

# MIK Windows

PVC • WOOD • WOOD/ALU • ALU

"A" Energy Class windows and doors that help you save the most



## Let's preserve energy. LET'S SAVE.

MIK windows saved 12,740 tons of CO<sub>2</sub> last year

## Instructions for use, cleaning and maintenance



### INSTALLATION

MIK windows have been carefully engineered and professionally installed with precision. All windows made from PVC have factory-made installation holes used to secure the windows to the wall. In addition, the edges of the windows have to be filled with polyurethane foam, which provides thermal insulation of the bond between the window and the wall. If construction or finalization works take place after installation of your windows, all visible parts of the hinges, glass, frame, the window itself, and the handle should be appropriately protected against damage and dust.

Shavings or particles of iron may be generated during the installation or other final works performed on the building and as a result, rust marks may appear on the lower part of the window frame. No complaints shall be accepted due to such stains. After your PVC windows have been installed (mainly in new buildings) or in the case of various rough works, the installer should clean the windows, and especially the inner part of the frame, with a vacuum cleaner with a nozzle and damp cloth. After installation of PVC windows and doors, the installer should remove the protective foil. Upon the client's explicit request, the installer may leave the foil on the PVC windows; this foil should be subsequently removed by the client him or herself. We would like to bring to your attention the fact that the protective foil should be removed no later than within three months of installation, as the foil becomes difficult to remove after time. In such cases we cannot be responsible for any residual glue. The protective foil is also not meant to protect your windows and doors from any damage caused by persons performing other work on your building. It is the responsibility of any such persons to protect your windows and doors. No complaints shall be accepted for physical damage to your PVC windows and doors after they have been installed.

### USING YOUR WINDOWS AND/OR DOORS

Make sure that the handle is always in one of the following position: vertical-up, vertical-down, horizontal. Other intermittent positions may cause the doors or windows to malfunction or damage the hinges (with the exception of hinges designed to offer multi-stage opening).

### MAINTAINING THE HINGES

Under normal conditions of use, grease the movable parts of the hinges once a year. Maintenance products can be bought from MIK. If your hinges start to become stiff, they should be greased at shorter intervals. Under extreme conditions of use, such as in high humidity areas (the bathroom and kitchen) or in case of very dirty environments (industrial or dusty environments), the movable parts of the hinges should be inspected and greased every six months or more often.

### CLOSING AND TILTING YOUR WINDOWS

The hinges allow you to set the level of opening/sealing of your windows. You can perform small changes yourself by using an appropriate hexagon screw key, while large changes should be left to our professionals, who will be happy to help you. We will be able to advise you on what should be done. However, under no circumstances should you place anything between your open window and the window frame (e.g. a piece of wood or paper) in order to prevent the window from closing. This can impair the window's functioning or cause damage to the window and especially individual parts of the hinges.

### MAINTENANCE WORK

We would be happy to provide assistance in maintaining MIK windows. In case your windows or doors fail to run smoothly, please contact us as soon as possible so we can carry out any necessary maintenance works or re-set your windows or doors to prevent further damage.

### CLEANING THE FRAMES

Everyday dirt can be easily removed from your window frames with a solution of warm water and a gentle washing-up liquid or glass cleaner. Under no circumstances should you use scouring pads, a dry dusty cloth or similar as they may deface your window or door frames. Dirty frames can be easily cleaned with a special cleaning agent called COSMOFEN, which is available from MIK.

### STRICTLY FORBIDDEN

Under no circumstances should you use cleaning or polishing agents containing solvents, as these may damage the finish of your PVC windows or doors. You should absolutely never use nail polish remover, paint thinner or any general household plastic cleaners.

### SEALS

The seals around the window pane itself and its frame should be regularly cleaned as to remove dust and other dirt. If you pull the seal from its position, reaffirm it by using your thumb to push it back into position, beginning at the end where the seal is still in position. Do not use any pointed objects as this may damage your seals. We recommend you protect rubber from the winter cold with glycerine.

