

LIGHT WORKS

HT coating



DEUTSCHE STEINZEUG  **AGROB BUCHTAL**

Jasba 



Healthy room climate – more important than ever!

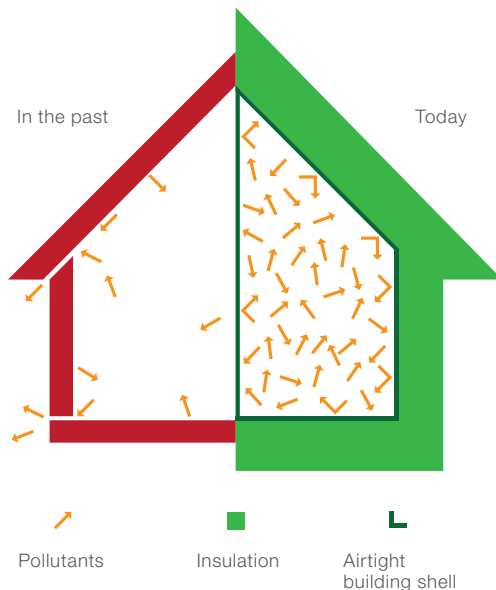
As we spend 90% of our life indoors (source: Sentinel Haus Institut 2014), it is important to be able to rely on a healthy living environment. The HT coating (Hydrophilic Tile) offered by Deutsche Steinzeug makes a significant contribution to healthy living environments:

- **It impedes growth by mould, bacteria and other microorganisms.**
- **It facilitates cleaning of the surface.**
- **It helps to decompose pollutants in the air such as formaldehyde and indoor odours.**

And all of this simply through the effects of light!

Titanium dioxide (TiO₂) is burned insolubly and permanently into the ceramic surface at a high temperature. As a permanent catalyst, it triggers a practically life-long reaction activated by light (photocatalysis) with oxygen and humidity. This gives rise to activated oxygen and a hydrophilic, water-friendly ceramic surface.

Commitments to energy-efficient buildings have led to increasingly dense building shells in the past few years, preventing odours and pollutants from dissipating outwards. While planning and designing interior areas, the aim is therefore to avoid substances which are harmful to health and make intelligent selections with regard to the materials used indoors. But building materials are not the only culprits when it comes to indoor air pollution. Floor coverings, installation materials and furniture can also be responsible for increasing concentrations of volatile organic compounds (VOC) in hermetically sealed buildings. Architects and planners can counteract these side effects using HT.



GUT GleisUnterhaltungsTechnik GmbH administrative building, Bebra, Germany / Architect: GUT GleisUnterhaltungsTechnik GmbH



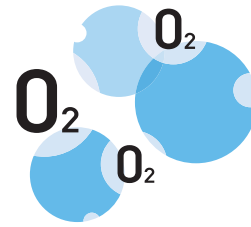
Sanitary area, Woy Woy Leisure Center in New South Wales, Australia / Architect: Michael Davis Associates, New South Wales, Australia



This impressive effect is documented in a film. Simply follow the QR code. www.clean-air-ceramics.com/antibac



HT – **effective** against mould and bacteria.



Ceramic tiles are already recommended even without this special coating – after all, their smooth surface structure prevents permanent infiltration by house dust mites, for example, which can trigger allergic reactions among people. According to tests by independent institutes, bacteria and mould are destroyed and new growth effectively impeded simply through contact with the HT surface.

