

Instructions for installation and use Hansen Millennium®

Receipt and storage

Correct installation and maintenance affect the warranty. It is essential that doors and windows are installed correctly in order to ensure optimal function and operation. Incorrect installation may cause functional problems, and such issues will not be covered by the warranty of the windows and doors .

When unloading and handling the various windows, make sure you use tools and methods that do not cause damage to the constructions , and which do not subject installers to unnecessary ergonomic strain.

Upon delivery, the buyer must check that the delivery matches the terms of reference, and make sure that the windows and doors do not have evident faults, defects and signs of transport damage. In the event of grounds for complaint, the buyer must immediately contact Hansen Polska.

Labels and cork pads on glass panes should be removed within 1–2 weeks of delivery. Any corner protectors, covering film or other protective packaging must only be removed when installing the windows.

If stored outdoors, the windows must be placed on battens or pallets such that they do not make direct contact with the ground. The windows must be stored under a robust covering to protect them from rain and soiling. It must be possible to ventilate the area around the windows to limit the risk of condensation under the covering. Any separate glass panes should be stored indoors

Installation

It is important that the windows are installed correctly to maximise their function and service life. The work should therefore be carried out by professional installers with experience in installing windows and exterior doors.

The instructions in this manual cover some of the main points – but not all detailed issues – regarding the installation work that may be relevant to the installation.

The glass panes are normally fitted into the windows prior to delivery, but in the case of large, rigid frames and large integrated windows, the panes will often require fitting after the installation of the windows. The panes must be fitted in accordance with the installation instructions.

The frame is fitted normally into the aperture in the wall.

Make sure there is a uniform joint width around the side and top sections of the frame, and pay close attention to the level of the bottom section of the frame in relation to the sill/floor level.

The clear gap (joint width) between the frame and the surrounding brickwork is normally approx. 12 mm. On the hinge side, the frame must be plumb along both the broad and the narrow sides. The frame must otherwise be adjusted and secured to ensure the correct stops and clearances between the sash and frame all the way around.

Securing in general

Windows and exterior doors must always be secured to the surrounding building section using mechanical means such as frame screws/dowels or brackets.

If expanding foam is used to plug the gap between the exterior frame surface and the surrounding brickwork, the window must still be secured to the surrounding building section mechanically, such as frame screws/dowels or brackets.

Fitting tilt-and-turn windows and doors

Position the window in the aperture for the door/window, and place spacers under the side frames and posts, if required.
(See the instructions/conditions for doors in the separate section).

Make sure that the bottom section of the frame is horizontal and straight. Adjust the hinge side of the frame so that it is plumb along both the broad and the narrow sides. Support the hinge side with a firm base, and secure it in place with appropriate frame screws.

It is important to make sure that the top and bottom securing devices are positioned as closely as possible to the top and bottom section of the frame, because the tilt/turn hardware is designed in way that transfers a part of the load to the horizontal parts of the frame.

During installation, it is important to adjust the clearance, i.e. the gap between the frame and sash, to suit the function of the window.

Adjust the closing side so that it aligns with the sash and makes full contact. All closing points must have sufficient clearance in order to provide optimal window functionality during operation. Make sure that the locking pin engages correctly. Then use appropriate frame screws to secure the rest of the window to a solid base.

The side, top and bottom sections of the frame must be equally square and must not bend, as this will cause functional problems.

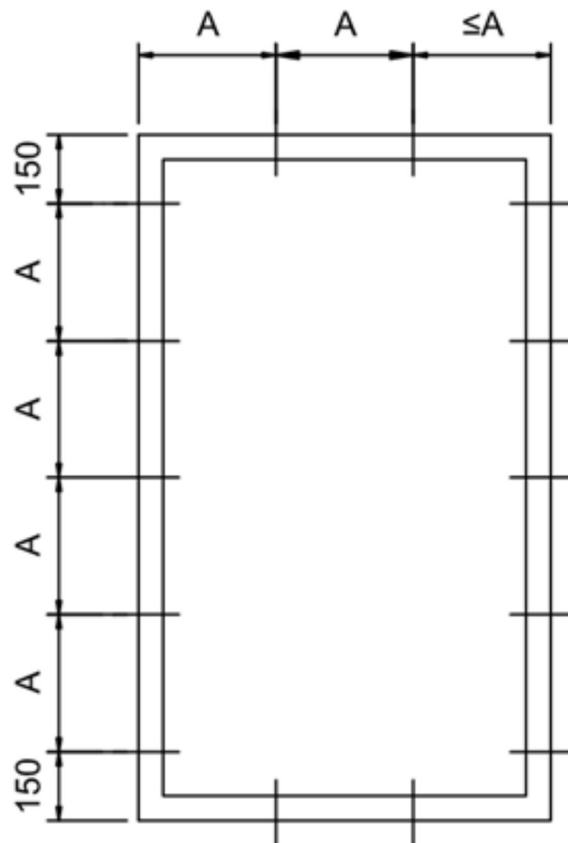
After installation, remove any drilling dust from the frame and fittings. Then lubricate all closing points and articulated joints in order to assure long term and problem-free function. It is recommended that you wipe sealing profiles with a silicone stick.

