



# PRODUCT CERTIFICATE

## LABORATORY OF FINISHED PRODUCT

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

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Product:	MUNARI CIMENTO AC 30X60**	Manufacturing Process:	Wet ceramic process
Code:	8052774	Manufacturing Size:	300,0 x 600,0 mm
Class:	Bla	Nominal Size:	30X60 cm
Typology:	Porcelain tile	Thickness:	8,5 mm
Shade Variation:	V2	Coverage Area:	1,26m <sup>2</sup> /box
Grout Joint:	3 mm	Pieces per box:	7,00
Edge finish:	Bold	Surface:	GL ( Glazed )



	CHARACTERISTICS		TESTING METHOD	SPECIFICATION		RESULTS
USAGE RECOMMENDATION	<b>FIR</b>	Indoor dry residential floors	Manufacturer's recommendation	According to the manufacturer's criteria		FMC FWI WFA
	<b>FLC</b>	Indoor light commercial floors, including the areas FIR				
	<b>FMC</b>	Indoor medium commercial floors, including the areas FLC and FIR				
	<b>FHC</b>	Indoor heavy commercial floors, including the areas FMC, FLC, FIR				
	<b>WID</b>	Indoor dry residential and commercial walls				
	<b>FWI</b>	Indoor wet residential and commercial floors				
	<b>WRC</b>	Indoor and outdoor, wet or dry, residential and commercial walls, including the areas WID. For regions reaching below freezing temperatures, non frost resistant tiles are indoor only.				
	<b>WWS</b>	Swimming pool interior walls, including the areas WRC and WID				
	<b>WFA</b>	External facades, including the areas WRC and WID				
	<b>FHO</b>	Floor - Very Heavy Outdoor Commercial and Outdoor Residential				
	<b>FMO</b>	Floor - Light to Heavy Outdoor Commercial and Outdoor Residential				
	<b>FRH</b>	Floor - Ramp Very Heavy Outdoor Commercial and Outdoor Residential				
	<b>FRM</b>	Floor - Ramp Light to Heavy Outdoor Commercial and Outdoor Residential				
DIMENSIONAL AND SURFACE PROPERTIES	<b>Deviation of W/N:</b>	W - Work size (mm) N - Nominal Size (mm)	ISO 10545-2	ISO 13006:	± 5,00 ± 5,00	± 5,00 ± 5,00
	<b>Deviation of r/W:</b>	r - Average tile size (mm) W - Work size (mm)	ISO 10545-2	ISO 13006:	± 1,80 ± 2,00	± 1,80 ± 2,00
	<b>Rectangularity:</b>	Deviation from W (mm)	ISO 10545-2	ISO 13006:	± 2,00 ± 1,50	± 2,00 ± 1,50
	<b>Straightness of sides:</b>	Deviation from W (mm)	ISO 10545-2	ISO 13006:	± 1,50 ± 1,50	± 1,50 ± 1,50
	<b>Edge curvature:</b>	Deviation from W (mm)	ISO 10545-2	ISO 13006:	± 1,50 ± 2,00	± 1,50 ± 2,00
	<b>Centre Curvature:</b>	Deviation from dW (mm)	ISO 10545-2	ISO 13006:	± 2,00 ± 2,00	± 2,00 ± 2,00
	<b>Warpage:</b>	Deviation from dW (mm)	ISO 10545-2	ISO 13006:	± 2,00 ± 2,00	± 2,00 ± 2,00
	<b>Deviation of e/eW:</b>	e - Average tile thickness (mm) eW - Fabrication thickness (mm)	ISO 10545-2	ISO 13006:	8,08 - 8,92	8,08 - 8,92
<b>Visual Analysis:</b>	Surface Quality (%)	ISO 10545-2	ISO 13006:	≥ 95	≥ 95	

	CHARACTERISTICS		TESTING METHOD	SPECIFICATION		RESULTS	
PHYSICAL PROPERTIES	Water Absorption:	(%)	ISO 10545-3	ISO 13006:	≤ 0,5	≤ 0,50	
	Breaking Strength:	(N)	ISO 10545-4	ISO 13006:	≥ 1300	≥ 1500	
	Modulus of Rupture:	(MPa)	ISO 10545-4	ISO 13006:	≥ 35	≥ 35	
	Moisture Expansion:	(mm/m)	ISO 10545-10	ISO 13006:	≤ 0,6	≤ 0,2	
	Resistance to Cracking:	(Cycles)	ISO 10545-11	ISO 13006:	1	5	
	Coefficient of Restitution			ISO 10545-5	ISO 13006:	≥ 0,55	≥ 0,60
CHEMICAL PROPERTIES	Stain Resistance						
	Penetrating Agent	Green Chrome (40% oil)	ISO 10545-14	ISO 13006:	≥ Class 3	Class 5	
	Layer Forming Agent	Olive Oil					
	Oxidizing Agent	Alcoholic Iodine					
	Chemical Resistance						
	Domestic product	Ammonium Chloride 100g/L	ISO 10545-13	ISO 13006:	≥ GB	GA	
	Pool water treatment	Sodium hypochlorite 20mg			≥ GB	GA	
	Low concentration alkali	Potassium Hydroxide 30g / L	ISO 10545-13	ISO 13006:	To declare	GLB	
	Low concentration acid	Chloridric acid 3% (v/v)			To declare	GLB	
Low concentration acid	Citric Acid 100g/L	To declare			GLB		
DYNAMIC FRICTION COEFFICIENT	Wet Dynamic Friction Coefficient		NBR 16919-	NBR 16919:	≥ 0,40	≥ 0,40	
	Dry Coeficiente of Dynamic Friction		NBR 16919-	NBR 16919:	To declare	≥ 0,50	
PERFORMANCE	Solar Absorbance - α*		NBR 15575 - 3-	NBR 15575:	To declare	0.6 - 0.7	
	Solar Reflectance - ρ*		NBR 15575 - 3-	NBR 15575:	To declare	0.4 - 0.3	
	Solar Deflection - ε*		NBR 15575 - 3-	NBR 15575:	To declare	0.75 - 0.85	
	Solar Reflectance Index - SRI H = 5 (W / m²K)*		NBR 15575 - 3-	NBR 15575:	To declare	65 - 40	
	Impact of Hard Object		NBR 15575 - 3-	NBR 15575:	No Break (5J)	No Break (5J)	
	Moisture Resistance		NBR 15575 - 3-	NBR 15575:	To declare	Resistant	
	Useful life:	(years)	NBR 15575 - 3-	NBR 15575:	20 fachada e 13 outros	20 fachada e 13 outros	
	Flammability		NBR 15575 - 3-	NBR 15575:	Class I	Class I	

**Note:**

Check if the product is suitable for the intended use. When it has the WFA use specification, it can be used in facade, provided that its indication is included in the constructive and executive project, which is the responsibility of the designer, according to the ABNT NBR 13755 standard.

The characteristics defined by the performance standard ABNT NBR 15575 are only applicable to residential areas and are directly related to the performance of the installed product. Therefore, the statements are valid when the installation guidelines described by the manufacturer are followed.

\*According to information in the ANFACER sectorial performance manual



QR WARRANTY CODE:  
Validate this certificate in:



COCAL DO SUL ( SC ), January 03th, 2025

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