

Test Report N. 2609/EL MI

Test method : ISO 27447: 2009

“Fine ceramics (advanced ceramics, advanced technical ceramics)

Test method for antibacterial activity of semiconducting photocatalytic materials“

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Receipt N.: 2.609/EL MI	Date of receipt: 01/07/10	Analysis start date: 02/07/10	Analysis end date: 03/09/10
Material:	CERAMICS MATERIALS		
Product:	ceramic tile		
Sample:	WHITE GROUND Naturale 60 x 30		
	Test information:		
	- treated and not-treated specimens : 50 x 50 mm square, 9 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/cm2 – 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		
Sampling:	made by customer		
Date of sampling:	24/06/10		

Test	Method	UM	Result
Antibacterial activity of photocatalytic materials - <i>E. coli</i> ATCC 8739*	ISO 27477: 2009 – Film adhesion method		
N. bacteria inoculated*		cells	1.055.000
A – average number of bacteria non-treated specimens after inoculation*		cells/ml	155.000
BL - average number of bacteria non-treated specimens after UV irradiation*		cells/ml	169.000
CL - average number of bacteria photocatalytic treated specimens after UV irradiation*		cells/ml	10
RL – Photocatalytic antibacterial activity value after UV irradiation*		Log10	4,2

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Reductions of bacteria from non-treated specimens after UV irradiation*	%	99,99
BD - average number of bacteria non-treated specimens after being kept in a dark place*	cells/ml	603.000
CD - average number of bacteria photocatalytic treated specimens after being kept in a dark place*	cells/ml	127.000
Delta R – Photocatalytic antibacterial activity value with UV irradiation*	Log10	3,6

NOTE:

the test assesses the survival of bacteria type *E. coli* ATCC 8739 on the surface of WHITE GROUND Naturale 60 x 30, subjected to 0.25 mW/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

Alessandra Carletti

LABORATORY MANAGER

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(*) Analysis not accredited by ACCREDIA >>> PNN: Internal method

Microbiological results are in accordance with ISO 7818:2007.

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