# Transport, assembly, storage, operation, washing and cleaning of glass.

## Transport conditions.

It is recommended to transport glass and insulating glass on metal racks or other packaging to protect the glass against mechanical damage. The glass should be transported in an upright position, supported from below in a way that does not cause the glass to be cut or chipned.

The transport of insulating glass units horizontally is not allowed and may cause butyl to flow into the top of the glass due to extrusion of the glass under the influence of the glass. In the case of horizontal transport of insulating glass units, there is also a risk of the component panes being exposed to their own surfaces and the risk of their contact, which may cause mechanical damage to the panes or coatings of the glass.

## Glass storage.

The recipient is obliged to ensure that the storage conditions of the products are properly m.in. store them in covered, dry, airy and non-direct sunlight.

Seals of insulating glass (polysulfides, polyurethanes) are not resistant to UV radiation, therefore it is necessary to avoid exposure of the edge of glazing packages to solar radiation.

During the storage of glazing units, this clamping force cannot be used to be too much. Under the influence of atmospheric conditions, the gas will close in the space of the shaft changes its strength due to strong pressure. That is why it is recommended that immediately after delivery, loosen the securities.

The Supplier shall not be liable for damage caused by improper storage of the products.

## Installation conditions.

Insulating glass units must be installed in accordance with the recommendations of the window or façade system. If the bottom edge (base) of the glass is marked by the manufacturer (information sticker – "edge of the support"), it is on this edge that the insulating glass should be placed. In the absence or loss of marking, it is necessary to identify the edge of the glass with a parallel arrangement of the glazing forming part of the glazing and to place the glass on that edge. The glass should be supported according to its weight, and the support points should allow for a reduction and uniform pressure on the entire surface of the glass.

The elements pressing the glass against the frame must not exert excessive point pressure when it can cause the glass to be pressed into the glass and the butyl to be squeezed into the glass and results in optical deformations on the glass. The guidelines of manufacturers of window systems (aluminium systems) should be followed and, in the absence thereof, the parameters from similar systems should be adapted. The downforce should be controlled.

When installing, do not place the glass directly on the floor, do not lean against the wall without washers / spacers limit the possible damage.

**Protection of glass and glass during construction works.**

During construction works carried out in the vicinity of the glass, it is necessary to ensure that it does not stain them with alkaline substances (cement, lime, gypsum, adhesives, etc.). Dirty surfaces should be immediately rinsed with water to remove dirt. When work is carried out on a welding machine or grinder near the glass, the glass should be removed when sparksfall on them, they will not be able to be removed (in that of the ages and the melting).

When working with devices, they produce high temperatures (burners, blowers) because of the risk of thermal energy.

**Operation of glass.**

Vitroterm-Murów S.A., as a manufacturer of single and insulating glass, does not recommend covering the glass with advertising films, posters, or other opaque materials. Sticking such materials results in the formation of local thermal pressures, which can lead to the creation of glass after a while. Window wrapping by the Recipient is carried out at his risk and responsibility, and complaints of such damage will not be recognized and considered.

**Washing and cleaning glass.**

The surface of the glass should be washed regularly at a low level of soiling. Solid dirt, such as cement mortar, must not be removed dry. To this end, the surface of the glass should be abundantly moistened with clean water in order to wet and wash off hard and sharp steaks.

Grease and the remaining masses should be gassed with e.g., spirit or isopropanol, and then the trunks are rinsed abundantly with water.

Cleaning of reflective coatings is allowed with using alkaline substances (fluorine, chlorine) or cleaning powders when they may damage the coatings. Washing should be carried out with ordinary detergents, and to remove dirt in the form of greasy stains, e.g., acetone, follow the rules used and these measures. For cleaning the reflective coating, reflective glass manufacturers recommend using a suspension containing cerium oxide (50÷160 g/l of water).

When self-cleaning glasses, etc., are used for special applications, the recommendations of the manufacturers of these glasses must be followed. For more information, please contact our Sale Department.

Labels should remove these by the recipient from the glass immediately after installation at the glass (they should not be exposed to prolonged exposure to solar radiation).
Labels and impurities should not be removed by harsh markings that may cause the glass to scratch.

For the washing of glass, substances must not be used to contain frictional measures.

For defects of glass resulting from improper washing or improper cleaning measures, the impact of external contamination (atmospheric and other) and the use of e.g., steel scrapers, where there is a high probability of damage to the glass – the glass manufacturer is not responsible.

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