UNIVERSITÀ DEGLI STUDI DI MILANO
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Test report N. 1/18

Test: degradation of NO on **Calacatta SL Active 2.0 large slab** using norm ISO 22197-1

**ISO 22197-1 Fine ceramics (advanced ceramics, advanced technical ceramics) -- Test method for air-purification performance of semiconducting photocatalytic materials -- Part 1: Removal of nitric oxide**

Milan, 28/09/2018

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|---|---|
| Date of receipt | 17/07/2018 |
| Analysis start date | 18/07/2018 |
| Analysis end date | 20/07/2018 |
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| Material | Ceramic Materials |
| Product | Ceramic slabs in porcelain gres |
| Sample | **Calacatta SL Active 2.0 - 6mm – 300x150 cm** |
| Test information | • Determination of the photocatalytic activity with the continuous flow method – removal of nitric oxide (NO) **ISO 22197-1**.<br>• Tested sample: collected and cut in a 5x10 cm sample from an original slab, intact in all its parts, randomly chosen from a production batch.<br>• Pre-treatment methods: in accordance with ISO 22197-1, the sample was UV-A irradiated for 6 hours and then immersion in deionized water for 2 hours.<br>• Light source: UV-A Jelosil 500, intensity 1.0 $mW/cm^{2.}$<br>• Exposure time: 6 h.<br>• Initial concentration of NOx: 1000 ± 5 ppb in synthetic air.<br>• Radiometer: HD2102.02 Delta Ohm.<br>• Analytical method: chemiluminescence |

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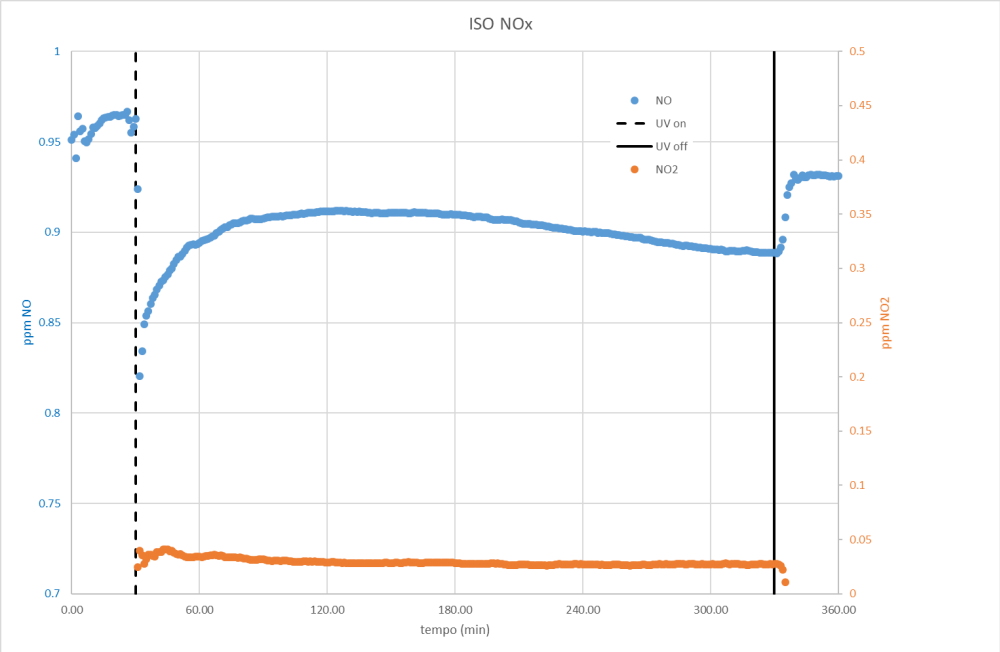
| | (SERINUS 40, Ecotech, ID Serial N° 14 - 0325).<br>• Reactor: as requested.<br>• Fan: EBMPAPST – 612JH; nominal power: 12V; nominal speed: 11700 rpm.<br>• Gas Flow F=3 $dm^3min^{-1}$<br>• Internal temperature: 25°C<br>• Humidity: 50%<br>• Time between the UV lamp ignition and the start of concentration recording: 0" (immediate reading in real time). |

**Result:**




Considering the results obtained, it is possible to calculate, by numerical integration, that **the Calacatta SL Active 2.0 - 300x150 cm sample degrades 2.4 mg of NO per square meter of material** for each hour of work.
The sample did not absorb or desorb NO or $NO_2$ during the test, so the above value refers to the amount of pollutant actually degraded.

The scientific manager

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