



PILKINGTON

First in Glass™

Pilkington Activ™ Self-Cleaning Glass Frequently Asked Questions: Industry

Q. Who makes it? How is it sold/distributed?

A. Pilkington **Activ™** Self-Cleaning Glass is produced by Pilkington North America's plant in Ottawa, Ill., located approximately 80 miles southwest of Chicago. Pilkington North America's direct customers are commercial and residential glass fabricators, and window manufacturers, primarily in North America.

Pilkington **Activ™** Self-Cleaning Glass is available in thicknesses ranging from 3/32" (2.5mm) to 1/4" (6mm), and glass sizes up to 130" x 204" (3300mm x 5180mm).

Q. What is it? How does it work?

A. Pilkington **Activ™** Self-Cleaning Glass is a pyrolytic coated glass product, meaning the chemical composition that gives the glass its qualities is applied to one surface of the base clear glass while it is in a molten state. Therefore, the composition becomes an integral part of the surface, rather than being applied onto the surface after the glass has cooled. Once produced and installed, it never needs to be "retreated." (Coatings applied by manufacturers to glass after it has cooled are typically known as sputter or soft coated glass products, and tend to be less durable than pyrolytic coatings.)

The self-cleaning properties are achieved two ways: First, the sun's ultraviolet rays cause the integrated coating to chemically react with unwanted organic dirt to gradually and continuously break down its adherence to the glass surface. This is called the *photocatalytic effect*. After installation, the integrated coating of Pilkington **Activ™** Self-Cleaning Glass must be exposed to the sun's UV rays for several days to become active.

Secondly, the integrated coating reduces the surface tension of water on the glass surface. Known as the *hydrophilic effect*, this causes water to "sheet" on the glass surface, preventing the formation of separate droplets and ensuring that loose dirt and other particles can be washed away during normal rainy weather.

Q. How long does it need to be exposed to UV before it starts to work?

A. As stated above, the glass should be exposed to the sun's UV rays for several days in order to "activate" the integrated coating. This will allow Pilkington **Activ™** Self-Cleaning Glass to work continuously at night and even during cloudy days.

Q. Where can Pilkington Activ™ Self-Cleaning Glass be used?

A. Pilkington **Activ™** Self-Cleaning Glass can be used in any residential or commercial fenestration application that is exposed to the outside environment with minimal overhang. Primary applications include residential windows, commercial/institutional windows and façades, skylights, atriums and sunrooms, and as part of exterior doors.

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Q. Is there a minimum angle at which Pilkington Activ™ Self-Cleaning Glass still works (such as in conservatory roofs)?

A. Pilkington recommends that the glass angle should not be less than 10° from horizontal.

Q. Can Pilkington Activ™ Self-Cleaning Glass be used as the inboard lite of glass?

A. No. Because the glass' integrated coating needs to be exposed to the sun's UV rays to work, Pilkington Activ™ Self-Cleaning Glass will not work if used as an inboard lite.

Q. Can Pilkington Activ™ Self-Cleaning Glass be used in interior applications such as shower doors?

A. No, because glass used in these applications do not receive enough UV rays to activate the Pilkington Activ™ Self-Cleaning Glass coating. Therefore, it can neither break down dirt nor provide sheeting action when water is applied.

Q. How long will Pilkington Activ™ Self-Cleaning Glass last? Is there a guarantee?

A. Pilkington guarantees Pilkington Activ™ Self-Cleaning Glass to last for 10 years. However, tests strongly suggest that it will last longer.

Q. Does smog and other air pollution affect Pilkington Activ™ Self-Cleaning Glass? If so, how?

A. No. Pilkington Activ™ Self-Cleaning Glass has been tested against a whole range of air-borne pollutants. Salt spray tests and sulfur dioxide (SO₂) spray tests have been conducted along with the effect of a range of solvents and potential pollutants. In addition, we have real-life results from several years of testing.

