

# NATURAL — AIR

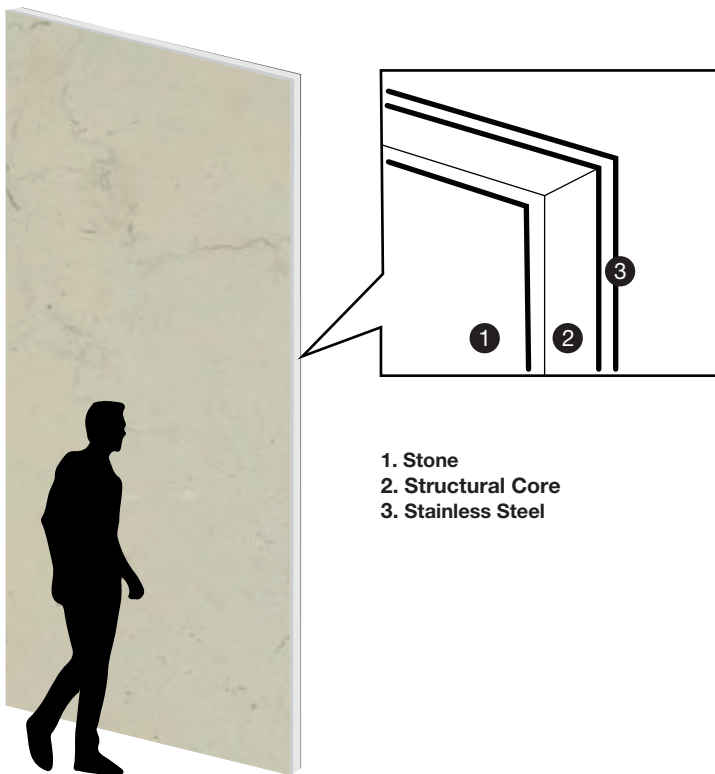
The **GammaStone Natural AIR** solution in natural stone allows the mechanical installation of large sized panels formed with **marble, granite, limestone or travertine**. It can be used to make beams, columns and any other architectural element with a monolithic result, creating the effect of one piece. The available sizes depend on the block size, the maximum dimension is 3200x1500 mm.



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Max panel sizes	Total panel thickness	Stone thickness	Panel weight
3200x1500 mm (4,800 m <sup>2</sup> )	17 mm	5 mm	18 kg/m <sup>2</sup>
3200x1500 mm (4,800 m <sup>2</sup> )	22 mm	10 mm	30 kg/m <sup>2</sup>
3200x1500 mm (4,800 m <sup>2</sup> )	24 mm	12 mm	36 kg/m <sup>2</sup>
126" x 59" (52.42 ft <sup>2</sup> )	≈ 11/16"	≈ 3/16"	3.7 lb/sqft
126" x 59" (52.42 ft <sup>2</sup> )	≈ 7/8"	≈ 3/8"	6.1 lb/sqft
126" x 59" (52.42 ft <sup>2</sup> )	≈ 15/16"	≈ 1/2"	7.4 lb/sqft

## PANEL STRUCTURE



Test	Description	Result
ETAG 004:2013	Heat-Rain 80 cycles	No fault
ETAG 004:2013	Heat-Cold 5 cycles	No fault
UNI EN ISO 10545-8:2014	Determination of linear thermal expansion	6.6* (<0.3 mm/600 mm)
UNI EN 772-14:2003	Determination of moisture movement	0.4 mm/m
UNI 9177:2008 UNI 8457:2010 UNI 9174:2010	Reaction to fire	Classe 1
UNI EN 13501-1:2009 UNI EN 13823:2010 UNI EN ISO 11925-2:2005	Fire classification	B - s1, d0
UNI EN ISO 10545-4:2012	Determination of modulus of rupture and breaking strength	2.8± 0.3 N/mm <sup>2</sup>
UNI EN ISO 10545-4:2012	Breaking strength Heat-Rain 80 cycles + Heat-Cold 5 cycles	5.0± 0.5 N/mm <sup>2</sup>
Rif. Test Certimac POI	Determination of bond strength by pull-off	1.15 ± 0.26 N/mm <sup>2</sup>
Rif. Test Certimac POI	Bond strength after Heat-Rain 80 cycles + Heat-Cold 5 cycles	1.01 ± 0.31 N/mm <sup>2</sup>
Rif. Test Certimac POI	Limit of detachment after water immersion (21 days)	0.27 ± 0.17 N/mm <sup>2</sup>
UNI EN ISO 10545-3:2000	Determination of water absorption	6%*
UNI EN ISO 10545-9:2013	Determination of resistance to thermal shock	No fault
UNI EN ISO 10545-12:2000	Determination of frost resistance	No fault
ETAG 034-1:2012	Wind depression load resistance	4610 Pa
UNI EN 12664:2002	Determination of thermal conductivity	0.157 ÷ 0.170 W/mK
ASTM E 84 (UL 723)	Surface burning characteristics	Class A
ASTM E 136	Behavior of materials at 750°C (1382°F)	Non-combustible
CAN/ULC-S114 ASTM E1530:2006	Test for Non-Combustibility	Non-combustible
NFPA 285	Fire test	Passed
BS8414-1	Fire test	Passed
MED 2014/90/EU	Determination of calorific value	Passed
MED 2014/90/EU	Determination of the limited ability to propagate the flame	Passed

