

## Test Report N. 6196 /EL MI

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

Modena 28/10/2015

<b>Receipt N.:</b> 6.196/EL MI	<b>Date of receipt :</b> 16/10/15	<b>Analysis start date:</b> 16/10/15	<b>Analysis end date:</b> 23/10/15
<b>Material:</b>	Ceramics materials		
<b>Product:</b>	Ceramic tile		
<b>Sample:</b>	CALACATTA ACTIVE 300x150 cm		
<b>Sampling:</b>	Test information: - treated and 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 analysis; - 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/cm <sup>2</sup> - time exposure : 8h - 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>Date of sampling:</b>	made by customer 16/10/15		

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	<b>1.900.000</b>
<i>A - average number of bacteria non-treated specimens after inoculation*</i>		cells/ml	<b>280.000</b>
<i>BL - average number of bacteria non-treated specimens, after UV irradiation*</i>		cells/ml	<b>120.000</b>
<i>CL - average number of bacteria photocatalytic treated specimens after UV irradiation*</i>		cells/ml	<b>10</b>
<i>RL - photocatalytic antibacterial activity after UV irradiation*</i>		Log10	<b>4,1</b>
<i>Reduction of bacteria from non-treated specimens 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>220.000</b>
<i>CD - average number of bacteria photocatalytic treated specimens after dark treatment*</i>		cells/ml	<b>180.000</b>
<i>Delta R - photocatalytic antibacterial activity value with UV irradiation*</i>		Log10	<b>4,0</b>

**NOTE:**

the test assesses the survival of bacteria type E. coli ATCC 8739 on the surface of CALACATTA ACTIVE 300x150cm, subjected to 0.25mW/cm2 (2.5W/m2) 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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Albo professionale n. 34638  
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.  
Reference standards for microbiological food : ISO 7218:2013 (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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