Fixings / distances / materials

It is important to ensure that the chosen securing method is appropriate for the relevant structure. Certain aspects of the surrounding structure may dictate the type and number of fixings.

Follow the guidelines below when securing HansenMillennium® windows

Distribute the fixing points as shown in the diagram below, but make sure there is no more than 600 mm between the fixing points.



The illustration above is a general guideline for installation.
If a different distance between fixing points has been calculated for the relevant project, the calculated distance shall be applicable.

Removing the glass pane

1. Loosen the glazing gasket with a glazing shovel to avoid damaging the glazing bead or the pane itself



2. Remove the glazing gasket



3. Remove the glazing beads – remember to secure the panes to prevent them falling out (e.g. use a suction pad and support).

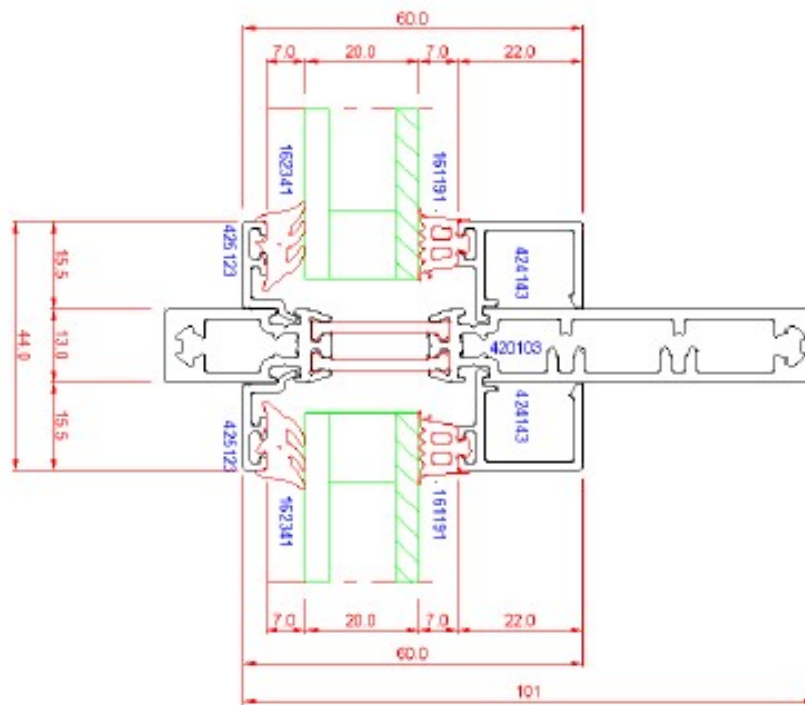


4. Lift the pane out

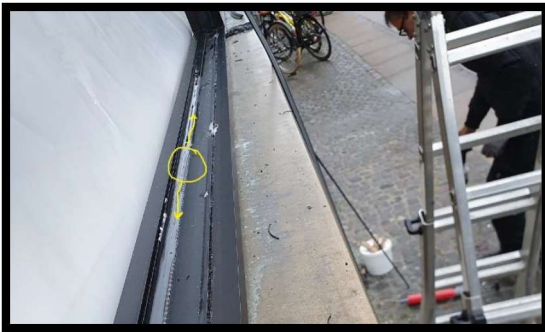


Sealing when using external rebate profile

When using the external rebate profile to mount the glass there is a risk that the effect of the drainage will be reduced. It is therefore very important to ensure the drainage water is controlled out of the system.



This is done by placing a joint of Sikasil WS 605 along the internal glazing bead. The sealant should be continued throughout the corners as illustrated below.



Fitting the pane support / glazing block

Position the pane on glazing blocks/ stainless steel pane supports. Make sure that the glazing block is sufficiently wide to support the outer layer of glass in the insulating glazing unit (IGU).

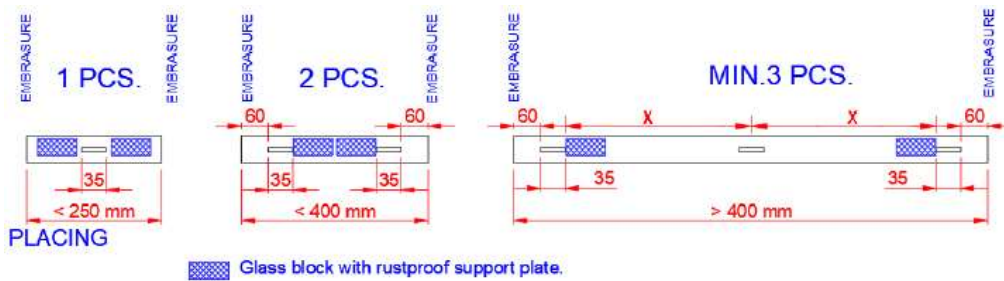
Once the pane has been fitted, the maximum permitted deflection in the transom is 2 mm. If the deflection exceeds 2 mm, contact the project manager.