\* It depends on the type of natural stone, the lower value refers to the Travertine, the highest value is for Sandstone.  
The results are based on tests made on a GammaStone Natural AIR panel in Sandstone sawn finish, untreated.

<b>ASTM C393/C393M-16</b>	Core Shear Properties (Negative Windload - Machine Direction)	102,4 psi
	Core Shear Properties (Positive Windload)	18,7 psi
	Core Shear Properties (Negative Windload - Crosswise Direction)	100,2 psi
<b>ASTM C272/C272M-18</b>	Water Absorption of Core Materials	6,143 ibm/ft <sup>3</sup>
<b>ASTM C297/C297M-16</b>	Flatwise Tensile Bond Strength Evaluation (Fiberglass Mesh)	359 psi
	Flatwise Tensile Bond Strength Evaluation (Foam Core)	190 psi
	Flatwise Tensile Bond Strength Evaluation (Steel)	57,6 psi
<b>ASTM C880/C880M-18</b>	Flexural Strength Evaluation (Negative Windload - Dry Condition) Initial Failure	1.043 psi
	Flexural Strength Evaluation (Negative Windload - Dry Condition) Ultimate Failure	2.932 psi
	Flexural Strength Evaluation (Positive Windload - Dry Condition)	2.787 psi
	Flexural Strength Evaluation (Negative Windload - Wet Condition)	891 psi
	Flexural Strength Evaluation (Positive Windload - Wet Condition)	2.903 psi
<b>ASTM C482-02</b>	Bond Strength Mitered Corner Joint Assembly Shear Loading Evaluation	992,4 lb <sub>f</sub>
<b>AS/NZS 1530</b>	Determination of ignitability, flame-propagation, heat release and smoke release	Ignitability 0
		Spread of flame 0
		Heat Evolved 0
		Smoke developed 0-1

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**Dimensional deviations**

(sizes in mm)

Up to 1.000	More than 1.000 Up to 2.000	More than 2.000 Up to 4.000
± 1	± 1.5	± 2

**Dimensional deviations of monolithic assembled returns**

(sizes in mm per each assembled return)

Up to 500	More than 500 Up to 1.000	More than 1.000 Up to 2.000
-1 +2	-1 +2.5	-1.5 +3

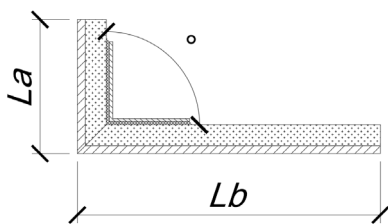
(sizes in mm per double assembled returns)

Up to 500	More than 500 Up to 1.000	More than 1.000 Up to 2.000
-1 +3	-1 +3.5	-1.5 +4

**Edge tolerances for monolithic assembled returns**

Limit deviations refer to the total length in mm of the panels on the sides of the return

L Up to 500	L More than 500 Up to 1000	L More than 1000
± 1°	± 0°30'	± 0°20'



$$L = La + Lb$$

**Edges for monolithic assembled returns**

Dimension of the bevel or radius of the monolithic edge

Natural Stones	Max 5 mm
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**Thickness**

The thickness tolerance of the Air Panel is strictly linked to the material used because it is determined by the sum of the stone tolerance + the tolerance of the AIR panel laminated to the slab of stone.

Material Thickness deviation (mm)			Maximum Thickness deviation of AIR Panel (Σ Deviation in mm)
Natural Stone	tsn	Variable <sup>2</sup>	tss+tsn

<sup>2</sup> Depends on the type of natural stone selected

**Deviation from the diagonals of the single non assembled panels**

Diagonal Dimension D1	Difference with Diagonal D2
Up to 1000 mm	2 mm
Between 1000 and 2000 mm	3 mm
Above 2000 mm	5 mm

**ATTENTION:** Deviating from the above specifications requires written agreement between both parties.