

PRODUCT CERTIFICATE

Finished Product Laboratory  
 ISO 13006 - ISO 10545

Equivalent Brazilian Norm ABNT NBR ISO 10545 - ISO 13006  
 Performance Brazilian Norm ABNT - NBR 15575

<b>Product:</b>	PALLADIO CINZA AC 90X90	<b>Production Process:</b>	Wet ceramic
<b>Code:</b>	8043549	<b>Work Size (W):</b>	902x902 mm
<b>Class:</b>	Bla	<b>Nominal Size (N):</b>	90X90 cm
<b>Type:</b>	Porcelain tile	<b>Thickness:</b>	11 mm
<b>Shade Variation:</b>	V2	<b>Covering Area:</b>	1,63 m <sup>2</sup> /box
<b>Grout:</b>	1,5 mm	<b>Pieces per box:</b>	2
<b>Rectified:</b>	Yes	<b>Surface:</b>	Glazed

	CHARACTERISTICS	TESTING METHOD	SPECIFICATION	RESULTS
APPLICATION ROOM	FIR - All indoor residential areas	Manufacturer's recommendation	According to the manufacturer's criteria	FMC FWI WRC WFA
	FLC - Commercial areas with light foot traffic			
	FMC - Commercial areas with medium/moderate foot traffic and light equipment			
	FHC - Commercial areas with heavy foot traffic, and heavy equipment and vehicles			
	FFO - Outdoor flat areas			
	FRO - Outdoor sloped areas and ramps (maximum slope of 8.33%)			
	FWI - Indoor residential and commercial wet areas			
	WRC - Residential and commercial walls (up to 3 meters high)			
	WWS - Swimming pool interior walls			
WFA - Facades				
DIMENSIONAL / SUPERFICIAL PROPERTIES	Deviation of W/N W - Work size (mm) N - Nominal Size (mm)	ISO 10545 - 2	ISO 13006 -5,00 5,00 -5,00 5,00	-5,00 5,00 -5,00 5,00
	Deviation of r/W r - Average tile size (mm) W - Work size (mm)	ISO 10545 - 2	ISO 13006 -1,00 1,00 -1,00 1,00	-1,00 1,00 -1,00 1,00
	Deviation of e/eW e - Average tile thickness (mm) eW - Fabrication thickness (mm)	ISO 10545 - 2	ISO 13006 ± 0,50	± 0,50
	Rectangularity Deviation from W (mm)	ISO 10545 - 2	ISO 13006 -1,50 1,50 -1,50 1,50	-0,90 0,90 -0,90 0,90
	Straightness of side: Deviation from W (mm)	ISO 10545 - 2	ISO 13006 -0,80 0,80 -0,80 0,80	-0,70 0,70 -0,70 0,70
	Edge curvature Deviation from W (mm)	ISO 10545 - 2	ISO 13006 -1,80 1,80 -1,80 1,80	-0,80 1,00 -0,80 1,00
	Centre curvature Deviation from dW (mm)	ISO 10545 - 2	ISO 13006 -1,80 1,80 -1,80 1,80	-1,50 1,50 -1,50 1,50
	Warpage Deviation from dW (mm)	ISO 10545 - 2	ISO 13006 -1,80 1,80 -1,80 1,80	-1,20 1,20 -1,20 1,20
	Surface Quality (%)	ISO 10545 - 2	ISO 13006 ≥ 95	≥ 95
PHYSICAL PROPERTIES	Water Absorption (%)	ISO 10545 - 3	ISO 13006 ≤ 0,5	≤ 0,5
	Flexural Resistance module (MPa)	ISO 10545 - 4	NBR 15463 ≥ 37	≥ 40
	Breaking Strength (N)	ISO 10545 - 4	NBR 15463 ≥ 1800	≥ 2600
	Coefficient of Restitution	ISO 10545 - 5	ISO 13006 ≥ 0,55	0,60
	Moisture Expansion (mm/m)	ISO 10545 - 10	ISO 13006 ≤ 0,60	≤ 0,2
	Resistance to Cracking	ISO 10545 - 11	ISO 13006 1 Cycle	5 Cycles

	CHARACTERISTICS	TESTING METHODS	SPECIFICATION	RESULTS		
CHEMICAL PROPERTIES	<b>Chemical Resistance</b>					
	Domestic product	Ammonium Chloride 100g/L	GA ou GB	≥ GB		
	Pool water treatment	Sodium hypochlorite 20mg	ISO 10545 - 13	ISO 13006	GA ou GB	≥ GB
	Low concentration acid	Chloridric acid 3% (v/v)		GLA, GLB or GLC	≥ GLB	
	Low concentration acid	Ácido Cítrico 100g/L		GLA, GLB or GLC	≥ GLB	
	Low concentration alkali	Potassium hydroxide 30g/L		GLA, GLB or GLC	≥ GLB	
	<b>Stain Resistance</b>					
	Penetrating Action Agent	Green Chrome (40% oil)	ISO 10545 - 14	ISO 13006	≥ Class 3	Class 5
	Layer Forming Agent	Olive Oil			≥ Class 3	Class 5
	Oxidizing Action Agent	Alcoholic Iodine			≥ Class 3	Class 5
PERFORMANCE NORM ABNT NBR 15575	Resistance to humidity action	NBR 15575-3	NBR 15575-3	Doesn't exhibit	Doesn't exhibit	
	Hard Object Impact	NBR 15575-3	NBR 15575-3	Impact Energy (5J)	No total break	
	Reaction to fire	NBR 15575-3	NBR 15575-3	Class of Combustibility	Class I Incombustible	
	Useful life	NBR 15575-3	NBR 15575-3	Time (years)	13	

\* According to information in the sectorial performance manual.

**Note:**

- Verify if the product is adequate for the intended application room

- Product installation must be made according to norm ABNT NBR 13753.

- Sand may provoke scratches in any type of covering (stone, wood, vinyl or ceramic). For this reason, ceramic coverings are not warranted against scratches, especially concerning products with glossy surfaces. It is recommended special care during its installation and its use. In residential areas, we recommend to protect the base of furniture and appliances.

- Several performance characteristics required in the ABNT NBR 15575 norm refer to the prescriptive ABNT NBR 13818 norm, which is contained in this report.

-The characteristics defined by the ABNT NBR 15575 norm are applied only to residential areas, non-applied to commercial and industrial areas and are directly involved in the installed product's performance, therefore, the information declared in this report is only valid if proper installation methods are followed.

- Negligence towards the instruction manual, disrespect towards the intended use specified in this report, abnormal environmental action, climate factors, etc, is going to reduce the product's useful life, which may be shorter than the period declared by the manufacturer.

Cocal do Sul (SC), January 12, 2021

**Sérgio Pereira Ruzza**  
 Ceramic Technology Manager  
 CRQ: 13200008

**Angela Waterkemper Vieira**  
 P&D Coordinator