Laboratorio 3A SAS di Cerchiari Manuele & C.

AGRICOLTURA ALIMENTAZIONE AMBIENTE

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TEST REPORT

n° 2201M/25 22/01/2025

CLIENT	Graniti Fiandre S.p.A. Via Radici Nord 112 - 42014 Castellarano (RE)
TEST MATERIAL	**Piastrella ceramica 50x50x12mm** *(cleaned by wiping with 70% ethanol)* **Untreated test:** borosilicate glass **Treated test**: UNI ICE Active Surfaces, 320x160 cm, 12 mm
BACTERIAL STRAIN	Staphylococcus aureus ATCC 6538P
INOCULUM	150 µl 1,5 x 10^6 ufc/ml
LIGHT SOURCE	Philips TL 8W BLB 1FM/10X25CC
RADIOMETER	VOLTCRAFT UV-500 Prod.n. VC-8330305
EXPOSURE CONDITIONS	Time: 8h Temperature: 25°C Intensity: 0,25 mW/cm^2
FILM	Polietilene 40x40mm – Transparency >85% tra 340nm e 380 nm
COVER GLASS	borosilicate glass Ø100mm x 1,1mm – Transparency >85% tra 340nm e 380 nm
SAMPLE RECEIVED DATE	13/12/2024
SAMPLE TESTED DATE	16/01/2025 – 20/01/2025

TEST RESULT

Antibacterial activity of semiconducting photocatalytic materials
ISO 27447:2019 – Film cover method

A average number of viable bacteria of non-treated specimens, just after inoculation	1.0 x 10^5 ufc	
B_L average number of viable bacteria of non-treated specimens, after UV irradiation	1.8 x 10^5 ufc	
C_L average number of viable bacteria of photocatalytic treated specimens, after UV irradiation	2.5 x 10^3 ufc	
R_L Log (B_L/C_L) = photocatalyst antibacterial activity value, after UV irradiation	**1.87**	**98.7%**
B_D average number of viable bacteria of non-treated specimens, after being kept in a dark place	1.1 x 10^6 ufc	
C_D average number of viable bacteria of treated specimens, after being kept in a dark place	1.1 x 10^5 ufc	
R_D Log (B_D/C_D) = antibacterial activity value in a dark place	**1.01**	**90.3%**
ΔR Log (B_L/C_L) - Log (B_D/C_D) = photocatalyst antibacterial activity value with UV irradiation	**0.86**	**86.1%**

Laboratory Director

Chim. Dott. Manuele Cerchiari