If the pane weighs more than 200 kg, or is broader than 2,000 mm, or the project involves the use of T-profile transoms longer than 1,500 mm, contact the project manager to confirm the size/type (length) and positioning of the pane support.

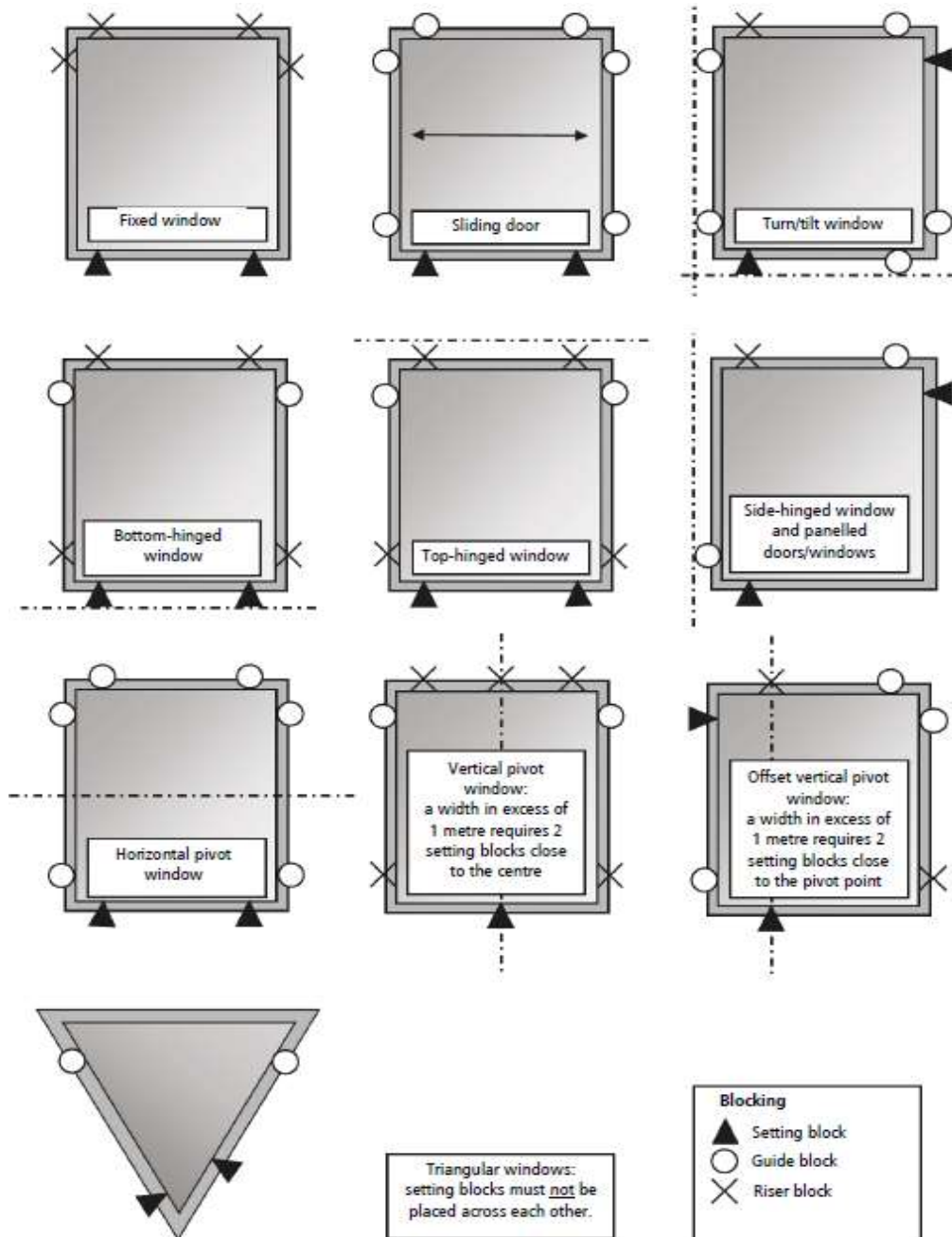
Position the extruded aluminium glass support on top of the crown and tilt it in behind the rubber slot to the correct position.



The position of the glass support may be a max. 100 mm from the corner of the glass to the centre of the support.



