

Press release

VELUX sees Kyocera ceramic technology as important contributor to Vacuum glass technology

Vacuum glazing is gaining ground in Europe. They rely on slim vacuum systems that are particularly robust and thermally insulating thanks to modern industrial ceramics from Kyocera and other new technologies.

Kyoto/Mannheim, 11th January. According to the Federal Environment Agency, heat generation accounts for around seventy percent of energy consumption in German households. However, only a third of this ensures a comfortable room temperature. Almost half of the heating energy (around 45 percent) is lost through inadequately insulated windows, doors and roofs. So it is no wonder that building owners and architects are interested in more sustainable solutions.

Roof windows have to meet very special requirements. They should bring light into otherwise dark parts of the building, withstand severe weather events – rain, hail, snow – and still open and close reliably even after years of use.

Ceramic supports enable thermally and mechanically optimized vacuum glazing

The vacuum allows heat transfer coefficients of less than 0.5 watts per square meter Kelvin (W/m^2K) to be achieved. The vacuum created between the panes of glass requires two things: on the one hand, the space between the two panes is further reduced and, on the other, the distance needs to be supported by support structures made of metallic or ceramic pillars, for example.

With a diameter of just 0.5 millimetres, the support structure is barely noticeable. At the same time, they play an important part in determining the thermal performance and robustness (ductility) of the vacuum insulating glass against lateral shear forces such as gusts of wind, hailstorms and snow loads to a particularly high degree. Ceramic supports can therefore have a significant positive influence due to their low thermal conductivity and high mechanical strength.

The significant reduction in weight thanks to vacuum insulating glass makes them particularly interesting for the energy-efficient renovation of existing buildings. At the same time, they also offer architects more design freedom for new buildings.

“For building owners all over the world, VELUX stands for the highest quality and reliability,” emphasizes Armin Kayser, Executive Vice President of KYOCERA Fineceramics Europe GmbH in Mannheim. “It is an honor and confirmation for us that we can be a partner in this development with our solution-oriented material and manufacturing expertise.”



View through vacuum glazing with square ceramic supports
(source: Peter Sønderkær, VELUX)

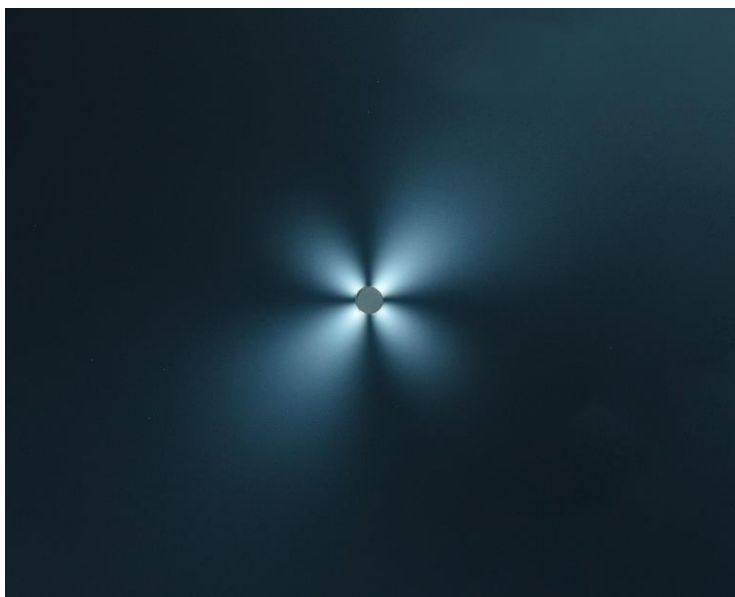


Illustration of a ceramic pillar (source: Peter Sønderkær, VELUX)



For more information on Kyocera: www.kyocera.co.uk

About Kyocera

[KYOCERA Fineceramics Europe GmbH](#) is a subsidiary of [KYOCERA Europe GmbH](#), which has been successful in Europe for over 50 years. The Kyocera Group is one of the world's leading providers of high-performance ceramic components for the technology industry, offering over 200 different ceramic materials, as well as state-of-the-art technologies and services tailored to the specific needs of each market.

KYOCERA Europe GmbH is a company of the KYOCERA Corporation headquartered in Kyoto/Japan, a world leader in semiconductor, industrial and automotive components as well as electronic components, printing and multifunction systems, and communications technology. The technology group is one of the world's most experienced manufacturers of smart energy systems, with more than 45 years of industry expertise. The Kyocera Group comprises 297 subsidiaries (31 March 2023). In England, Kyocera has a subsidiary in Frimley, KYOCERA Fineceramics Ltd. With around 81,000 employees, Kyocera generated net annual sales of around EUR 13.87 billion in the 2022/2023 fiscal year.

Kyocera is ranked 672 on Forbes magazine's 'Global 2000' list for 2023, and ranked as 'The 100 Most Sustainably Managed Companies in the World' according to the Wall Street Journal. For the second year in a row, Kyocera qualified for the Dow Jones Sustainability Index (Asia-Pacific). As well, Kyocera receives a Gold rating on EcoVadis Sustainability Survey for the second consecutive year and was acknowledged as a 'Top 100 Global Innovator 2023', being one of the world's leading innovators, for the seventh time by Clarivate.

The company also takes an active interest in cultural affairs. The Kyoto Prize, a prominent international award, is presented each year by the Inamori Foundation — established by Kyocera founder Dr Kazuo Inamori — to individuals worldwide who have contributed significantly to the scientific, cultural, and spiritual betterment of humankind (equivalent to approximately €685,000 per prize category).

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