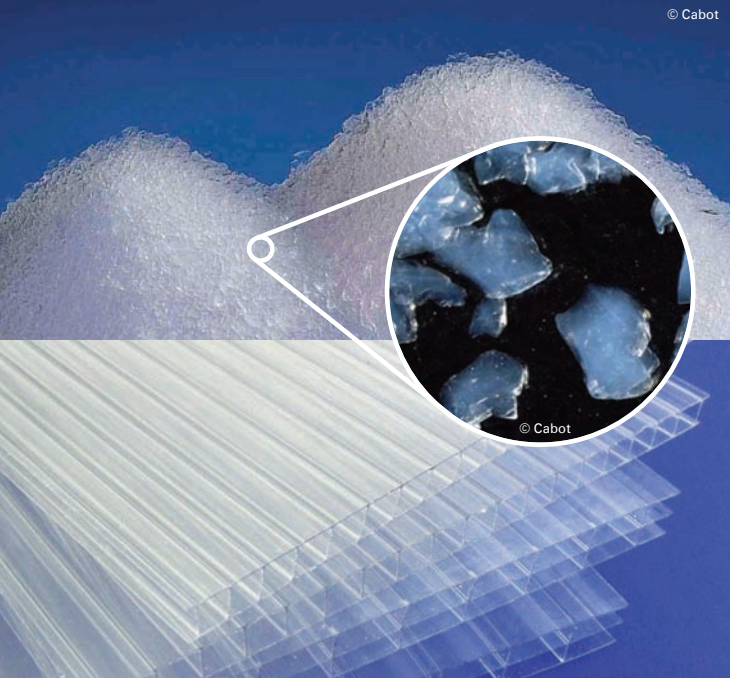


**ESSMANN AeroTech**  
**Excellent heat insulation properties**



© Cabot

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[www.essmann-aerotech.com](http://www.essmann-aerotech.com)

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**ESSMANN**  
 ▲ LIGHT ● AIR ■ SAFETY

**ESSMANN AeroTech**  
**Innovation for enhanced efficiency**

**ESSMANN AeroTech**  
**Enhanced daylight combined with a wide range of additional benefits**

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**By filling the polycarbonate plates in arcade rooflights and skylight domes with ESSMANN AeroTech, we achieve excellent performance**

- in terms of daylight illumination
- in reducing energy costs thanks to an improved U value
- in renovation projects thanks to the reduced weight compared with heat insulation glazing
- by increasing productivity at the workplace

ESSMANN AeroTech is an aerogel-based substance with an open-cell and extremely porous silicate structure. Aerogel is comprised of 95% air and just 5% solid matter.

The high level of porosity and very fine structure of ESSMANN AeroTech set it apart from other materials, giving it excellent functionality and properties in a wide range of possible uses.



ESSMANN AeroTech is the technology deployed in new arcade rooflights and skylight domes that uses translucent aerogel from the silicate-aerogel group of products.

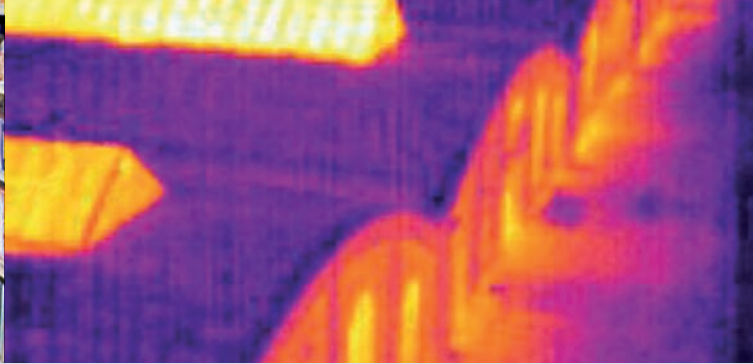
In structural-physical terms, ESSMANN AeroTech offers convincingly good heat insulation coupled with enhanced soundproofing. It is UV stable and complies with the requirements for modern ecological construction products.

The particularly even distribution of light prevents direct sunlight glare and enhances the light comfort in the room.