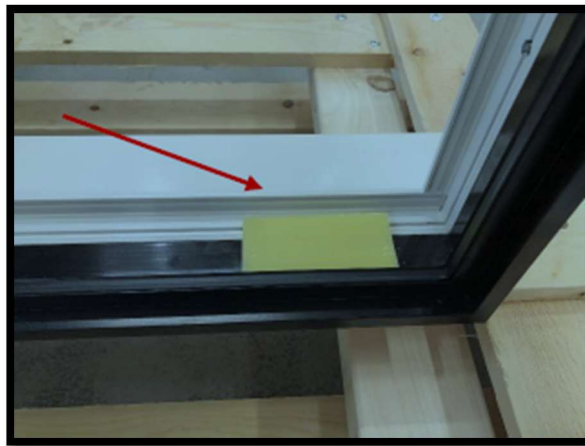
The glass supports must be positioned in accordance with EN 12488:2016 and the Technical Requirements.



If the window must be lifted using suction pads applied to the pane, this must be taken into account when positioning the glass support.

Place the glazing block wedge on top of the aluminium pane support

The glazing block wedge must be at least as wide as the thickness of the insulating glazing unit, and it must support the window's outer pane.



Installing the pane

1. When inserting the pane, temporarily secure it in place with the top and bottom glazing beads. For example, insert a glazing block wedge or a similar plastic device that will not damage the glass.

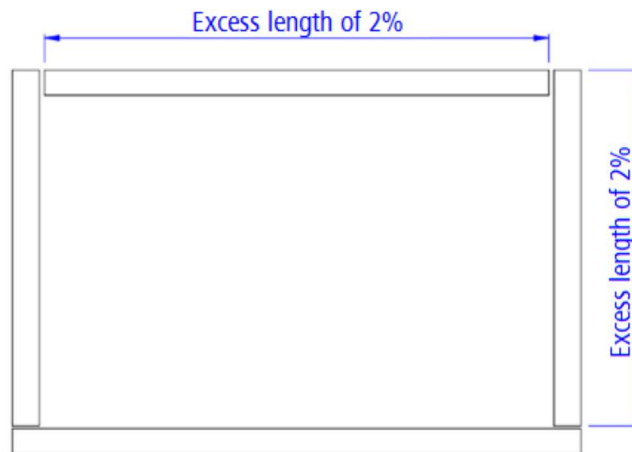


2. Then insert the vertical glazing beads, which must also be hold in place with glazing block wedges. Position the pane correctly and “clamp” it in close contact with the exterior glazing gasket using e.g a glazing shovel.



3. The temporary glass fastening shall be maintained until beginning the installation of the internal glazing gasket. However for a maximum of 16 hours due to the risk of thermal breakage of the pane.

4. When inserting glazing gasket, it may be necessary to use new gaskets (discard the removed gasket). Adjust loose gaskets in accordance with the following instructions:
- a) The uppermost horizontal gasket is placed between the vertical glazing beads
 - b) The lower horizontal gasket is through-going
 - c) An excess of 2% shall be added to all lengths to counteract shrinkage over time



5. Use a lubricant (e.g., glycerine) when inserting glazing gasket. First insert the gasket at both ends and press the gasket down.

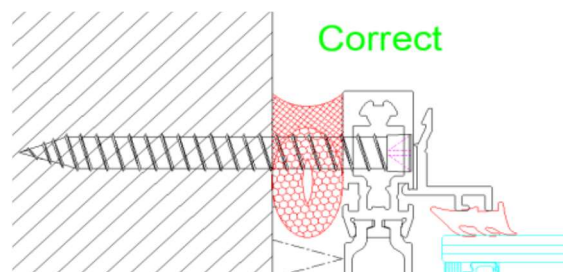


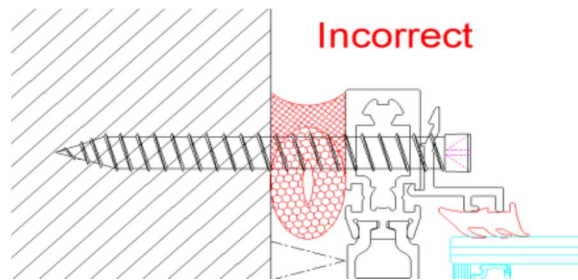
6. Ensure that the gasket's thickness is adjusted to fit tightly to ensure air-tightness and water-tightness.



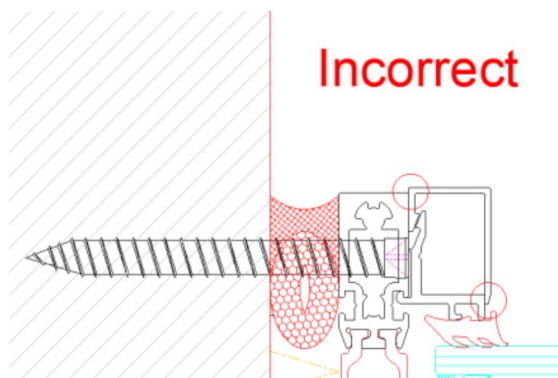
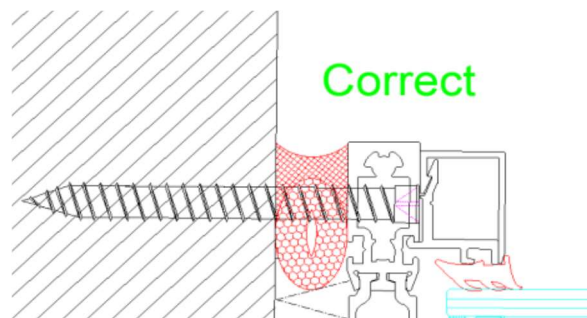
Click glazing bead – window delivered with the pane

1. When windows are delivered with the pane and the click glazing bead. First step of the installation is screwing it to the wall. Correct screwing is very important, otherwise, installation of the cap of glazing beads will not be possible.

