

Test Report N. 4512 /EL MI17

Spett.le
GRANITI FIANDRE S.p.A.
VIA RADICI NORD 112
42014 CASTELLARANO (MO)

Modena 11/12/2017

Receipt N.: 4.512/EL MI	Date of receipt : 08/11/17	Analysis start date: 08/11/17	Analysis end date: 22/11/17
Material:	Ceramics materials		
Product:	Ceramic tile		
Sample:	CALACATTA SL 300 x 150 cm ACTIVE 2.0 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 : Escherichia coli ATCC 8739 ; -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		
Sampling:	made by customer		
Date of sampling:	08/11/17		

Test	Method	UM	Result
Antibacterial activity of photocatalytic materials - E. coli ATCC 8739*	ISO 27447:2009 - Film adhesion method		
<i>N. bacteria inoculated*</i>		cells/ml	1.500.000
<i>A - average number of bacteria non-treated specimens after inoculation*</i>		cells/ml	240.000
<i>BL - average number of bacteria non-treated specimens, after UV irradiation*</i>		cells/ml	250.000
<i>CL - average number of bacteria photocatalytic treated specimens after UV irradiation*</i>		cells/ml	10
<i>RL - photocatalytic antibacterial activity after UV irradiation*</i>		Log10	4,4

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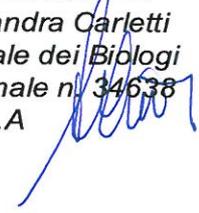
Test	Method	UM	Result
Reduction of bacteria from non-treated specimens after UV irradiation*		%	99,99
BD - average number of bacteria non-treated specimens after dark treatment*		cells/ml	260.000
CD - average number of bacteria photocatalytic treated specimens after dark treatment*		cells/ml	10
Delta R - photocatalytic antibacterial activity value with UV irradiation*		Log10	0,0

NOTE :

the test assesses the survival of bacteria type Escherichia coli ATCC 8739, 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 . PNN : internal method - [*] Subcontracted test
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)
Results of tests with the legal limits are evaluated taking into account the value of the uncertainty and the rules relating to rounding .
Results of tests with the reference values defined by the Customer shall be assessed taking into account the value of the uncertainty only if requested by the Customer. Non-compliant results are given if requested by the Customer.
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 . 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.
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