**ESSMANN**  
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A member of the **ESSMANN GROUP**.

The new technology for taking advantage of natural daylight



**The benefits for you:**

- Increases the feeling of well-being in sales outlets
- Encourages customers to purchase
- Reduces the rate of errors in production facilities
- Enhances employee motivation

**The benefits for you:**

- Improved U values, resulting in a reduction in total energy requirements
- Creation of good working conditions
- Optimised daylight utilisation

**The benefits for you:**

- Reduced weight compared with heat insulation glazing, for example
- Particularly suitable for lightweight construction designs
- When renovating, the plates can be replaced more quickly and easily without the need to interrupt production
- Enhanced soundproofing

**The benefits for you:**

- Increased productivity
- Enhanced well-being of the staff
- Reduced waste
- Reduced risk of accidents

**More efficient illumination of sales outlets and production areas**

Scientific studies prove that natural daylight exerts a positive influence on consumer behaviour. The feeling of well-being in sales outlets increases considerably and has been shown to encourage the willingness to shop.

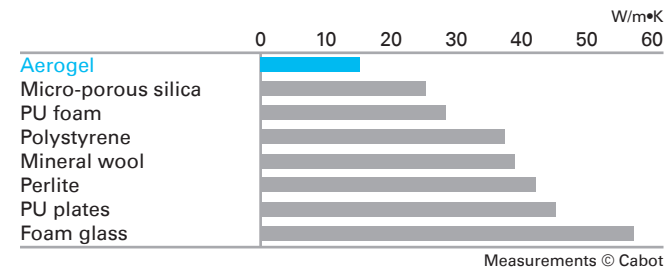
Sales can be significantly higher in areas with daylight illumination. The rates of increase range between 31% and 49%.\*

Natural daylight also has a positive impact on productivity in production facilities. The rates of production errors are demonstrably lower and employee motivation is considerably enhanced.\*

A further structural-physical side effect of ESSMANN AeroTech is the enhanced soundproofing it offers.

\*© The Pacific Gas and Electric Company on behalf of the California Board for Energy Efficiency Third Party Program

**Reduce your energy costs by improving the U value**



The use of aerogel with its low ratio of solid matter and its fine-pore structure enables ESSMANN AeroTech to achieve a greatly improved U value compared with the conventional standard glazing in use today. In doing so, it optimises the energy cost balance of a building.

In conjunction with the extremely high degree of transparency, the low thermal conductivity of  $\lambda = 0.019W/mK$  enables better use to be made of the roof and facade for daylight illumination, while the heat loss is minimised.

If properly planned, natural illumination can lower total energy requirements and, at the same time, create good workplace conditions. ESSMANN AeroTech is a light-dispersing glazing which therefore exerts a positive influence on the even distribution of daylight throughout a room.

**Discover the benefits of a "lighter" daylight system**

ESSMANN AeroTech is the perfect solution for challenging renovation projects aimed at ensuring energy efficiency. In light of the low weight, the use of arcade rooflight glazing filled with aerogel is particularly suitable for lightweight construction buildings. At the same time, it improves the U value.

	U value in W/(m²K) <sup>1</sup>	Soundproofing quality in dB	Light transmission in %	g value in %
16 mm	2.4	19	74%	69%
16 mm + Aerogel	1.31	21	64%	59%

<sup>1</sup>Measurement examples for 16/3 PC plate © Cabot

Weighing just 3 kg/m<sup>2</sup> (e.g. PC 16), the new ESSMANN AeroTech plate ranks among the lightweight construction materials. Conventional glazing with comparable heat insulation properties can weigh as much as 10 times more than ESSMANN AeroTech and is therefore statically not sustainable – in the truest sense of the word – for many lightweight construction buildings.

**Increase the productivity of your staff by providing more natural daylight**

Scientific studies prove that natural daylight exerts a positive influence on the productivity and well-being of staff at the workplace. Rates of errors, premature fatigue and the risk of accidents can be considerably reduced. It is well worth investing in good lighting in industrial, commercial and administration buildings in order to improve the work conditions. AeroTech technology enables you to plan and design larger daylight surfaces than was previously the case, while at the same time taking account of possible energy losses.

Studies in schools have also proved that there is a direct relationship between the availability of daylight in classrooms and improved test results. Students taught in classrooms with a high level of natural daylight incidence proved to be 20% faster in maths tests and 26% faster in reading tests on average.\*