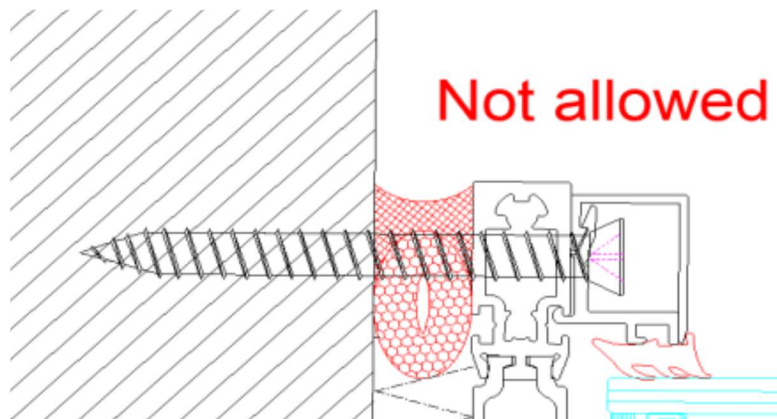
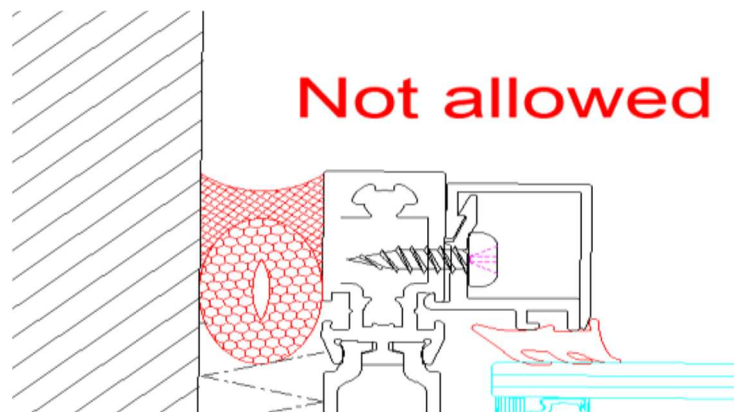




2. Next step is the Installation of the cap profile. Use a rubber or plastic hammer.
The correctness of the installation of the cover can be checked easily. If cap is installed correctly, then the face of the cap must be lower than the face of the frame or transom.

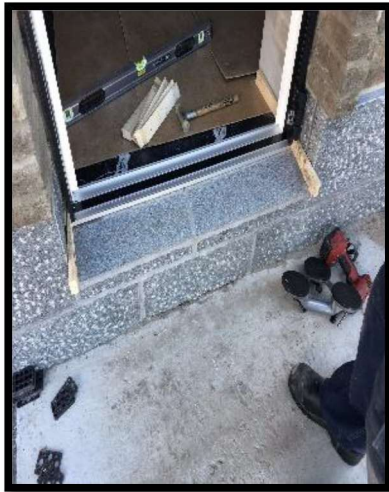


Important! Do not screw a basic of glazing beads by screw to the frame or to the wall by mounting screw. If bead will by screwed, removing of the pane will be very difficult or almost impossible because cap will have no lose, so not possible to remove without destroying of window elements.



Installation of Millennium doors.

1. Insert the door frame into the aperture so it is flush with the wall on both sides. Support the door with, e.g., wedges.



