**Bios Ceramics®: stoneware at the service of hygiene and the environment**

Today more than ever before, it’s necessary to pay close attention to the healthiness and **hygiene of living spaces**: maintaining scrupulous hygiene and living in a clean environment are **essential for the health** and sustainability of our society.

The home is the place we spend most of our time cooking, working and sleeping, so it requires particular care and attention: to improve the quality of life in enclosed spaces, close attention must also be paid to our choice of **porcelain stoneware floor** and **wall coverings**.

**Bioactive ceramics**

**Bioactive ceramics** are an innovative type of environmentally friendly product that autonomously interacts with the environment to spark a series of chemical and biological reactions capable of bringing down **bacteria levels**, pollutants and traces of dirt or impurities on the tiles.

These porcelain stoneware tiles are able to contribute to improving the quality of the indoor or outdoor micro-environment where they are situated, and are the fruit of a long, exciting period of research.

**The science behind bioactive ceramics**

**Bioactive ceramics** are the result of a series of scientific discoveries made since the start of the **1960s**. The most important of all was made by the University of Tokyo in the field of photocatalytic reactions.

The “Fujishima-Honda” reaction – named after the researchers who discovered it – occurs when a TiO2 rutile crystal and a fragment of platinum are immersed in water and then exposed to light. The reaction sparks the oxidation of the TiO2 rutile, thus releasing oxygen and hydrogen, gases that have been shown to react with and destroy almost all organic compounds. And all thanks to water and sunlight.

**Bios Antibacterial® and Bios Self-Cleaning®**

After years of experimentation and research, Casalgrande Padana decided to create the [**Bios Ceramics®**](https://www.casalgrandepadana.com/en/solutions/bios-ceramics/) brand, which includes two types of products: **self-cleaning bioactive ceramics** ([**Bios Self-Cleaning®**](https://www.casalgrandepadana.com/en/technology/self-cleaning/)) and **anti-bacterial ceramics** ([**Bios Antibacterial®**](https://www.casalgrandepadana.it/it/tecnologia/antibacterial/)).

[**Bios Self-Cleaning**](https://www.casalgrandepadana.com/en/technology/self-cleaning/)**®** is an innovative solution devised and designed for façade **cladding**, able to enhance building shells with excellent **self-cleaning** performance and an impressive **ability to remove pollutants**: in the presence of sunlight, **Bios Self-Cleaning®** triggers a reaction able to destroy not only bacteria, but above all pollutants present in the air and to break down the dirt that settles on **tile** surfaces, so that it can then be removed by rainwater thanks to the ultra-hydrophilic properties of the ceramic surface.

There are a vast array of possible applications and many structures and architectural projects, all over the world, for which **porcelain stoneware tiles** equipped with **Bios Self-Cleaning®** technology can be used for **façade cladding.**



*Sapphire Berlin – Façade cladding: Fractile Bios Self-Cleaning®*



*Sapphire Berlin – Façade cladding: Fractile Bios Self-Cleaning®*

[**Bios Antibacterial®**](https://www.casalgrandepadana.it/it/tecnologia/antibacterial/) is highly effective, because it is able to destroy 99.9% of the four main **strains of bacteria** present in confined environments: *Staphylococcus aureus, Enterococcus faecalis, Escherichia coli, Pseudomonas aeruginosa.*

The **anti-bacterial properties** of **Bios Antibacterial®** make these tiles the ideal choice for floor and wall coverings in settings where hygiene is of primary importance, such as **clinics**, **hospitals** and various types of medical practice, as well as supermarkets, swimming pools and private homes, and in all areas of healthcare, civil and industrial architecture.



*Khartoum, Sudan: Salam Cardiology Centre*

*Flooring and wall coverings: Technic Nebraska Bios Antibacterial*



*Khartoum, Sudan: Salam Cardiology Centre*

*Flooring and wall coverings: Technic Nebraska Bios Antibacterial*



*“Stefano Ferrari” Centre for Regenerative Medicine, Modena*



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*“Stefano Ferrari” Centre for Regenerative Medicine, Modena*



*“Stefano Ferrari” Centre for Regenerative Medicine, Modena*



*Multiplexe Aquatique du Saint Gilles Croix de Vie – Flooring:* [*Landscape*](https://www.casalgrandepadana.it/it/prodotto/landscape/) *Tundra and Ocean*



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**Maximum hygiene in the home**

Suitable for any environment, both indoors and outdoors, and able to destroy the four main strains of bacteria, **Bios Antibacterial®** also combats unpleasant odours, making it perfect for every room in the house, from the **bathroom** to the **kitchen**, where, thanks to the **large** **low-thickness tiles**, it can also be used for worktops or as a covering material for tables and wall units.

In addition, the benefits are even more impressive in the presence of humidity, a traditionally fertile environment for **bacteria**. In **swimming pools** and outdoor areas, **Bios Antibacterial® technology** can destroy bacteria and combat mould, yeast and fungi.



*Worktop made from Marmoker Statuario Grigio*



*Flooring: Onice Ghiaccio – Wall covering: Onice Quarzo*





*Flooring: Pietra Baugè Beige*