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CI/SfB (41)	Vv



Sto Ltd | **Facade**

**StoLotusan Color -  
The unique facade paint  
that keeps walls clean  
and dry for longer**

# The lotus effect®. Created by nature - perfected in paint.



StoLotusan Color mimics a water-repellent process discovered in the leaves of the lotus plant and developed into a scientific breakthrough – the world's first facade paint with the lotus effect®.

- Extreme water repellence and a unique surface microstructure means that dirt runs off in the rain.
- A uniquely advanced high-performance paint technology that results in facades staying beautifully clean and dry for longer.
- Produces low-maintenance surfaces that stay looking good.

## The lotus-effect® in principle...

The lotus-effect® was discovered by German scientist Dr Wilhelm Barthlott, who has since won many environmental awards and recognition for his discovery and its application for mankind.

Dr Barthlott noticed that the microstructure of the lotus leaf causes rain drops to run off immediately, leaving the leaf surface clean and dry.

Sto has patented this technology and the lotus-effect® which has been integrated into the facade paint StoLotusan Color.



On the microstructured, super-hydrophobic StoLotusan surface water droplets take on a spherical form, pick up the dirt particles which are only loosely deposited on the surface and leave a clean trace in their wake.

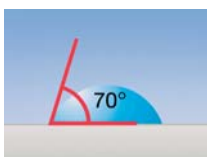


Fig a

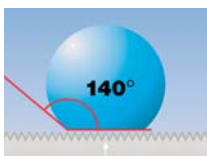


Fig b

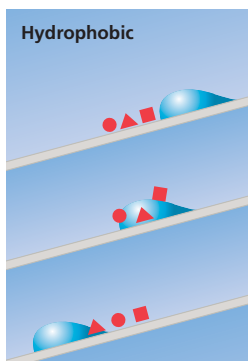


Fig c

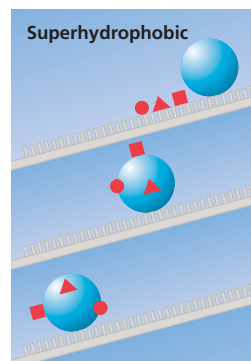


Fig d

The greater the contact angle between water droplet and surface, the greater the water repellence. Only on super-hydrophobic surfaces with angles of around 140° will water reach this characteristic round droplet form. Fig b and d are now referred to as the 'lotus effect®'

## ... and in practice

The problem with conventional facade paints is that over time, dirt accumulates and becomes visible on the outside of buildings. Facades particularly exposed to the prevailing weather also collect a build-up of micro-organisms (algae, bacteria, fungus) which flourish in damp and dirty conditions.

StoLotusan Color offers a superior technology. When it rains, water droplets cannot maintain surface contact and pearl off, keeping the facade clean and dry – even on buildings exposed to the harshest weather.



The StoLotusan test surface (middle) remains discernably cleaner than the two facade paints on the left and right.

## StoLotusan Color – the facade paint with a big difference

The obvious advantage that StoLotusan Color offers is the fact that it protects the structures to which it is applied in a way that no paint or coating has been able to offer until now.

By keeping surface water and dirt at bay, the substrate is shielded from the impact of the micro-organisms that can damage both the fabric and the appearance of many modern buildings.

Looking good for longer thereby reducing maintenance is a key strength of this unique facade paint – and explains the enormous impact it is having in the refurbishment arena, especially as it applies to public buildings and municipal housing. It is available in white and a vast range of colours from the StoColor system, and may be applied to mineral, cementitious and concrete surfaces.†



On conventional paint coatings dirt particles and the surface itself are wetted by water. This leads to algae formation and fixation of particles to the surface, especially in shaded areas of the facade.

(Right) With StoLotusan Color protection, dirt runs off each time it rains to leave a beautifully clean and dry facade.

**Lotus-Effect**®



### Just look at the benefits

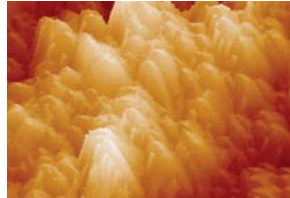
- Highly water and dirt repellent
- Best protection against algae, bacteria and fungus build-up
- Stays clean and dry for longer
- Resistant to chalking and UV-stable
- Easy to apply\*
- Good water and CO<sup>2</sup> permeability

\* Drying time in accordance with BS EN 1062-1, 2004 is approx 24 hours

† Sto anti-fungal and priming applications must be adhered to.



## Closer inspection proves StoLotusan Color to be the ultimate facade paint



*The microstructure of a lotus leaf – at 7000 x magnification.*



*The successful transfer of the lotus-effect into StoLotusan Color.*

This photo has been taken with a nanoscope showing the fine structure that reduces the contact surface area water and dirt can cling to. Raindrops simply run off as a result of the extremely super-hydrophobic surface, taking dirt particles with them.

At the same magnification you can see a similar microstructure in StoLotusan Color. The surface is super-hydrophobic, so rain will immediately run off walls coated with it, carrying dirt particles with it.

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### The effectiveness of the lotus effect® has been tested and confirmed by:

- Test report P 1977-1 written by the Polymer Institute in Flörsheim
- Report REB-5/1999 from the Fraunhofer-Institut für Bauphysik, Holzkirchen
- Test report P2371-1 of the Polymer Institute in Flörsheim
- Research report Nr. AT 008/00 of the Research institute for pigments and paints e.V. Stuttgart
- Approval SERVIC BACT, Rodgau, 03/2002