2. Position the frame so that it is plumb in all directions and adjust with wedges.

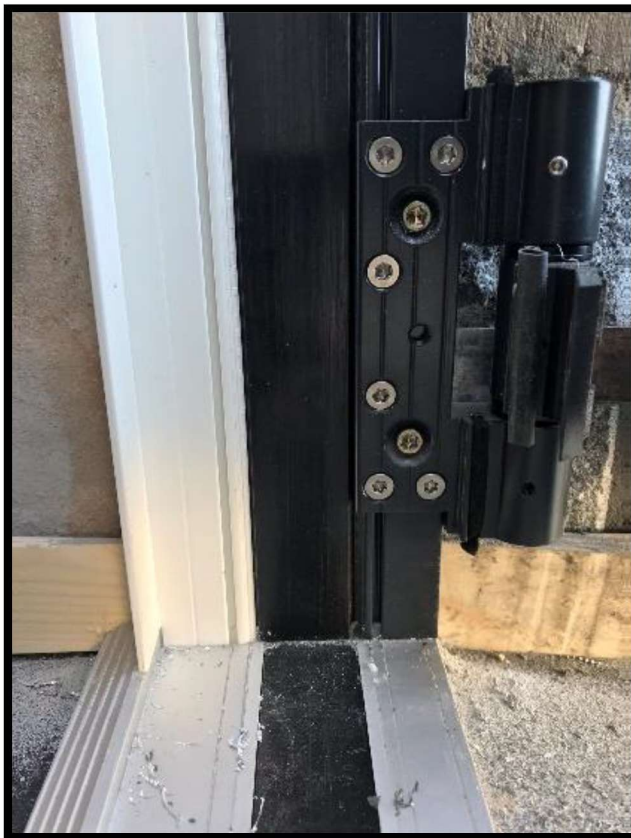


3. The hinge side is installed first - it must be 100% plumb.
(When the door is opened, it must stay in the position in which it is placed)
Installation holes are drilled through the door hinge.

Spacers of the same size as the distance between the frame and wall are placed adjacent to the hinge prior to fixing.
Spacers must support the interior and exterior of the frame.
There must be room to establish the correct joint before chocking.



4. The bottom wedge is removed and replaced with a spacer



5. If necessary, the frame is adjusted to ensure that it closes at the bottom first

Tilt and turn window

Tilt and turn window

The tilt and turn window (also called a side/bottom-hung window) is an inwards-opening window, which has both a tilt and turn function. The tilt function is used for daily ventilation, while the turn function is primarily used when cleaning the exterior of the pane. The window may have closing points all around it, depending on its size, but is still operated with only one handle, which is installed in the side sash.

Closed position.

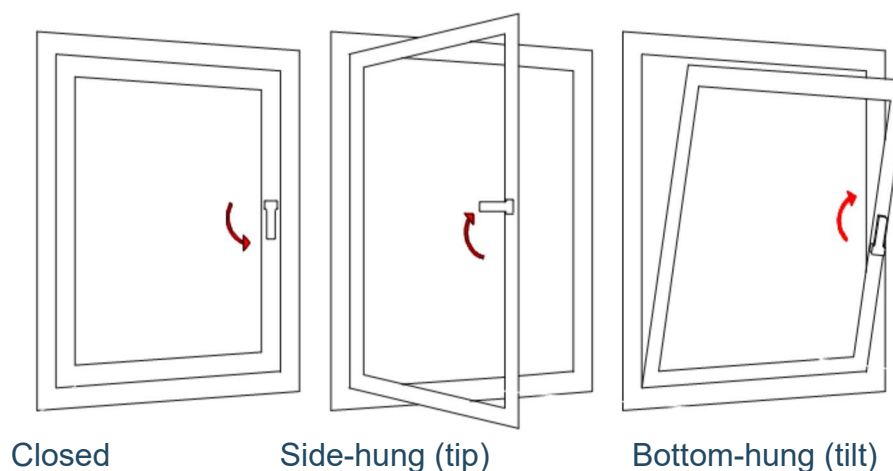
In the closed position, the handle is turned downwards.

Tilt function (bottom-hung) and ventilation position

The handle is turned from the lowest closing position to the vertical position, after which the sash can be tilted inwards, providing an opening of approx. 10-15 cm, depending on the size of the sash. The hardware can also be supplied with a function that holds the sash in the tilt position with an approx. 1 cm opening at the top. This position is achieved by moving the handle from the closed position to 45°, which is halfway between the closed and tilt positions.

Turning function (side-hung)

The handle is turned to 90°, and the sash can be opened in the side-hung position. If the hardware is operated incorrectly, the handle is turned to the horizontal position, the sash is pressed into the frame rebate and the handle is placed in the vertical position. From here, the window is closed again by placing the handle in the locked position, and the hardware is now back in its starting position.



Separating sash from frame

The sash is opened approx. 60° into the turned (side-hung) position, after which the locking pin in the shear on the top sash is lifted slightly, turned 90° anti-clockwise, and lifted out of the hardware in the sash. Then the maloperation lock is released by pressing on the small bracket on the sash next to the handle and by placing the handle in the tilt position. The sheer can now tilt freely - press the small button at the end of the red connecting rod, and the sheer can be lifted clear. Lift the sash away from the bottom hinge and remove it from the frame.

Maintenance, cleaning and lubrication

General information – Maintenance

HansenMillennium® aluminium windows and doors require only minimal maintenance. Under normal conditions, this means simply washing the external surfaces at regular intervals with warm water and a neutral cleaning agent to remove any dirt. The moving hardware parts should also be lubricated as required, and at least once a year. Simultaneously ensuring that all sliding rails, guiding rails, sealing beading and the like are kept free from dust and dirt will keep the element functioning smoothly for many years.

General information – Cleaning

The exterior aluminium sashes and frames will inevitably be affected by the surrounding environment, in which urban and industrial areas with high levels of traffic and air pollution, and coastal areas where the air is salty, will have a greater impact on the surface than rural areas with cleaner air. The façade sections should be cleaned and washed at regular intervals, and at least twice a year. This can be done at the same time as the windows are washed.

