

Test Report N. 4450 /EL MI18

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

Modena 23/11/2018

Receipt N.: 4.450/EL MI	Date of receipt : 06/11/18	Analysis start date: 16/11/18	Analysis end date: 20/11/18
Material:	Ceramics materials		
Product:	Ceramic tile		
Sample:	CALACATTA SL ACTIVE 2.0 - 300 x 150 cm - 6mm Test information: - the method PNN -100 is in conformity with ISO 27447:2009 excluding point 7.5: characteristics of light source - 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 - characteristics of lighth source : LED LAMP OOSL S02-C36095 - round plate 22V - 11W - 144 led 4000K - OSRAM - radiometer DELTA OHM - model HD2102.2 - serial number : 10008472 - model probe: LP471 PHOT - time exposure: 8h - irradiation intensity: 1000 LUX - inoculated test bacteria suspension : 0.15 ul - test bacteria : Serratia marcescens ATCC 13880 - adhesive film : polypropylene film 40 x 40 mm square - transparency rate = 85% for visible Range		
Sampling:	made by customer		
Date of sampling:	06/11/18		

Test	Method	UM	Result
Antibacterial activity of photocatalytic materials - Serratia marcescens ATCC 13880*	PNN-100 2010 Rev.0 (Ref. ISO 27447:2009 excluding point 7.5 : characteristics of light source)		
<i>N. bacteria inoculated*</i>		cells/ml	1.900.000
<i>A - average number of bacteria non-treated specimens*</i>		cells/ml	250.000
<i>BL - average number of bacteria non-treated specimens after LED light irradiation*</i>		cells/ml	280.000
<i>CL - average number of bacteria photocatalytic treated specimens after LED light irradiation*</i>		cells/ml	<10
<i>RL - photocatalytic antibacterial activity after LED light irradiation*</i>		Log10	4,5

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Test	Method	UM	Result
<i>RL - photocatalytic antibacterial activity after LED light irradiation*</i>		%	99,99
<i>BD - Average number of bacteria non treated specimens after dark treatment*</i>		cells/ml	320.000
<i>CD - average number of bacteria non-treated specimens after dark treatment*</i>		cells/ml	<10
<i>CD - average number of bacteria photocatalytic specimens after dark treatment*</i>		cells/ml	<10
<i>Delta R - Difference between photocatalytic specimens after irradiation and dark treatment*</i>		Log10	0,0

NOTE :

the test assesses the survival of bacteria type *Serratia marcescens* ATCC 13880, on the surface of CALACATTA SL ACTIVE 2.0 - 300 x 150 cm - 6mm subjected to LED light 1000 LUX 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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