Active against microorganisms

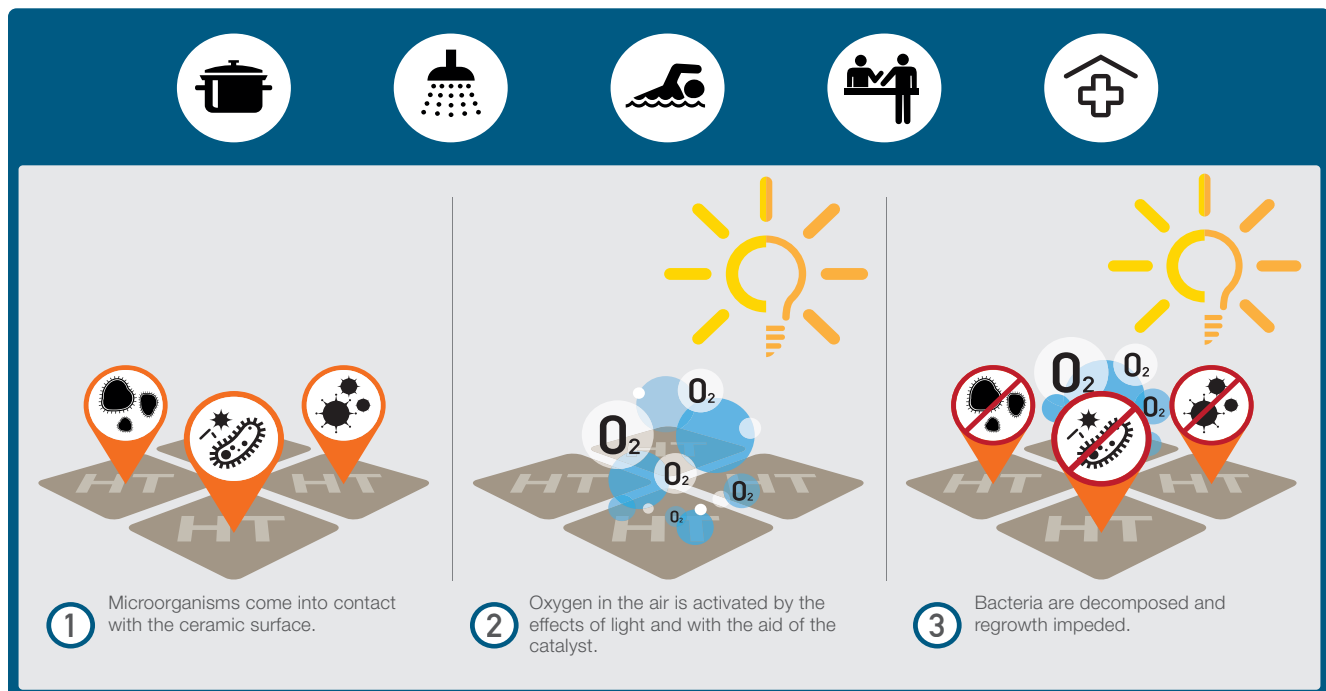
HT activates oxygen in the air in a photocatalytic process which decomposes microorganisms such as bacteria, fungus and germs. At the same time, new growth is effectively impeded, whereby HT is entirely non-toxic and free of irritants. This innovative technology therefore sets entirely new standards wherever particular cleanliness and hygiene are paramount inside a building.

Long-term effect

Thanks to innovative HT technology, all of this works entirely without additional chemicals or any health risks for people. Furthermore, the effect is permanent as the natural catalyst is burned firmly into the tile glaze. Accordingly, the antibacterial effect does not diminish but is rather retained over the entire service life of the ceramic. Hygienic cleanliness in all areas of application: HT-coated ceramic tiles make a valuable contribution towards naturally hygienic interior areas.

Light works

On contact with the HT ceramic surface, up to 99% of bacteria are destroyed (under test conditions by Dr. Ralph Derra, ISEGA Forschungs- und Untersuchungsgesellschaft mbH, Aschaffenburg).



➔ Renowned test institutes confirm these effects.
See page 11.

HT – extremely **easy to clean.** Water on board.



HT-coated tiles are particularly easy to clean as their surfaces are especially hydrophilic (literally: water-receptive). As a result, water does not form droplets or balls which ineffectively pearl off or dry leaving unattractive marks but rather a wafer-thin film is formed.

Active against dirt

This water film ensures that even the tiniest particles of dirt and stubborn residue such as grease which is difficult to remove under normal conditions are thoroughly infiltrated, detaching them from the surface and enabling them to be simply wiped off. The result is a perfectly clean surface at all times.

