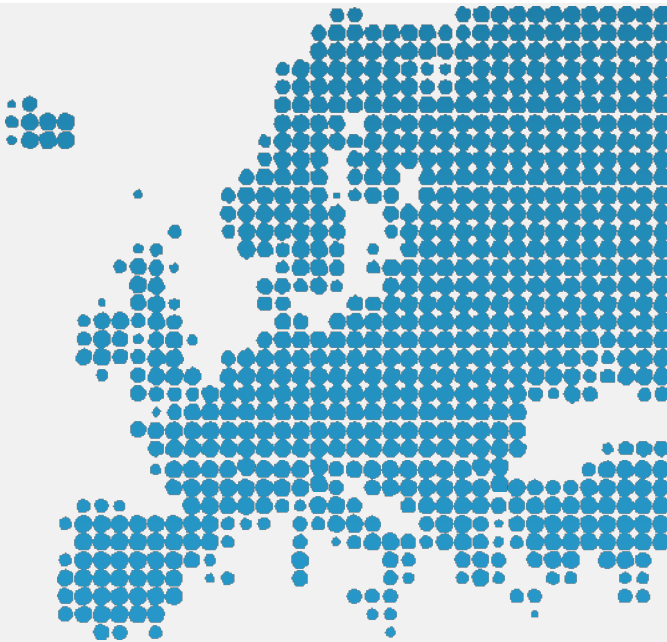


Sustainable impact of doors during the life cycle of buildings

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1. The current situation in the market

“Sustainability” is one of the most important future challenges to the industry, as technologies need to be developed in order to make the best use of resources. Therefore, requirements of European directives such as “Energy Performance of Building Directive” (EPBD – No. 2002/91/EG, recast from July 2010) were issued as a basis to achieve the energy and environmental aims.

The door industry is forced to develop trends in the fields of energy efficiency, quality and durability. This applies in particular in the door industry, whose products have to last 20 - 25 years and longer.

It is clear that financial institutions and real estate organisations want to secure their investments with sustainability certificates like LEED, BREEAM or DGNB. These certification bodies adapt their rating systems in a relative short period of time. Additionally, the European standardization work in CEN / TC 350 - Sustainability of construction works - will support this “sustainable approach”.

All the certificates and standardisation work are indicators of a fast-growing, sustainable building market.

2. The impact of doors – how to benefit

How can the door-industry benefit from this situation? The sustainability certificates for green buildings or building products include statements about cost in use, for example for energy, cleaning or maintenance throughout the product’s life cycle. That means that energy-efficient, low-maintenance and durable products save the building owner’s money – an excellent prerequisite for high-performing quality doors. But this impact of energy saving potential for example is not fully known to Green Building certification bodies, building owners, architects and construction engineers.

E.D.S.F. wishes to point out that the energy saving related to the U-value of a door is not the sole consideration: there are other parameters like air leakage and opening time whose interaction must be factored in.

These are relevant door indicators:

- Door parameters, like U-value, air-leakage and opening time have a real impact on energy consumption. With an optimized combination of a well-insulated and sealed door and “intelligent door automation”, a real energy-saving benefit will be secured throughout the life-cycle!
- The materials used for doors, e.g. steel, aluminium, plastic, glass or rubber, have very good properties for recycling!
- Optimized / reduced material consumption with ideal material performance!
- The way to construct /assemble a door: easy to install and re-install!
- Comfortable usage / handling with high safety standards ensure the doors’ performance.
- Regular maintenance and inspection offered by the door industry support a sustainable life cycle of doors.

Upgrading of doors has a big potential for the optimization of existing buildings. An intelligent, automated door could save a lot of energy and money. Additionally, the CO₂ pollution could be reduced and comfort, safety and accessibility will be improved!

3. Conclusion and solution

A door is a small financial investment (2–3 % of the main investment cost of a building) in comparison to all the materials used for a new building, but with a high financial impact on the whole life-time cycle – if the right door-solution is used!

A thermally well-insulated door with low U-Value has no impact on energy saving if it is open all day or the open cycles are very long and velocity is slow. With a good combination of a thermally optimized well-insulated door and “intelligent door automation” with short opening cycles, a real energy saving benefit could be realized during a whole life-cycle.

The door has a much bigger impact on the energy consumption of a building than is at present recognized!

The E.D.S.F.-Door-Energy-Calculator explains how a real energy-saving benefit could be realized during the whole life-cycle of a building: www.edsf.com/calculator.

E.D.S.F. – Sustainable impact

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