



EXOCOAT SH – SUPERHYDROPHOBIC FINISH

Introduction

EXOCOAT SH gives visible and durable water and dirt repellence on walls and other vertical structures with porous structure. EXOCOAT SH is a unique water-based 1K superhydrophobic coating based on sol-gel-technology. It has shown its excellent hydrophobicity and water repelling effects on various porous substrates such as cement, brick, render and gypsum board. This coating still allows the surface to 'breathe' and thus entrapped humidity can escape. The unique sol-gel chemistry is not closing off the surface. This has the advantage that the core of the material can dry out completely, enhancing thermal insulation and avoiding microbial growth (black and other spots). When coated, EXOCOAT SH is principally invisible and does not change the aesthetics of the surface.

Technical Leaflet



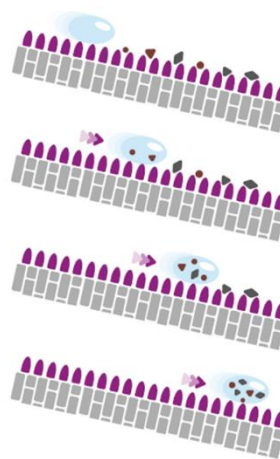
<Figure 1. A render exposed to a soiling test. A=untreated, B=EXOCOAT SH, C=an alternative treatment.



>Figure 2 Illustration of the self-cleaning effect

Self-cleaning

The superhydrophobic or **Lotus effect** causes rain drops to bounce back from the surface, pick up any dirt deposited and roll down without the chance of penetrating into the pores (see the pictures on the right). This continuous process leads to a self-cleaning effect of the surface. This, in contrast to any non-treated surface which either absorbs the droplet (porous) or causes a water film running down leaving dirt untouched.



>Figure 3, self-cleaning effect

Application

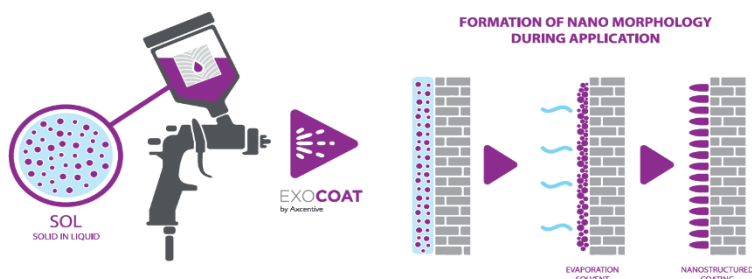


Figure 4, application and self-assembling curing

EXOCOAT SH is applied by spray (roll is possible). After bringing the product on the wall, the self-assembling system cures in 6 – 8 hours.



The information presented herein is true and accurate to the best of our knowledge, but without any guarantee unless explicitly given. Since the conditions of use are beyond our control, we disclaim any liability, including for patent infringement, incurred in connection with the use of these products, data or suggestions.

Europe, Americas, Middle East and Africa
Axcentive SARL
Chemin de Champouse
13320 Bouc Bel Air, France
+33 4 42 69 40 90

Asia, India and Australasia
Axcentive Asia Pte Ltd
13 Lorong 8 Toa Payoh,
#07-01 Braddell Tech Park
319261 Singapore
+65 6258 6338



Product Improvements

Our new EXOCOAT SH has an improved outdoor durability and keeps up in various weather tests. EXOCOAT SH has 20% solids in water and - for optimum performance - should be diluted with water in a ratio of 1:10. This makes it a competitive and sustainable solution.

When properly applied, water contact angles up to 140° may be expected.

The shelf life of the EXOCOAT SH is 12 months.

Strong performance

With EXOCOAT SH you can convert walls and other mineral substrates into long-term superhydrophobic surfaces, showing an extreme water pearling effect, much appreciated by consumers.

