

## Test Report N. 4015 /EL MI18

**Spett.le**  
IRIS CERAMICA GROUP SPA  
VIA CANALINO 16  
41121 MODENA (MO)

Modena 12/11/2018

<b>Receipt N.:</b> 4.015/EL MI	<b>Date of receipt :</b> 15/10/18	<b>Analysis start date:</b> 23/10/18	<b>Analysis end date:</b> 29/10/18
<b>Material:</b>	Ceramics materials		
<b>Product:</b>	Ceramic tile		
<b>Sample:</b>	CALACATTA SL ACTIVE 2.0 - 300 x 150 cm - 6mm Test information: -treated specimens : 50 x 50 mm square, 6 mm thickness; -not-treated specimens : 50 x 50 mm square, 6 mm thickness; -all specimens are rinsed with distilled water and autoclaved at 121°C for 30 minutes before the test; -fluorescent UV lamp : mercury-vapor lamp 18 W (PHILIPS PL-L 18W/10/4P); -ultraviolet light radiometer : DELTA OHM model HD2102.2 - serial number 10008472 model probe : LP471 UVA; -UV irradiation intensity : 0.25mW/cm2 - time exposure : 8h; -test bacteria : Serratia marcescens ATCC 13880; -inoculated test bacteria suspension : 0.15 ml; -adhesive film : polypropylene film 40 x 40 mm square - transparency rate = 85% for 340-380 nm range; -moisture preservation glass : borosilicate glass 1.1 mm thickness BOROFLOAT SHOTT		
<b>Sampling:</b>	made by customer		
<b>Date of sampling:</b>	15/10/18		

Test	Method	UM	Result
Photocatalytic antibacterial activity - Serratia marcescens ATCC 13880*	ISO 27447:2009 - Film adhesion method		
<i>N. bacteria inoculated*</i>		cells/ml	<b>1.500.000</b>
<i>A - average number of bacteria non-treated specimens*</i>		cells/ml	<b>190.000</b>
<i>BL - average number of bacteria non treated after UV irradiation*</i>		cells/ml	<b>89.000</b>
<i>CL - average number of bacteria photocatalytic treated specimens after UV irradiation*</i>		cells/ml	<b>&lt;10</b>
<i>RL - photocatalytic antibacterial activity after UV irradiation*</i>		Log10	<b>4,0</b>
<i>RL - photocatalytic antibacterial activity after UV irradiation*</i>		%	<b>99,99</b>

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Test	Method	UM	Result
<i>BD - average number of bacteria non-treated specimens after dark treatment*</i>		cells/ml	<b>77.000</b>
<i>CD - Average number of bacteria photocatalytic specimens after dark treatment*</i>		cells/ml	<b>&lt;10</b>
<i>Delta R - photocatalytic antibacterial activity value with UV irradiation*</i>		Log10	<b>0,1</b>

**NOTE :**

the test assesses the survival of bacteria type *Serratia marcescens* ATCC 13880, on the surface of CALACATTA SL 300 X 150 cm ACTIVE 2.0, subjected to UV radiation for 8h. Under test condition specified in the description sample, the bacterial reduction is equal to 99.99%.

**TECHNICAL MANAGER**

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Sez.A

U: expanded uncertainty associated with single measurement (P = 95 % - K = 2) - LD: Detection limit (the lowest concentration of analyte detectable) - LQ : Limit of Quantification ( the lowest concentration of analyte detected with acceptable precision and accuracy) - R% Recovery % . U - R% - LQ - LD are indicated if required by the Customer .

[\*] Testing non-accredited ACCREDIA - PNN : internal method - [\*\*] Subcontracted test - Temporary test report: test report in which some test are not completed, issued for internal use by the Customer, to be replaced with the official test report, just available. If the test report is digitally signed, the integrity of the document can be confirmed by checking the validity of the digital signature within the file.

Reference standards for microbiological food : UNI EN ISO 7218:2013/Cor.1:2014 (counting in single dish and two consecutive dilutions ) waters : ISO 8199:2005; (results expressed with < 4ufc/ml and < 40ufc / g indicate that microorganisms are present but less than the value expressed ; for values between 4-10 cfu / ml , 4-10 ufc/100ml , 40-100 cfu / g the number of microorganisms is estimated) .

Declarations of conformity: take into account the measurement uncertainty as indicated by the laws and regulations in force, by applying the rules relating to rounding of the figures

. Notes provided are not subject to accreditation.

This Test Report refers only to the sample tested; the name and description of the sample are declared by the Customer . This test report may only be reproduced in full; partial reproduction must be authorized with written approval by the Laboratory .

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