### GLASS

In contrast to old, single-pane windows, modern, insulation glass windows give a clear view, mainly due to the exceptionally smooth surface of the glass. Under special lighting conditions (when the sun's rays hit the glass at specific angles), a rainbow effect may appear on parallel and

flat glass surfaces (interference). This physical phenomenon does not represent a quality deficiency and therefore cannot be considered a reason for complaint. Insulation glass is manufactured of two or more glass panels and dry air or special gas fills the gap between the glass panels. The edges of insulation windows are sealed with a special sealing putty and space holder, preventing water and moisture from entering the area between the glass panels. The incredible insulation properties of windows are derived from the low heat conductivity of the air/gas located in the area between the glass panels and an additional insulation layer. In case of large temperature differences or large, cross-panelled glass, the crosses may curve inward or outward. In such cases, no space holders are used due to the technology used when installing the crosses. This applies especially to gas-filled windows.

## CLEANING THE GLASS OF YOUR WINDOWS AND DOORS

When used as part of the building's façade, glass is exposed to natural as well as construction-related dirt. If ordinary dirt is removed in regular intervals using usual regular cleaning methods, this should not represent a danger to your glass. However, after time, and due to the location, climate, or construction, greater chemical and physical accumulation of dirt may occur on the glass. In such cases cleaning should be approached professionally and in a timely manner. With an aim to reduce, if not prevent, the accumulation of dirt over their lifespan, we hereby provide clarifications on the professional and appropriate timeframe of cleaning various types of glass. During construction works, installed glass should not come into contact with any aggressive dirt whatsoever. Should this nonetheless occur, the dirt should be immediately removed with non-aggressive means. Cement or concrete mud, plaster and mortar are especially dangerous. All the aforementioned are very alkaline and can cause the glass to react. Unless immediately removed with copious amounts of water, the glass may lose its shine and transparency. Dust and other fine residue should be removed from the glass by a professional, and under no circumstances should a dry procedure be used. Special attention should be given to various finalization works, especially those performed on the building after the glass surfaces have been installed. The accumulation of dirt can be reduced to its minimum by planning individual stages of work correctly and/or by employing protective means when needed (e.g. applying protective foil in front of windows or the façade). The purpose of the so-called "first cleaning" of the building is to remove dirt directly related to the works, rather than all dirt accumulated as a result of the construction works as a whole. In order to ensure glass preserves its qualities during its full life, it must be cleaned appropriately and regularly in the prescribed intervals. The cleaning instructions below apply to all types of glass installed in buildings. When cleaning glass, copious amounts of (preferably clean) water should be used. This prevents dirt particles from scratching the glass surfaces. Soft clean sponges, leather or man-made cloths, or squeegees can be used. To improve efficiency of the cleaning, neutral cleaning solutions or household glass cleaners can be added to the water. Solvents such as white spirits or Isopropanol should be used to remove greasy stains. All chemical cleaning agents containing alkaline, acids or fluoride should be as a rule avoided.

Using pointed or sharp metal tools (such as knives or razorblades) may result in scratches on the glass. If you notice that your cleaning is actually damaging the glass, immediately stop cleaning and consult the glass supplier. Fortified glass and glass with special functional layers are high-quality products and thus their cleaning demands special care and caution. Cleaning damage is especially visible on such glass, while at the same time any damage will reduce the functionality of the glass. When using portable polishing machines to remedy damage to glass surfaces it is worth bearing in mind that polishing removes a large amount of the glass mass. This may cause optical illusions such as the "lens effect". Polishing machines should never be used on fortified or layered glass. The subsequent polishing of unbreakable glass may reduce its structural integrity, thus impairing the safety of the construction element as a whole.