Dual competence

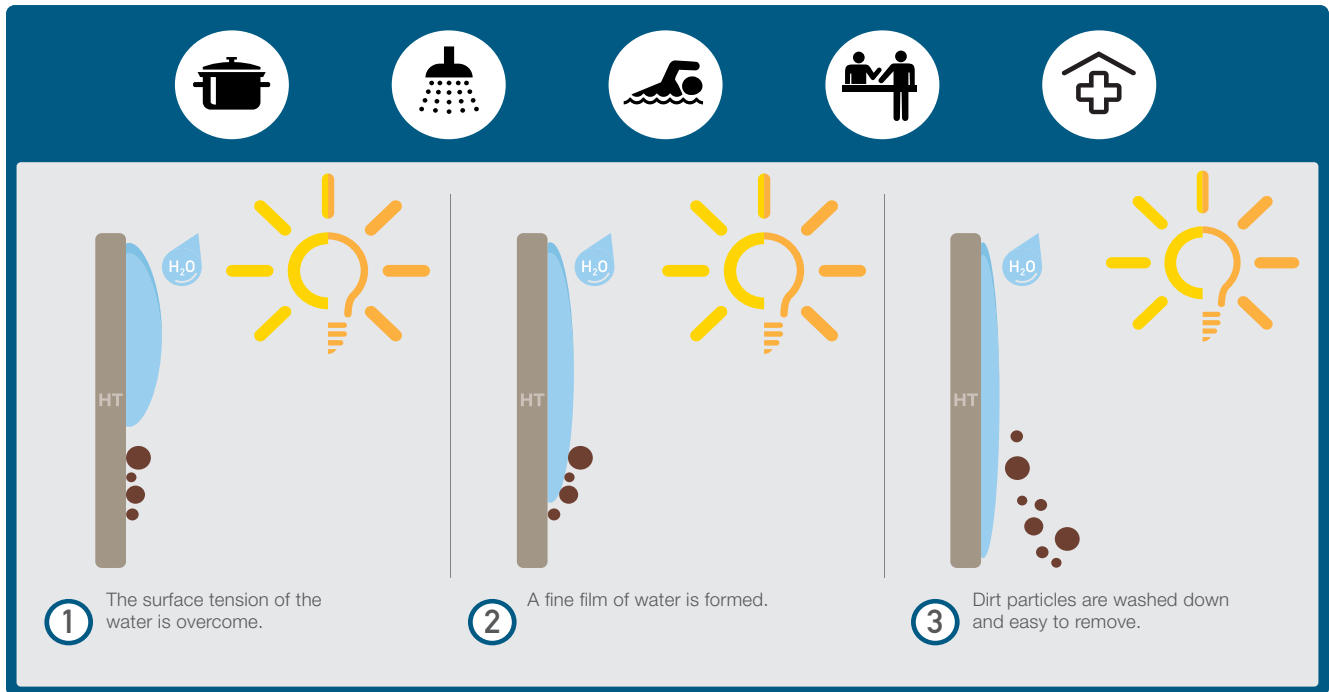
The revolutionary HT coating not only saves a great deal of time when cleaning floors and walls but also drastically reduces the volume of chemical cleaning agents required – representing a bonus for man and the environment. HT-coated tiles therefore make another extremely effective contribution towards sustainable building!

50% more economical

HT reduces the exposure times of chemical cleaning agents and cuts consumption thereof by half. With the result that relevant cost savings can be realised by the operator.

Aquarama, Kristiansand, Norway / Architect:
Asplan Viak AS Vestre Standgate, Kristiansand, Norway





➔ Renowned test institutes confirm these effects.
See page 11.



A film demonstrates exactly how this works.
Simply follow the QR code.
www.clean-air-ceramics.com/clean





HT – productive **feel-good environment.** Health in the workplace.

Unpleasant odours from the canteen? Or even pollutants such as formaldehyde or nitric oxides? HT is an appropriate tool to combat this. After all, the activated oxygen arising from the photocatalytical process on the surface of the HT-coated tiles also decomposes these volatile components of room air. The result: clean air! This is not only convenient in sanitary facilities and kitchen areas but also permits optimum working methods throughout the building, thereby representing an additional increase in productivity.

