)	ISO 10545- 10 NBR 13818 - annex: J	0,1
Resistance to Deep Abrasion (mm <sup>3</sup> )	ISO 10545-6 NBR 13818 - annex: E ( $\leq 175$ )	175
Crazing Resistance	ISO 10545-11 NBR 13818 - annex: F	Resist
Frost Resistance	ISO 10545-12 NBR 13818 - annex: M	NA
Resistance to Thermal Shock	ISO 10545-9 NBR 13818 - annex: L	Resist
<b>Chemical</b>		
<b>Resistance to Stains</b>		
Green staining agent in light oil	ISO 10545-14 NBR 13818 - annex: G (Minimum: 3)	5
Red staining agent in light oil		5
Olive Oil		5
<b>Chemical Resistance</b>		
Hydrochloric Acid 3% (v/v)	ISO 10545-13 NBR 13818 - annex: H (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		B
Ammonium Chloride 100g/L		A
Sodium Hypochloride 20mg/L		A

## Coefficient of Friction

Dry Surface	NBR 13818 - annex: N Method: TORTUS III ( Value $\geq$ 0,4 )	0,5
Wet Surface		0,4

## Local of Use

IU - Industrial and Urban | 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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