Q. Will Pilkington Activ™ Self-Cleaning Glass work with all types of frame materials?

A. Yes. The frame materials and colors have no impact on how Pilkington Activ™ Self-Cleaning Glass works.

Q. What is the composition of the Pilkington Activ™ Self-Cleaning Glass coating?

A. Pilkington Activ™ Self-Cleaning Glass utilizes a proprietary mixture of chemical precursor materials and a proprietary chemical vapor deposition process to form a pyrolytic coating. U.S. and international patents and patent applications related to the precursor materials and the method for depositing the coating have been granted or are pending.

Q. How does it affect the environment?

A. Pilkington Activ™ Self-Cleaning Glass has a positive affect on the earth's environment. First, the integrated coating of Pilkington Activ™ Self-Cleaning Glass will not degrade or peel off. Secondly, Pilkington Activ™ Self-Cleaning Glass can be recycled. (At least 30% of each ton of glass that Pilkington North America produces consists of recycled glass from its own operations.) Finally, because Pilkington Activ™ Self-Cleaning Glass nearly eliminates the need to use window cleaning detergents, it prevents run-off of those detergents into the ground.

Q. Does the special coating change the color of the glass?

A. No. Pilkington Activ™ Self-Cleaning Glass has very much the same appearance as any other clear float glass, though it may appear slightly shinier.

Q. Can it be tempered and undergo other glass fabrication or processing (such as lamination)?

A. Yes. Pilkington Activ™ Self-Cleaning Glass can be tempered, laminated, insulated and cut using standard float glass techniques, and no edge deletion is required. When cutting Pilkington Activ™ Self-Cleaning Glass, it should be cut with the integrated surface up and care should be taken so that the surface does not come in contact with metal or abrasive objects. Any labels applied to Pilkington Activ™ Self-Cleaning Glass must be applied to the non-coated surface.

Q. Does it have sealant compatibility in a window?

A. Yes. Pilkington **Activ™** Self-Cleaning Glass has been tested with insulating glass (I.G.) sealants. The coated glass is compatible with the commonly used polysulfide, urethane, two part silicones and hot melt butyl materials. During normal production these materials are applied to the #2 and #3 surfaces of an IG unit and are not applied to the outer, #1 surface where the Pilkington **Activ™** Self-Cleaning Glass coating is located.

The glazing sealants used to supply a weather seal between the #1 surface and the glazing frame or sash should be carefully selected to avoid any compound containing silicone. As with all first surface reflective coated glasses, it has been noticed that silicone oils can migrate from silicone sealants, or even from silicone lubricated rubber glazing gaskets. Such oils are very difficult to remove from coated glass surfaces and can attract and hold visible dirt deposits. For additional details, contact Pilkington Technical Services at 419-247-4448.

Q. Does Pilkington **Activ™ Self-Cleaning Glass require special care or cleaning after the window is installed?**

A. No. However, it is suggested that, when spraying Pilkington **Activ™** Self-Cleaning Glass windows with water, that you rinse from top to bottom. This maximizes the sheeting effect action by ensuring all the dirt can be washed off and, on heavily soiled windows, reduces streaking issues on drying.

Q. Does the integrated coating of Pilkington **Activ™ Self-Cleaning Glass provide any additional benefits, such as improved U-value?**

A. An additional benefit that Pilkington **Activ™** Self-Cleaning Glass provides is approximately 20% reduction in UV transmission over clear glass. It does not, however, contribute to improved energy efficiency or strength of the glass. To improve the energy efficiency of a window that uses Pilkington **Activ™** Self-Cleaning Glass, combine the product in an I.G. unit with clear glass as the inboard lite. Or, for optimal energy efficiency, use an inboard lite of a low-E glass, such as Pilkington **Energy Advantage™** or **Solar E™** Low-E Glass products.

Q. Who else makes a “self-cleaning” product like this?

A. No one. No other primary glass manufacturer in North America or the world currently markets an “OEM” self-cleaning glass.

Q. Who should I contact for more technical details about Pilkington **Activ™ Self-Cleaning Glass?**

A. For more details about Pilkington **Activ™** Self-Cleaning Glass, visit www.activglass.com, send an e-mail with your questions to activglass@gelia.com, or call 1-866-88 ACTIV (1-866-882-2848).