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Now there's fresh air in your life!

Modern windows. Optimal indoor climate.

➤ **correct
ventilation**

Your PVC-U windows of KBE window sections have essentially tighter joints than your previous windows. Your home is therefore no longer subjected to uncontrolled, permanent ventilation (leaks). You can now regulate the ventilation processes to your own needs. The water leaving our bodies naturally in the form of exhaled air and sweat and the water vapour generated by cooking and washing have an adverse effect on the relative air humidity indoors (just one sleeping person gives off about one to two litres of moisture every night).

Ventilating interior rooms at regular intervals prevents high levels of air humidity and therefore the risk of fungal growth (mould). Consequently, it extends the life of paintwork, linings, wallpaper, ceiling and wall panelling, floor coverings, furnishings, and curtains.

Ventilate briefly, but thoroughly, ideally by opening all windows wide for a through draught. Depending on the outside temperature, about five minutes should be enough. Ventilating for too long cools the inside walls by too much and is uneconomical. Ventilate the rooms three to four times a day, depending on how often they are used.

During ventilation the windows should be wide open, and the heating switched off. After closing the windows, heat the rooms again as needed.

There is no assurance of adequate ventilation when window sashes are kept permanently open, or even tilted.

➤ **correct
ventilation**

Ventilation must take place exclusively with outside air: cold air can always absorb only very little moisture. Humid indoor air should never be directed into other rooms, but always directly to the outside! After the windows have been closed the fresh air needs only a few minutes to absorb the heat stored in the building substrate.

A window that has misted over is an indication that the air humidity in this room is too high and that it is time to ventilate. By ventilating you also maintain a balanced living climate.

In the cold season you can very easily check the progress of ventilation. When you open the window, the cold outside pane will immediately mist over. You can close the window as soon as the glass has cleared. In this time the used air has been replaced, but the walls and furniture have not cooled down.

IMPORTANT

Under no circumstances should you insert a wooden block or anything else in the window to keep it from slamming shut. The window may fail or suffer damage as a result.

➤ **Services**

We shall be pleased to make you an offer for servicing your windows. This will make sure that the maintenance work needed for your windows is performed at suitable intervals.

➤ **Installation**

The PVC-U windows of KBE window profiles have been manufactured and assembled with professional care and precision.

IMPORTANT

If the windows have still to be flush mounted, it is important that you leave the blocks between the masonry and the frame: these ensure that the window sash can be handled with ease and may not be removed. These will be covered by the plaster or the sealing compound.

After installation we recommend vacuuming off the bottom outer frame section with a pointed nozzle. Any metal chips left over from the installation, etc., may otherwise cause rust spots.

At the latest three months after installation the protective films applied to the profiles before delivery must be removed. Only those protective films recommended by KBE may be used to protect the windows from soiling during subsequent work.

➤ **Handling**

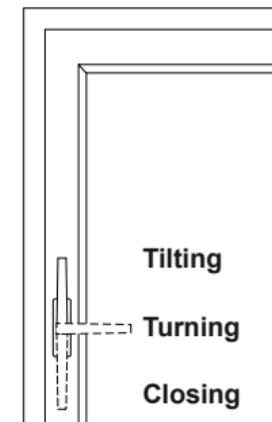
Your windows are fitted with brand hardware. Please make sure that the handle is always vertical at the top, or either horizontal or vertical at the bottom.

Other positions may cause handling malfunctions (excluding hardware with gap ventilation). For instance, the window sash could still turn when it is already tilted.

Don't panic!

The hardware's stay arm can hold the sash firmly and reliably at the top. Turn the handle to the tilt position, and press the sash back into the frame. Afterwards turn the handle from the tilt to the closed position.

Now you can open and close the window in the usual manner.



➤ **Cleaning of PVC-U profiles**

Window frames with normal soiling can be easily cleaned with lukewarm water and a little washing up liquid. Under no circumstances may these profiles be cleaned with abrasive agents or dry dustcloths or similar.

Heavily soiled frames can be cleaned effortlessly with a special cleaning agent.

This cleaning agent is available from your window supplier.

IMPORTANT

All cleaning and polishing agents containing solvents may not be used, specifically nail varnish removers or so-called "plastic cleaners".

➤ **Cleaning of aluminium surfaces**

Aluminium must be cleaned at intervals if it is to retain its decorative look.

After the components have been installed and before the official acceptance the windows must be subjected to basic cleaning.

Clean cloths or sponges must be used for this purpose.