Wash the sashes and frames with warm water and a neutral cleaning agent (e.g. a car washing agent) and dry them afterwards.

General information – Lubrication

It is important to lubricate and maintain all hardware types to ensure smooth, unobstructed operation and the functions of windows and doors on an everyday basis. It is also a requirement for maintaining the windows' warranty. The frequency of lubrication and maintenance required depends on the use and exposure of the fittings to the weather, environment, air pollution etc. Experience shows that hardware used in, e.g., urban areas, industrial areas, areas with high traffic volumes and coastal areas with briny air need lubricating and maintenance work more often than hardware used in areas with less corrosive conditions.

Stainless steel handles and hardware

Our stainless steel handles and hardware are made of matt-brushed stainless steel - AISI 304 - as standard, which matches modern buildings

and provides optimum corrosion protection. The products can be used anywhere, for internal and external installation, where the products will offer optimum function and quality.

NB.

All hardware is lubricated during installation at the factory. Please note, however, that it is the responsibility of the party/contractor who is responsible for the installation to ensure that all moving parts, with the exception of friction parts/slide rails, are treated with a suitable lubricant prior to hand-over to the developer.

Generally speaking, all moving parts of hinges and closing/locking hardware are lubricated as required, but at least once per year.

Materials and surfaces

Stainless steel is particularly suited to operations that require high durability and hygiene and good corrosive resistance. Stainless steel forms a thin, protective oxide film that provides a closed, durable surface which provides great resistance against mechanical stress.

In spite of its nickel content etc., stainless steel is considered a non-allergenic material for door handles, hardware, etc. A number of component parts may be made from other materials, such as polymers, brass or aluminium. The decision to use these materials considered the optimal function, production and durability of the product.

Cleaning and maintenance

At regular intervals you should check the function and installation of hardware, and tighten any loose fixings and clean the product's surfaces. In areas and environments with increased exposure to sulphur and nitrogen oxides and in coastal environments with saline precipitation, the protective oxide film on stainless steel may be corroded, creating a stain of reddish brown flakes, which can resemble rust. This corrosion is, however, only superficial. This staining can be easily prevented or removed with normal cleaning of the surface. Clean with warm water, mild detergent, soft brushes or synthetic polishing sponges. In special cases, use a polishing agent particularly formulated for stainless steel. Never use scouring/steel pads or

steel brushes, as this may damage the surface! The product is only covered by the warranty when it has been correctly installed and maintained.

Environmental issues

Stainless steel does not emit any harmful vapours or metals of their own. Stainless steel is generally not classified as environmentally hazardous waste, but since the material contains, among other things, heavy metals, the products are disposed of as iron/metal commercial waste, which ensures optimum sorting and recycling.

Specific lubrication instruction – Tilt and turn hardware

Hinges, lock rollers and strike plates on tilt and turn (side/bottom-hung) windows and doors are lubricated with acid-free oil or grease while repeatedly activating them. Sheer hardware and

friction brakes must be lubricated in all joints while repeatedly activating them in order for the lubrication to move along the reciprocating moving arms. Lubrication must be applied both externally to the joints and in the gap between the arms. For this purpose, use a penetrating acid-free oil, followed by a long-lasting acid-free grease spray.

Sliding surfaces

All sliding surfaces are made of anodised aluminium and must be periodically cleaned in accordance with climate conditions and the degree of air pollution. It is recommended that you rub the surface with a cloth or sponge. Never use abrasive cloth, steel wool, soda or any other cleaning or polishing materials containing alkalis or acid on these surfaces; only neutral cleaning agents (car washing agent).

Espagnolettes

These are lubricated with acid-free oil or an acid-free grease spray in the lock housing, by the hook bolts and on strike plates. The lubrication must be combined with repeated activation.

General information regarding inspections of gaskets

Sealing profiles and glass tape should be inspected at the same time as the annual lubrication.

Gaskets

Gaskets are made from EPDM rubber, which is made from a combination featuring a solid base and a soft cell rubber contact area. Gaskets require no maintenance as such, but should be kept clean and free of debris. To do this, wipe it down once a year with a firmly wrung-out cloth that has been dipped in warm water and a neutral cleaning agent. The gaskets will benefit from being rubbed with a silicone stick to reduce friction during use. Also check that the position and adhesion of the gaskets are not compromised and

the profiles still perform their sealing function. All gaskets have been loosely installed in a continuous groove, simplifying the removal and reinstallation of the gaskets for most window types in the event of damage which requires replacement or in connection with surface treatment maintenance. Gaskets must never be painted over.

