



Pilkington **Activ™**

Actively sustainable, environmentally "green".



Glass that is naturally cleaned by rain and sun – a 20-year success story

The glazing in panoramic windows, conservatories, terrace roofs and canopies can easily become dirty due to the fact that it is installed horizontally. Not only that: these windows are often difficult to reach, making cleaning a time-consuming and expensive process, as well as being hazardous.

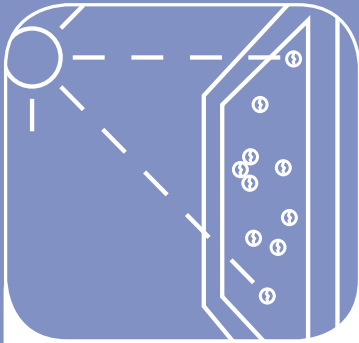
Pilkington **Activ**[™] is especially intended for this type of glazing. Its dual-active surface results in the most natural, sustainable and, simultaneously, the most convenient method of cleaning – using rain and sun. Tedious, conventional cleaning is required much less often as the weather does most of the work.

But there's more: Pilkington **Activ**[™] stays transparent, even when there is condensation on the outside.

This innovative functional glass has been installed in countless conservatories, terraces and canopies as well as glass façades, since it was launched on the market 20 years ago. This attests to its effectiveness, as does its certification by the Fraunhofer Institute in 2017: Pilkington **Activ**[™] glazing stays clean for longer, meaning the user saves the time and effort as well as the costs of cleaning.

Pilkington **Activ**[™] has another key property: its photocatalytically active surface has a measurable effect in breaking down emissions in the ambient air, including nitrogen oxides. In this way, Pilkington **Activ**[™] aids the control of air pollution improving the microclimate, especially in polluted urban areas.

How does it work?



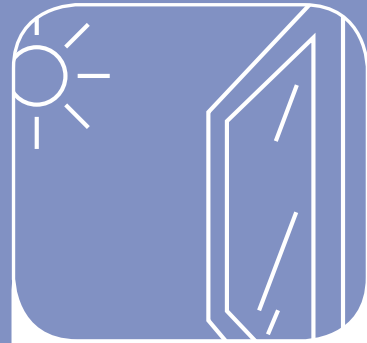
1 | Photocatalytic effect

To start with, the Pilkington **Activ**TM glass surface absorbs the ultraviolet components of daylight and, along with oxygen, triggers a chemical reaction that breaks down and loosens organic dirt particles.



2 | Hydrophilic effect

The actual "cleaning effect" comes about the next time it rains. Instead of forming droplets, the hydrophilic properties of the Pilkington **Activ**TM glass surface cause rainwater to spread out in an even film that washes away the dissolved dirt. This uniform film also allows for improved transparency when there is external condensation.



3 | Clean!

Unlike conventional glass, water dries on Pilkington **Activ**TM in a way that produces improved, clear transparency. The result: a clean window.

Durable and certified as effective

The special dual-active properties of Pilkington **Activ**TM surfaces are achieved using a special manufacturing process and do not wear off. The experience of having used this glass for 20 years confirms this.

In addition, in 2017, the Fraunhofer Institute subjected the natural cleaning effect of this innovative functional glass to extensive tests, in accordance with DIN EN 1096-5:2016.

The result:

Pilkington **Activ**TM is classified as self-cleaning. This means that glazing that uses Pilkington **Activ**TM stays clean for longer.

Fraunhofer

Table: Relative percentage of tested samples

Sample	Sample 1		Sample 2		Sample 3		Sample 4		Sample 5		Sample 6		Sample 7		Sample 8		Sample 9		Sample 10		
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

5. Classification

According to the test results above the tested product „Pilkington ActivTM“ exhibits an average change of global haze of $\Delta X_{\text{global}} = 0,42 \pm 0,19\%$ and can thus be classified as self-cleaning.

Helping you, the user, and the environment: naturally cleaning, environmentally friendly and climate friendly

Cleaning the glazing in conservatories, patio roofs and canopies, which is often difficult to access, usually requires the use of ladders or special cleaning equipment. Using Pilkington **Activ™** glazing means significantly less cleaning is required. It saves the user time, effort and costs and, in particular, also reduces the chance of accidents occurring.

The natural cleaning effect of Pilkington **Activ™** is also sustainable, as it cuts down on the damage to the environment caused by use of cleaning products, drinking water or energy.

The special Pilkington **Activ™** surface is photocatalytically active when exposed to light. It is known that photocatalytically-active surfaces can be used not only on glass, but also other building materials such as roof tiles. They help to purify air and, among other things, have a measurable effect in breaking down nitrogen oxides.

In this way, Pilkington **Activ™** also makes an active contribution to air pollution control and the breaking down of nitrogen oxide, in a very real way.





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Crystal-clear reasons for choosing Pilkington **Activ™**



Pilkington **Activ™** is ingenious

- Natural cleaning using the rain and sun.
- Provides clear visibility in the rain.
- Transparency is maintained even when there is external condensation.
- Low maintenance.



Pilkington **Activ™** is economical

- Conventional cleaning is required much less often.
- Saves the effort and costs of cleaning.
- Long service life: like commercial safety and insulating glass.



Pilkington **Activ™** has a feel-good factor

- It creates a feel-good atmosphere, with windows that are always clean.
- The need to clean hard-to-reach glazing and the associated risk of accidents occurring is reduced to a minimum.



Pilkington **Activ™** is sustainable

- Nitrogen oxides are measurably broken down by the photocatalytic surface.
- Less environmental impact due to the reduced use of cleaning products.
- No waste of energy or unnecessary use of drinking water as "cleaning water".

This publication provides only a general description of the products. Further, more detailed, information may be obtained from your local supplier of Pilkington products. It is the responsibility of the user to ensure that the use of these products is appropriate for any particular application and that such use complies with all relevant legislation, standards, codes of practice and other requirements. To the fullest extent permitted by applicable laws, Nippon Sheet Glass Co. Ltd. and its subsidiary companies disclaim all liability for any error in or omission from this publication and for all consequences of relying on it. Pilkington and "Activ" are trademarks owned by Nippon Sheet Glass Co. Ltd, or a subsidiary thereof.



CE marking confirms that a product complies with its relevant harmonised European Norm.
The Declaration of Performance for each product, including declared values, can be found at www.pilkington.com/CE



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