



# 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:	AZUL MAR ONDA BR 20X20*	Manufacturing Process:	Wet ceramic process
Code:	8040948	Manufacturing Size:	200,0 x 200,0 mm
Class:	BIII	Nominal Size:	20x20 cm
Typology:	Ceramic wall tile	Thickness:	7,0 mm
Shade Variation:	V1	Coverage Area:	1,48m <sup>2</sup> /box
Grout Joint:	2 mm	Pieces per box:	37,00
Rectified:	No	Surface:	GL ( Glazed )



	CHARACTERISTICS		TESTING METHOD	SPECIFICATION		RESULTS
USAGE RECOMMENDATION	<b>FIR</b>	Indoor dry residential floors	Manufacturer's recommendation	ISO 13006:	± 4,00	WRC WWS
	<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>FFO</b>	Flat outdoor floors				
	<b>FRO</b>	Outdoor inclines and ramps ( maximum slope of 8.33% )				
	<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					
DIMENSIONAL AND SURFACE PROPERTIES	<b>Deviation of W/N:</b>	W - Work size (mm) N - Nominal Size (mm) r - Average tile size (mm)	ISO 10545-2	ISO 13006:	± 4,00	± 4,00
	<b>Deviation of r/W:</b>	W - Work size (mm)	ISO 10545-2	ISO 13006:	± 1,20	± 1,20
	<b>Deviation of e/eW:</b>	e - Average tile thickness (mm) eW - Fabrication thickness (mm)	ISO 10545-2	ISO 13006:	6,50 - 7,50	6,50 - 7,50
	<b>Rectangularity:</b>	Deviation from W (mm)	ISO 10545-2	ISO 13006:	± 1,00	± 1,00
	<b>Straightness of sides:</b>	Deviation from W (mm)	ISO 10545-2	ISO 13006:	± 1,00	± 1,00
	<b>Edge curvature:</b>	Deviation from W (mm)	ISO 10545-2	ISO 13006:	± 1,00	± 1,00
	<b>Centre Curvature:</b>	Deviation from dW (mm)	ISO 10545-2	ISO 13006:	± 1,41	± 1,41
<b>Warpage:</b>	Deviation from dW (mm)	ISO 10545-2	ISO 13006:	± 1,41	± 1,41	
PHYSICAL PROPERTIES	<b>Water Absorption:</b>	(%)	ISO 10545-3	ISO 13006:	> 10,0	≤ 20,0
	<b>Modulus of Rupture:</b>	(MPa)	ISO 10545-4	ISO 13006:	≥ 15	≥ 15
	<b>Breaking Strength:</b>	(N)	ISO 10545-4	ISO 13006:	≥ 200	≥ 300
	<b>Resistance to Cracking:</b>	(Cycles)	ISO 10545-11	ISO 13006:	1	5
	<b>Moisture Expansion:</b>	(mm/m)	ISO 10545-10	ISO 13006:	≤ 0,6	≤ 0,3

	CHARACTERISTICS		TESTING METHOD	SPECIFICATION	RESULTS	
CHEMICAL PROPERTIES	Stain Resistance					
	Penetrating Agent	Green Chrome (40% oil)	ISO 10545-14	ISO 13006:	≥ 3	
	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			A declarar	GLA
	Low concentration acid	Chloridric acid 3% (v/v)			A declarar	GLA
	Low concentration acid	Citric Acid 100g/L			A declarar	GLA
PERFORMANCE	Solar Absortance - α*		NBR 15575 - 3-	NBR 15575:	To declare	0.6 - 0.7
	Solar Deflection - ε*		NBR 15575 - 3-	NBR 15575:	To declare	0.75 - 0.85
	Flammability		NBR 15575 - 3-	NBR 15575:	Class I	Class I
	Solar Reflectance - ρ*		NBR 15575 - 3-	NBR 15575:	To declare	0.4 - 0.3
	Moisture Resistance		NBR 15575 - 3-	NBR 15575:	To declare	Resistant
	Useful life:	(years)	NBR 15575 - 3-	NBR 15575:	20	20
	Solar Reflectance Index - SRI H = 5 (W / m²K)*		NBR 15575 - 3-	NBR 15575:	To declare	65 - 40

**Note:**

Check if the product is suitable for the intended use.

Sand may cause scratches in any type of covering (stone, wood, vinyl or ceramic). For this reason, ceramic tile are not warranted against scratches, specially products with glossy finish. 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.

Negligence towards the recommended use specified in this report, abnormal environmental and climate factors, changes in the work surroundings, will reduce the useful lifetime of the product, which may be shorter than the period declared by the manufacturer.

\* According to information in the ANFACER sectorial performance manual

QR WARRANTY CODE:

Validate this certificate in:



COCAL DO SUL ( SC ), November 02th, 2022

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