## CONDENSATION

Under special climate conditions, the glass, as well as the frame and other construction elements, may "sweat" (condensation may gather). Let's take a look at two practical examples. Take a bottle out of the fridge and place it on the table. You will notice that water droplets quickly accumulate on the bottle. Likewise, the lenses of your glasses steam up immediately after you enter a heated room from the outside. This occurs due to the fact that warm air can take much more humidity than cold air. When warm air hits a cold surface, the air cools and the water the cold air cannot take accumulates on the surface. This manifests as condensation. This phenomenon occurs especially often

in cases of high air humidity and low outside temperatures. High humidity is noted especially in bathrooms and kitchens. Correct ventilation can help prevent this phenomenon.

## PROPER VENTILATION

Your new MIK windows seal significantly better than the ones you used until recently. As a result, your rooms are no longer constantly being ventilated through the non-sealing areas of your windows and doors. Now you can ventilate your rooms in accordance with your needs and taste. Sweat, which we more or less constantly excrete, the vapour in the air we breathe, and steam from cooking and washing all negatively affect the relative humidity of our homes. In our sleep, our bodies lose 1 to 2 litres of water every night. Regular ventilation of rooms prevents high relative humidity and the occurrence of mould. This in turn increases the lifetime of your painted walls, wallpaper, wood panelling, floor and furniture. Intensively ventilate for a short while. If possible, create a draft by widely opening two windows or doors as directly opposite each other as possible. Around 5 minutes of such ventilation usually suffices, depending on the outside temperature. The duration of ventilation can be simply controlled even in cold weather. When you open the window, the cold outer pane of glass will immediately steam up. When the steam dissipates and the glass is dry again, close the window. In the meantime, the old air has been replaced with fresh air, while your walls and furniture have not had a chance to become cold. Excessively long ventilation cools the walls and your furniture and is thus unnecessary. Depending on their use, ventilate your rooms 2 to 3 times a day. While your windows are wide open, turn off the heating, and start reheating after ventilation is completed. Maintaining your windows in a constantly open position – even if they are tilted – does not provide effective ventilation. Ventilation should only be performed with outside air, since cool air can only take a small amount of humidity. Never direct humid water from your rooms into other rooms – only directly out of the building. After ventilation, the fresh air will be warmed up by the heat accumulated in the walls of the building in a few minutes. A steamed up window shows that the humidity in the room is too great and thus ventilation is needed. At the same time, ventilation ensures a nice and balanced climate in your home.

## EXTERNAL CONDENSATION ON THE OUTSIDE PANE OF GLASS

Condensation can sometimes occur on the outside pane of glass, especially when humidity is high in the morning. This phenomenon is not a sign of any deficiency, but rather proof of the high insulation properties of your glass. It proves that the insulation between the inner and outer pane of glass is functioning correctly. As a result, heat remains in the room and the outer glass remains cold. This provides the fundamental conditions for steaming to occur. Especially in areas of high external humidity, the outside air may become warmer than the window glass in the mornings. This causes condensation on the outer pane of glass. Fundamentally, this does not differ from the phenomenon of dew on the grass.

## WATER PROPERTIES OF GLASS SURFACES

The water properties of glass surfaces are not always constant. Contact from the reams, fingers, pattern paper, vacuum handles, labels, residual seals, silicone components, grease from manufacturing, as well as environmental effects, may cause minimal changes to the structure of the surface of your glass. When the glass is wet (due to condensation, rain, or cleaning), the light diffraction may be different on the affected surfaces, thus revealing such prints. They again become invisible when the glass dries out.

## THERMAL BREAK

As the temperature rises by 50 °C, a 1 metre long pane of glass stretches by about 0.5 mm. This thermal elasticity poses no threat if the glass is heated in a uniform manner along its whole surface.

However, if the glass is not uniformly heated, certain areas of the pane of glass stretch more, while others stretch less. This creates tension in the glass, which increases in line with the temperature of the glass. Often, a part of the glass window will be in strong sunlight, while the remaining part will be in the shade.

Such "partially shaded" panes of glass will, in any case, become heated in a non-uniform. Regular translucent (float) glass can withstand temperature differences of around 40 °C. If this non-uniform heating of the glass results in a greater difference in temperature, expect the glass to shatter. Such events are not covered by your warranty.