Glass tape

Our glass tape is made of rubber products that need no particular maintenance other than being kept clean and free from dirt as described under sealing profiles

Maintenance – powder-coated surface

As standard, the exterior aluminium is chrome-free and surface treated with polyester powder coating. This treatment produces an extremely strong and weather-resistant surface that requires minimal maintenance. In practice, this means that it only needs to be washed a couple of times a year with a soft brush or a cloth dipped in warm water, and a neutral cleaning agent (car washing agent). Small scratches in the surface treatment will not have any impact on the durability of the element because exposed aluminium quickly forms a natural oxide layer that prevents corrosion and the occurrence of white rust.

Maintenance – anodised surface

The external aluminium may be delivered anodised. After the aluminium profiles have undergone the chemical pre-treatment process and have been thoroughly cleaned, they are subjected to an electrolytic process. Direct current is run through the profiles, which become anodised, resulting in the surface metal being converted into oxide. The process continues until the desired layer thickness has been achieved. An anodised surface treatment provides particularly effective resistance to corrosion in most environments. The surface is also extremely smooth and dirt-repellent and can look “new” for protracted periods.

Anodised aluminium profiles are almost maintenance free, as long as the surface is cleaned regularly. In practice, this means washing it a couple of times a year with a soft brush or a cloth dipped in warm water, and a neutral cleaning agent (car washing agent).

Window panes

Interior condensation on insulating glazing units.

Interior condensation can form on insulating glazing units depending on:

- The volume of moisture generated by the activity of the residents
- Heating in the room
- Ventilation conditions.

If condensation runs down a window pane and into the sash/frame structure for an extended period of time, this can lead to the development of mould. There are several things/conditions that can cause moisture in homes. Be aware of the following:

- New windows close considerably more tightly than old ones. After replacing windows, you will therefore need to ventilate your home more often (and for longer) than previously.
- Newly built houses must be ventilated more often than old ones. The drying out phase for new buildings can last for more than a year. This also applies to extensions and renovations.
- An adult person, or a medium-sized dog, emits approx. 2 litres of water per day.
- Cooking, bathing/showering and washing and drying clothes for two adults and two children will easily generate 3–5 litres of water per day.
- Problems with humidity increase when the room temperature is lowered, and they decrease when the room temperature is raised. Even a short-term reduction in the temperature (at night, for instance) can cause condensation to form on the windows.
- Tight curtains and broad window sills/frames can cause the air to stand still around the window panes. This makes the air cold and humid and causes condensation to form on the glass.
- Insufficient ventilation produces a poor indoor climate that can cause coughing, headache, stinging eyes, rashes and allergic reactions in the airways.
- A residence that has been subjected to high levels of air humidity for 8–14 days must be aired particularly thoroughly. The best way to do this is to leave 2–3 windows open in the ventilation position all day long, at the same time as you raise the temperature 4–5°C above the normal level for 8–10 days. You can also leave the cooker hood switched on in the kitchen 24/7.
- Days with calm, sunny weather will produce more solar gain than the heat that escapes during normal ventilation.
- Finding the optimal point for saving energy and minimising problems with moisture is a balancing act.

External condensation on insulating glazing units.

It is mainly in recent years that people have started experiencing external condensation (dew) on energy-saving windows. Condensation forms when radiation into the open air results in the temperature on the outermost layer

of glass falling below the dewpoint temperature of the outdoor air. This condition typically arises during periods in which the relative humidity (RH) of the air approaches 100%. External condensation on energy-saving windows typically forms in the spring and autumn months – usually at night and in the early morning hours, until it disappears with the sun and the wind. The problem can be especially noticeable in April and September. This is often due to the window panes transmitting little heat, thus not helping to remove the exterior condensation. The problem is especially common on integrated windows with triple glazing.

Thermal breakage

When installing insulating glazing units in the sash and for Millennium window designs, HSHansen a/s has taken into account the fact that the glass “works” as a natural response to temperature fluctuations.

If a thermal window is subjected to uneven heat influences, this can cause thermal breaks in the glass.

If, for example, the window is exposed to partial shadow, or if (especially dark-coloured) streamers, posters or signs are affixed to the window, or if the window is painted over fully or in part, or if plastic film/a sun filter is applied to the glass.

The same can occur if heat-reflecting materials are placed close to the window, or if ventilation is complicated by heavy curtains, blinds or large plants which can cause uneven heating of the window pane.

Under such conditions, insulating glazing units can absorb so much solar energy that the tension causes the glass to crack in a distinctive manner.

To prevent thermal breakage under such conditions, toughened glass must be used for insulating glazing unit. Damage caused by the conditions mentioned above is not covered by the warranty issued by HSHansen and the glass supplier.

Warm edge

Warm edge is a spacer moulding between the layers of glass in low-energy windows. This spacer moulding conducts less heat than a conventional spacer, meaning that it increases the temperature along the edge of the window pane. As a result, the heat bridge is reduced, minimising the risk of interior condensation in the edge zone. As a part of the production process, the warm edge spacer is fitted in the individual insulating glazing unit before the window is assembled and finished. This means that the point of application can differ minimally from pane to pane in individual glazing units. This deviation does not, however, affect the insulating abilities of the warm edge.