

Fire-resistant roof skylights with POLFLAM® glass: valued by architects, loved by investors

Technological development presents designers with new opportunities. Architectural ideas, the implementation of which only a few years ago would have been impossible, have become a reality today. In today's increasingly competitive real estate market this is of particular importance. Winning designs are modern and original, and allow us to keep investment at a reasonable level. It is such attractive yet affordable facilities that are sought after by customers. Attractive, yet affordable, facilities such as this are the most desirable to customers.

Glass-Team Company, specialising in the production of fire-resistant POLFLAM® glass, gradually introduces another solution to the market, giving architects the chance to design freely while economising on investment budgets. POLFLAM® glass can be successfully used as a partition separating fire zones in the building, at the same time creating a very nice visual effect and increasing the functionality of the facility (more light, less constrained interior design).

The next step for the POLFLAM® glass manufacturer was to develop, test and implement the production of glass for skylights. This product significantly extends the range of fire-resistant glazing for buildings. Most importantly, the skylight glass is based on fire-resistant glass technology proven by Glass-Team customers in practice and used for years in hundreds of facilities throughout Poland and abroad.

A skylight made of fire-resistant glass? "Why?" you might ask.

Such questions may be asked by the layman, for whom putting up a fire-protection barrier between the building interior and the outside world may seem pointless.

However, experienced designers and fire protection experts have no doubts: firstly, there are legal regulations that leave no room for interpretation, secondly, according to some experts, the regulations do not address all the



Innovative skylights with fire-resistant POLFLAM® glass are perfect for providing better lighting in public building interiors. They are aesthetically pleasing, durable and meet all regulatory requirements relating to fire protection

threats against which users of facilities should be protected.

Let us discuss both arguments – the formal one and the one appealing to „common sense“.

When should skylights meet the fire-resistance requirements under the applicable laws? The Regulation of the Minister of Infrastructure of 12 April 2002 on the technical specifications for buildings and their location determines at least two such cases.

First and foremost, it concerns Class A and B buildings where the roofing material is required to have the fire-resistance class of at least RE 30.

These requirements must also be met when the area of a glazed section exceeds 20% of the roof. It is hard to imagine modern facilities without partially or fully glazed roofs. And this means that such glazing simply must be fire-resistant under the law.

Another important case described in the regulation is the construction of a building which is lower than existing adjacent structures.

According to the law, designers must take into account the fire-resistance of roofing (and the fire-resistance of the roof windows used) in an 8-meter safety zone. This is to avoid the possible spread of fire from the higher into the lower building.

Buildings' fire safety class	Fire-resistance class of buildings' elements					
	major load bearing structure	roof structure	ceiling	external wall	internal wall	roofing
1	2	3	4	5	6	7
„A”	R 240	R 30	REI 120	EI 120	EI 60	RE 30
„B”	R 120	R 30	REI 60	EI 60	EI 15	RE 30
„C”	R 60	R 15	REI 60	EI 30	EI 15 ⁴	RE15
„D”	R 30	(-)	REI 30	EI 30	(-)	(-)
„E”	(-)	(-)	(-)	(-)	(-)	(-)

R - Fire load (in min), subject to the Polish Standard on the principles of setting out fire-resistance classes of buildings' elements

E - fire-resistance index (in min), set out as above

I - fire insulation (in min), set out as above

(-) - no requirements

Fire protection experts pay attention to another very important aspect not included in the regulation that determines the technical specifications, namely the susceptibility of roof glazing to collapsing in the event of fire. In the case of ordinary glass, glazing is destroyed very quickly and parts of skylights falling down can pose a serious threat to users of the facility and to people involved in the rescue operation.

Skylights made with fire-resistant POLFLAM® glass help to minimise or completely avoid that risk. Owing to the technology used, the composite glass pane turns into a stiff opaque partition that remains in place and does not fall under its own weight.

Such a scenario was researched by experts at the Building Research Institute. They analysed a solution combining POLFLAM® glass with Aluprof profile. The official results and certificates confirm that it meets the requirements of fire-resistance EI 30 for the glass and REI 30 for the entire skylight construction.

It is worth noting that in this application the size of the POLFLAM® glass pane may not exceed 1200 x 2200 mm. Moreover, the manufacturer has technology enabling a further increase in skylight parameters by adding another pane (selective glass). This is particularly relevant to heat insulation, solar resistance and safety class, meaning that the fire-resistant skylight gains additional features, significant in specific facilities.

In the case of roof glazing, the weight of the glass is of particular importance. It is very difficult to find a compromise between fire-resistance and durability and the weight of the entire structure together with the glass panes. In this case the technology developed, researched and tested by Glass-Team for hundreds of actual projects is the perfect solution.

POLFLAM® glass is much lighter than fire-resistant glass manufactured using other technologies, while the parameters are the same or even better. The icing on the cake is the price of the product. Representatives of Glass Team, which is winning an increasing

share of the fire-resistant glass market, emphasise that one of the main advantages of the proprietary technology is the ability to reduce the costs of production of fire-resistant glass, while maintaining all the required parameters and all the functional and aesthetic qualities.

Therefore, solutions using POLFLAM® glass, including skylights, can be offered at very attractive prices. It has gained the indisputable recognition of investors, who meticulously calculate construction project budgets.