The air is clear

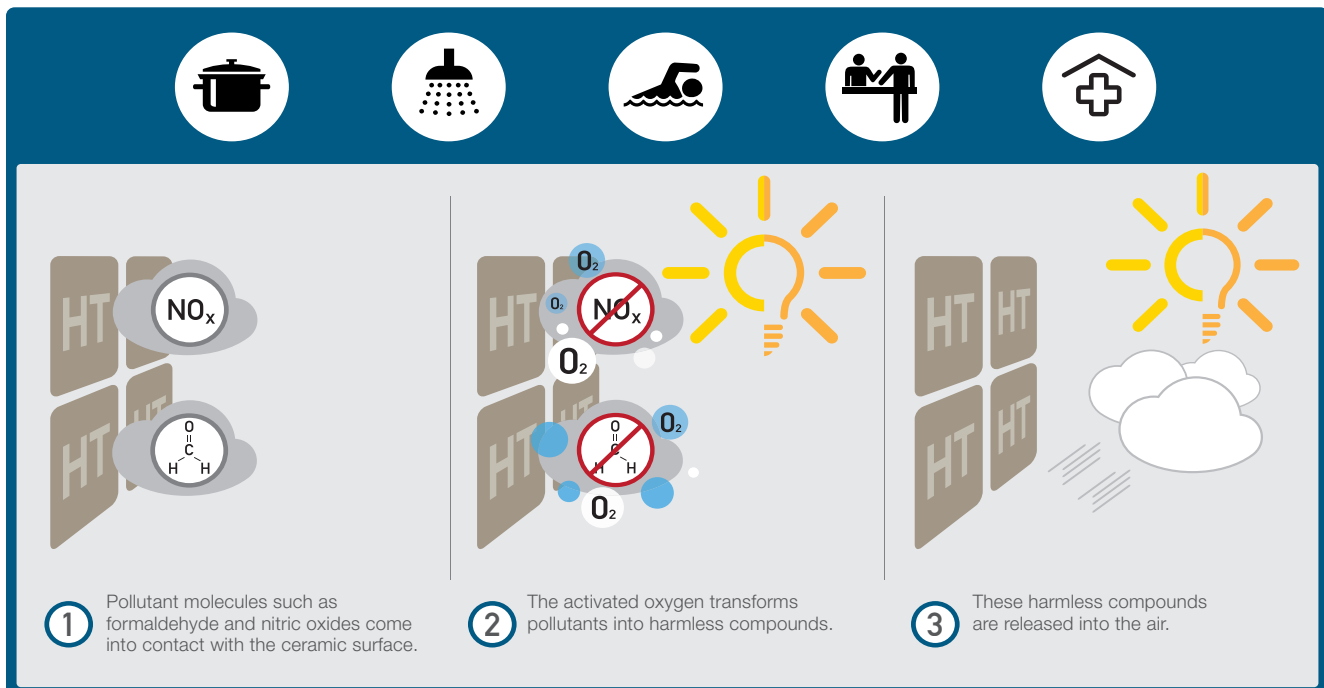
Even uncoated tiles are distinguished as particularly pleasant floor and wall coverings as their mineral nature means that they dissipate practically no emissions into their surroundings. But here too, HT demonstrates what else is possible! As HT-coated tiles even clean the surrounding indoor air of pollutants such as nitric oxides or formaldehydes right through to tobacco smoke.

Active air cleaning

The photocatalytical process acts like an air freshener here: when pollutant molecules come into contact with the tile surface, titanium dioxide as a light-activated catalyst immediately transforms them into mineral salts which are entirely harmless and which are then simply washed away the next time the tiles are cleaned. The result is significantly improved indoor air and a permanently pleasant and fresh room environment.



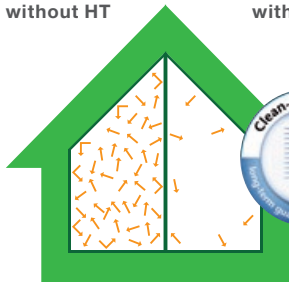
Just how HT-coated tiles ensure healthy air is shown in a film. Simply follow the QR code. www.clean-air-ceramics.com/air



➔ Renowned test institutes confirm these effects. See page 11.



without HT



with HT



Peter Bachmann, Director of the Sentinel Haus Institut für wohngesundes Bauen and an acknowledged expert in indoor hygiene, recommends HT ceramics as an innovative solution within the context of sustainable building.

sentinel Haus  institut

HT ceramic – no perceivable changes. **But still special.**

Product guarantee by Deutsche Steinzeug

During the production process, the HT coating is bonded permanently at a high temperature with the tile surface – making it practically indestructible. This is even covered by our unique long-term guarantee!

The positive tile properties are retained.

Tiles are:

