

FIRE-RESISTANT GLASS WITH RESISTANCE TO UV RADIATION

UV radiation is generally known to be harmful to humans. It also causes interior design elements to deteriorate – a good example of that is fading of fabrics.

UV radiation may also have an adverse effect on construction elements; however, in this case, the technologists make efforts not to let that happen.

Fire-resistant glass is composed of several layers, and its job as a whole is to protect the interiors and people within them against the effects of fire. The glass that is currently available is manufactured with the use of three technologies: one of them includes using a fire-resistant film that is not UV-resistant – the only solution is an additional use of PVB film.

The other two technologies are based on using hard and soft gel. Both products are resistant to UV radiation and meet the recommendations of the PN-EN ISO 12543 standard.

Ultraviolet light will do no harm

In the company laboratory of Glass-Team, owner of the Polflam brand, there are gel samples from each product batch. Out of concern for quality, it is necessary to control the parameters of that product on a regular basis. It is, however, not the only reason for storing the samples over an extended period of time. Their constant observation makes allows determining whether the appearance

of the gel does not change after being exposed to both sunlight and artificial light.

Another test consists in testing the samples of fire-resistant windowpanes for UV resistance.



In the Polflam laboratory the glass is exposed to UV light.

The test stand where the sample is tested meets all the recommendations of the PN-EN 12543-4 standard. The test consists in exposing fire-resistant windowpanes to specialised lamps for 2000 hours, that is, for over 83 days.

The performed tests have shown that when exposed to ultraviolet rays, the fire-resistant glass filled with soft hydrogel does not change its colour or transparency. This is a very important feature.

It is also worth realising that in natural conditions, windowpanes are exposed to sunlight only for several hours a day. Therefore, the UV-resistance test successfully passed in the company's laboratory means that fire-resistant glass filled with soft hydrogel will most certainly keep its properties for at least the five-year warranty period. The practice of using the Polflam fire-resistant glass proves, however, that it is UV-resistant for much longer. Let us add that the

aim of the tests carried out in the company's laboratory is not only to check the fire-resistant properties of the gel, but also its appearance, so important in contemporary interior design.

It is aesthetics that is, in fact, one of the reasons for which such fire-resistant glass was developed. Otherwise, opaque partitions with an adequate degree of fire resistance would be sufficient.

More light

It is also very important that because it is not necessary to apply a film protecting the fire-resistant layer, the windowpane can be thinner and lighter, and thus less expensive. Windowpanes with protective PVB film have several layers of it inside them; therefore, they are thicker and thus heavier, which makes their preparation more energy-consuming, and thus more expensive.

Architects are now trying to design glass partitions inside buildings, especially commercial ones. It is not just about aesthetics, but also about filling the interior with sunlight. It allows reducing lighting expenses and makes working more pleasant and more efficient.

Fire-resistant glass is a great internal partition that can be used almost anywhere where it does not have to be a load-bearing wall. It is also easy to imagine the aesthetic look of glazings made of flame-resistant bent glass or in frameless systems. They should be completely transparent, and if they are tinted, then just intentionally, in a colour resulting from the use of enamelled glass.

And for such applications the fire-resistant Polflam glass, filled with a completely UV-resistant hydrogel, is the best choice.