

GEWE-clean[®]

The correct angle is key

We humans can only marvel at Nature's perfection – or learn from it. Researchers have thus been working tirelessly to create “nano-structured surfaces” since the 1970's. The technology can now be found in many areas of our daily lives in the form of “easy-to-clean” coatings. Glass plays a crucial role in this context.

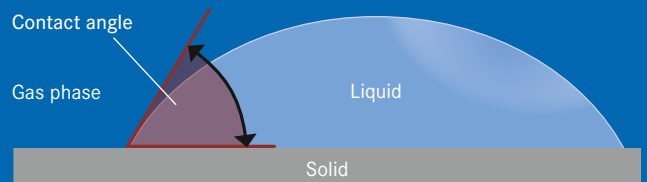
The terms dirt-repellent and easy-to-clean are used to describe functional surfaces that are treated in such a way that no, or only small quantities of dirt and contaminants can stick to them, making them easy to clean. The wettability of glass surfaces is an important criterion when evaluating the easy-to-clean properties of hydrophobic systems.

The larger the contact angle/theta is, the greater the easy-to-clean effect and this is exactly the parameter used to define the functionality of such coatings. The correct angle is key and it is worth taking a closer look at it. According to detailed, verifiable measuring, the contact angle of GEWE-clean[®] is $\geq 105^\circ$; even after being wiped 50 000 times the contact angle decreases only marginally, by 0.5° , and can thus be classified as totally wipe-proof.

Contact angle

The contact angle/theta (theta, also wetting angle) is the angle a drop of liquid on the surface of a solid forms to that surface. The size of the contact angle between the liquid and the solid depends on the reciprocal action between the substances in the area of contact. The less reciprocal action there is, the larger the contact angle becomes. By calculating the contact angle it is possible to define the characteristics of the surface of a solid, for example surface energy.

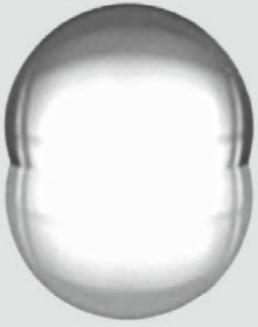
Source: Wikipedia



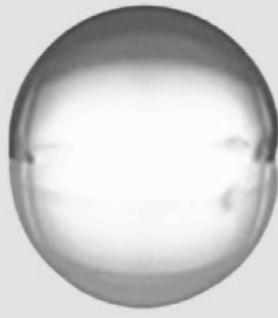
It is difficult to wet easy-to-clean surfaces with water and they have a contact angle of between 90° and 130° .



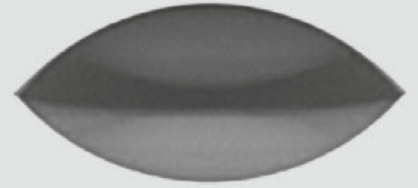
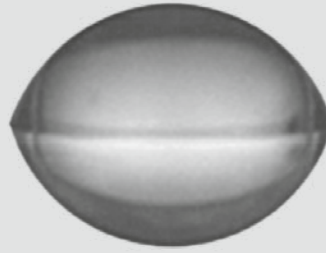
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GEWE-clean®



Conventional coatings



Drop shape on trial panes: GEWE-clean® nanocoating (left) with a contact angle of 106.4°* is more effective than conventional easy-to-clean coatings on the surface of glass.

Benefits of GEWE-clean®

- the coating is connected to the glass by means of chemical bond, this ensures a good, long life
- the hydrophobic effect repels water and dirt from the surface of the glass whereby the structure remains intact
- the coating enjoys a very long lifetime
- very high mechanical strength
- less susceptibility to environmental influences
- absolute food compatibility
- saves cleaning costs, cleaning agents, cleaning work

Example of use



Application areas of GEWE-clean®

- Showers, shower partitions, mirrors
- Glass furniture, glass counters, glass partition walls
- All-glass systems, all-glass doors – even sandblasted and satined glass
- Glass façades, conservatories, windows, solar collectors**
- Glass on vehicles and boats**

** upon request

*** For interior applications according to the product and care instructions. For exterior use according to individual agreements.



With its special application procedure and chemical action on glass, the GEWE-clean® product combines the latest findings related to specific glass finishing methods to produce a unique easy-to-clean effect on glass.

The hydrophobic (water repellent) coating of glass leads to a functionalization of the glass surface, and this in turn results in easier cleaning. Even treated glasses, such as panes of sandblasted or satined glass are protected from repeat soiling and weathering and can be cleaned with little effort. For indoor applications, this means for example that fingerprints can be reduced and removed much easier than in case of conventional glass surfaces.

After thorough cleaning of the glass surfaces, GEWE-clean® is applied, dried and then hardened. This technology meets the highest standards and gives the easy-to-clean effect on the coated glass a long life. The high quality of the coating is monitored through tests which accompany the processing e.g. contact angle measurements and wipe tests. The quality of the coating assures the customer that the beneficial properties are adhered to and that these meet the market expectations which are placed on GEWE-clean®.

Technical characteristics:

Glass thickness	from 3 mm to 15 mm
Dimensions	min. = 180 mm x 350 mm max. = 2000 mm x 3000 mm
Production options	Execution as clear float glass, ESG or coloured, sandblasted or general satin-style panes of glass, all kinds of textured glass

*statistically verifiable mean average with a confidence interval of 95%

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SCHOLLGLAS GmbH
Schollstraße 4 · D-30890 Barsinghausen
Tel.: +49 (0) 5105 777-0 · Fax: +49 (0) 5105 777-118
www.schollglas.com



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