Anodised surfaces are cleaned with warm water to which a chlorine free cleaning agent (e.g. washing up liquid) has been added. The windows should be cleaned only with a cloth or sponge and water. In the case of heavily soiled surfaces we recommend special cleaners for anodised surfaces. Subsequently polishing the aluminium with a dry cloth yields a uniform surface free of streaks.

Powder coated components are cleaned of slight soiling in the same manner as anodised surfaces. After cleaning the components should be rinsed well with clear water. Heavily soiled components require special cleaning agents, e.g. finish restorers and polishes from the automotive industry. Afterwards dry off with a leather or dry cloth.

IMPORTANT

Do not use acids, alkaline cleaners, scouring agents, pot cleaners, lyes, mortar, lime water, cellulose thinner, or similar.

➤ ***Gaskets
must be cleaned***

Also the peripheral gaskets should be cleaned regularly of dust and other deposits.

If a gasket should be pulled out of its receiving groove, you can press it back in with your thumb, starting at the retained section.

Do not use sharp objects: they could damage the gasket.

➤ ***Hardware
maintenance***

Once or twice a year all moving parts in the hardware should be treated with a resin- and acid-free oil or grease. Hardware that no longer moves easily will have to be treated earlier.

The hardware can be readjusted. This readjustment though should be left to the specialist, i.e. your window supplier. Only he knows exactly what to do.

➤ ***Cleaning glass***

Glass is best cleaned with clear, warm water and a good chamois.

If you apply too great a pressure, the gaskets may leave black stripes on the leather. If necessary, a little washing up liquid may be added to the water. Do not use abrasive care agents or agents containing solvents.

➤ ***glass***

Unlike the old single glazing, you can see everything without distortion through your new insulating panes. This is the result of the particularly plane surfaces.

Under certain angles, sunlight can refract in plane and parallel panes, and there is visible interference in the colours of the rainbow.

This physical phenomenon is not a quality defect, and not therefore grounds for complaint.

➤ ***thermal
insulation glass***

Thermal insulation glazing consists of two or more glass panes. Between these panes there is dry air or a special gas. At their edges the insulating panes are provided with a special sealing compound that prevents air and moisture from entering.

The insulating properties are contributed solely by the enclosed gas, which has a low thermal conductivity.

➤ **Why glass mists over**

In recent times there has been the occasional witnessing of a phenomenon that earlier was very rare indeed:

condensate on the weather side, i.e. the outside of the glazing. When obsolete insulating or single glazing has been replaced with a modern thermal insulation system, there are often disappointed or annoyed reactions when this phenomenon occurs and is seen to be a defect. Rightfully so? To answer this question, we must take a closer look at this phenomenon.

Condensate on the outside pane

For windows to mist over both of the following must apply:

They must be colder than the ambient outdoor air, and this air must be saturated with moisture. Air can absorb only a certain quantity of moisture, and the hotter it is, the more it can absorb. When this saturated air therefore comes up against a cold pane, it cools, and part of the moisture it contains liquefies on the surface:

the water condenses on the pane, and the pane mists over.

In regions with high air humidity, for instance near water courses, it can happen in the early hours of the morning that the air heats up faster than the window pane. Water then condenses on the outer pane. This is basically no different than dew forming on grass. Above all roof windows are affected. Because they can "see" into the cold night sky, roof windows cool faster at night than vertical panes.

So why didn't this happen to the "old" insulating glazing? The answer is simple. The old pane exhibited considerably poorer thermal insulation, so a lot more heat was lost from the heated interior. The outer pane was therefore heated as well – at the cost of living comfort and a huge heating bill. This no longer happens with thermal insulation glazing. The insulation between the inside and outside panes works, the heat stays indoors – and the outside pane stays cold. This means there is temporary condensation as described on the left.

Condensate on the inside pane

On the other hand, condensate on the inside pane is a far rarer sight on modern thermal insulation glazing than on the old systems – for the same reason. As a result of the enhanced thermal insulation the surface temperature of the pane is nearly as high as the temperature indoors. The panes then mist over only when the air contains too much hot water vapour, e.g. in the kitchen or the bathroom. So there must be regular ventilation: otherwise excess air humidity can condense on the walls! Further details can be found in "Correct ventilation".

To sum up

Condensate can form temporarily on the outside pane – in most cases when there is high air humidity in the mornings. This phenomenon is not a defect! Instead, it is proof of the pane's very high thermal insulation properties and a particular quality attribute.