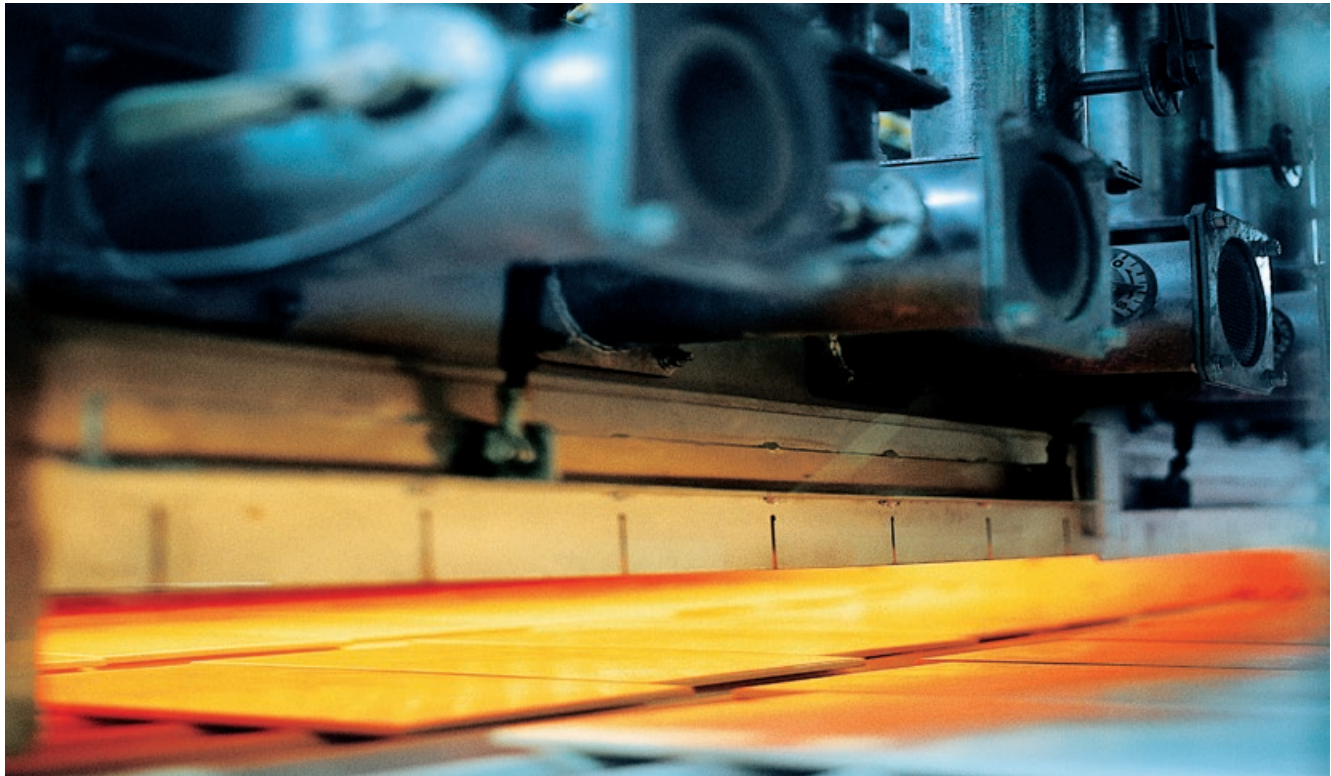
- colour- and light-fast
- incombustible
- free of emissions and solvents
- resistant to chemicals
- antistatic
- thermally conductive

Particularly durable

Ceramic tiles for walls and floors have always been extremely durable and long lasting displaying a wide variety of outstanding product features. They are safe as they do not emit any pollutants and are particularly uncomplicated in terms of care and maintenance. Nor does the HT coating change any of these positive attributes.

Naturally safe

As a natural substance, titanium dioxide is harmless and can be found in toothpaste, food or medication, for example. During production, it is permanently burned into the glaze at a high temperature and bonds firmly with the tile surface.



HT is permanently burned into the surface.

HT technology: **convincing.**



Allerwelle sports and recreational pool, Gifhorn, Germany /
Architect: Venneberg & Zech, Hanover, Germany

Test certificates

Deutsche Steinzeug collaborates with renowned test institutes which confirm the effects of HT. Simply follow the QR code for the full test reports:



www.clean-air-ceramics.com/testreports

Antibacterial effect:

- Fraunhofer Institute Schmallenberg (ISO 27447)
- Dr. Ralph Derra, ISEGA – Forschungs- und Untersuchungs-Gesellschaft mbH Aschaffenburg

Decomposition of pollutants/odours:

- Fraunhofer Institute Braunschweig (ISO 22197-1)
- Fraunhofer Institute Holzkirchen
- Prof. Dr. Horst Kisch, Friedrich-Alexander University of Erlangen/Nuremberg

Easy cleaning:

- Fraunhofer Institute Braunschweig (ISO 10678:2010)

AGROB BUCHTAL GmbH
Buchtal 1
D-92521 Schwarzenfeld
Tel.: +49 (0) 94 35-391-0
Fax: +49 (0) 94 35-391-34 52
E-mail: agrob-buchtal@deutsche-steinzeug.de
Internet: www.agrob-buchtal.de

Jasba Mosaik GmbH
Im Petersborn 2
D-56244 Ötzingen
Tel.: +49 (0) 26 02-682-0
Fax: +49 (0) 26 02-682-1506
E-mail: info@jasba.de
Internet: www.jasba.de

www.assenmacher.net

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