

How to maintain thermal comfort in a building throughout the year – solutions that also increase its energy efficiency

The proper approach to the energy efficiency of a building includes activities aimed at reducing energy losses and ensuring optimal use of heat from the interior space, which increases the comfort for users of the building. This also affects the costs of heating and air conditioning, having a direct impact on our planet. The European Union has the ambition to be climate-neutral by 2050, and energy efficiency is part of the process, reflected in the European Green Deal. Buildings have a significant impact on energy consumption. For this reason, it is very important to pay attention to activities that will support the European strategy and will translate directly into optimally warm houses and apartments while not generating unnecessary costs.

Temperature exchange can be stopped and energy effectively managed in a number of ways – at the stage of both construction and assembly of individual elements. The government's educational website says: "Appropriate insulation of walls and roofs, the replacement of windows, entrance doors and garage doors, combined with the replacement of heat sources, can reduce heating costs by up to 85%."

Thermal insulation of walls

Thermal insulation of the internal and external walls of the house is one of the important steps that leads to the optimal interior temperature and effectively stops temperature exchange. In this regard, Tytan Professional thermal insulation foam adhesive is a market solution that merits attention. This professional single-component product can be used for bonding thermal insulation materials when insulating external and internal walls. It can also be applied on existing insulation layers. It offers a real chance of improving thermal comfort in interiors.

Insulation of floors and ceilings

The energy efficiency of a building is also significantly helped by the insulation of floors and ceilings. Proper floor insulation is among the most important thermal insulation elements in the house. For this purpose, it is worth considering the use of modern materials, such as polyurethane foam, which is perfect for thermal insulation. With its properties, it effectively reduces heat transfer while helping maintain the optimal temperature in rooms. Whether it's new construction or a renovation project, this product guarantees effective protection against heat transfer, forming a durable thermal barrier.

Window and door sealing

Installing good quality windows and doors that are fully tight and insulate heat can bring up to 30% savings on energy bills while ensuring comfort for users of the building. Proper sealing of windows and doors matters too. In many cases, heat loss or temperature cooling in the apartment is caused by various gaps emerging during the use or at the construction stage.

"The application of appropriate materials that firmly connect various substrates and structural elements, while preventing uncontrolled air infiltration, is key to maintaining high energy efficiency of buildings. The systems

*developed in our laboratories can effectively seal any gaps occurring during the installation of windows, doors and other features,” says **Piotr Komala from the Windows & Doors Division of Selena Group.***

One of the solutions available in the market is Selena Group's Tytan WINS system (known as Quilosa WINS in the Spanish market). An analysis of energy consumption in a single-family house before and after replacing windows with the use of Tytan WINS has demonstrated a reduction in energy consumption and CO₂ emissions (the operational carbon footprint) by up to 30%. This generates annual savings of several thousand zlotys while benefiting our planet through lower emission of pollutants into the atmosphere. Sealing all surfaces is the key step to keep heat from escaping from the house.

Thermal upgrade and thermal insulation – the essence of modern construction

The comprehensive process of improving the energy efficiency of buildings – including ensuring the maintenance of thermal comfort in the building throughout the year, especially in winter and summer – is part of the EU strategy to become carbon-neutral by 2050. New regulations adopted by the European Parliament in the second half of 2023 under the European Green Deal are designed to increase energy consumption savings. This is a strategic direction of the EU policy, which also creates space for business to become engaged in the process.

*“For companies from the construction chemicals sector, the legislation opens the way to the production and distribution of products used for thermal upgrades. System solutions play an essential role here, as they will ensure that new and existing buildings can be insulated in an accessible and simple way,” **emphasizes Roman Owczarek from the Insulations Division of Selena Group.***

*“The systems offered by Selena have a real impact on the comprehensive improvement of the energy efficiency of buildings by reducing the need for and consumption of thermal energy. This means sealing and insulating structural elements particularly exposed to heat transfer, i.e. walls, usually responsible for 25-35% of heat loss. In their case, Selena proposes to use Tytan Professional ETICS system solutions - External Thermal Insulation Composite System. Windows and doors can let as much as 20-30% of heat through, so the three-layer Tytan/Quilosa WINS systems are suitable here. On the other hand, for roofs, which are responsible for 10-20% heat loss, or floors and foundations, through which 5 to 10% heat is lost, our insulation and waterproofing solutions,” **Owczarek adds.***

Stopping the temperature exchange in the house is more than a matter of comfort: it also benefits people's finances and the environment. In this context, modern technologies and materials have a major role to play. Solutions designed to reduce energy losses in buildings are the result of growing ecological awareness and embody the pursuit of energy efficiency.

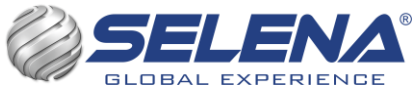
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Selena Group is a global producer and distributor of construction chemicals and one of the four largest global producers of mounting foams for construction. For over 30 years, it has been successfully delivering innovative products that accelerate and facilitate work on construction sites in nearly 100 countries. Its foams, sealants, adhesives, waterproofing products, insulation systems, fastenings, and the complete energy roof system not only help in saving energy, water and time, but also substantially increase the energy efficiency of buildings. Selena Group has been actively working for sustainable construction. It participates in projects of the Polish Green Building Council (PLGBC) and the Polish ESG Association. Selena Group comprises 30 companies in 19 countries, and in 7 of those countries it has its own R&D laboratories.