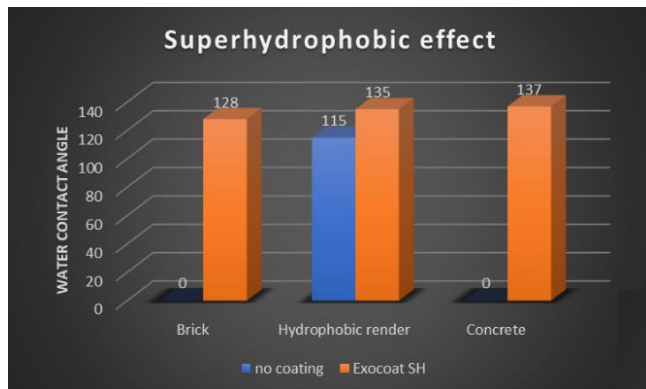


Figure 6, Water contact angle after EXOCOAT SH finish on various substrates (orange) and compared to the same substrates without coating (blue)

>Figure 5, superhydrophobicity in practice

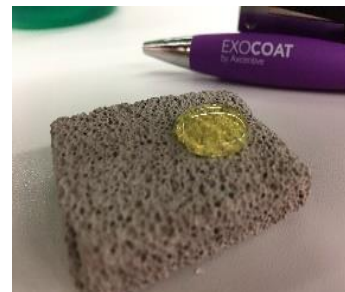
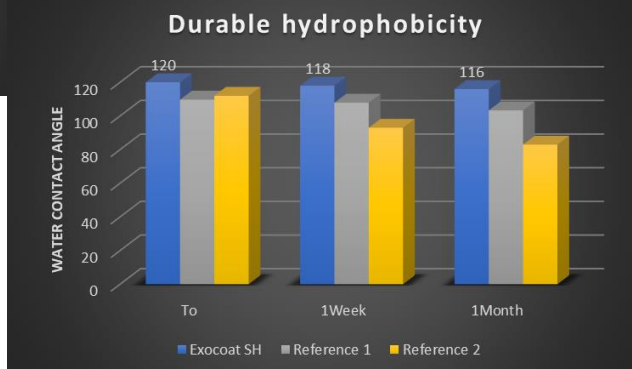


Figure 7, Water contact angle for brick treated by EXOCOAT SH and two alternative products after curing before outdoor exposure (To), after 1 week and 1 month outdoor exposure.



Durability Outdoor

An accelerated weathering test (QUV, 500 hrs.) shows no change in water contact angle (WCA), demonstrating the outdoor resistance of EXOCOAT SH. 500 hours QUV equals about 12 months outdoors in a humid and hot climate.

Field test

Bare porous red-clay bricks exposed to NW European climate with 2 layers of coating show a strong water repellent effect.

After almost **one-year outdoor exposure** to the elements, the hydrophobic protection continues. FTIR analysis shows indeed that after 11 months the coating is still present. Consequently, the **protection of the surface from water penetration and dirt** continues for at least one year.

In the same field test, EXOCOAT SH showed **superior WCA's** (10-15 degrees higher) compared to a classic silane/siloxane formulation, over the first 4-5 months.

On an approximately **horizontal surface**, EXOCOAT SH shows good durability as well. Therefore, on slightly tilted surfaces EXOCOAT SH can be applied. Use on horizontal surfaces with the possibility of stagnant water is not recommended (a film former is required here).



The information presented herein is true and accurate to the best of our knowledge, but without any guarantee unless explicitly given. Since the conditions of use are beyond our control, we disclaim any liability, including for patent infringement, incurred in connection with the use of these products, data or suggestions.

Europe, Americas, Middle East and Africa
Axcentive SARL
Chemin de Champouse
I 3320 Bouc Bel Air, France
+33 4 42 69 40 90

Asia, India and Australasia
Axcentive Asia Pte Ltd
13 Lorong 8 Toa Payoh,
#07-01 Braddell Tech Park
319261 Singapore
+65 6258 6338