



RULES FOR THE USE OF WINDOWS AND DOORS

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1. GENERAL RULES ON OPERATION OF THE PRODUCTS

JSC „Doleta“ windows and doors are high quality products. Properly maintained, their properties remain unchanged for a long time, while the naturalness of the wood provides comfort and cosiness. Frequently during construction work or when finishing work in the premises, the products cause irreparable damage. In order to prevent it, the following rules must be complied with:

You must protect the surface of the products. When carrying out the decoration of the mounted products or the general repair works of the premises, protect the products so that no building materials or mixtures (lime, plaster, cement, paint, etc.) are left on wooden surfaces, glasses, locks, hinges, fittings and other surfaces.

If you enclose any windows or doors during construction, be careful not to damage the products.

Try to carry out the work so that the moving parts of the fittings do not allow to get in the construction rubbish, dust resulting from plastering, polishing or grinding, and if they get in, clean it.

It is advisable to remove the sealed protective film no later than one week after it is sealed, as after shrinking, the film glue can remain and the paint can loosen up on the surface of the product.

In the event of a low temperature / humidity ratio in the room, condensation may form on the surface of the products, i.e. products can be steaming, which can be very harmful to them. If condensation occurs on product surfaces, immediately ventilate the premises: open windows or doors, and clean the moisture from the wooden surface with dry material or paper. The wood moisture content of all wooden windows is $14 \pm 2\%$. Due to bad ventilation, wood moisture reaches a critical limit and exceeds 22%. Then the mosses of blue spots are propagated in the wood, otherwise called mould. This process cannot be stopped.

When doing construction, interior decoration, repair works, avoid mechanical damage to the paint coating or the surface of the product frame, to protect the product against mechanical damage, scratches, cracks, etc.

For cleaning products, use only cleaners that do not contain aggressive materials (thinners or abrasives) that may damage the wooden surface, anti-corrosion coating or scratch the glass. Product frames cannot be cleaned with a rough brush or abrasive powder.

Do not pollute the rubber gaskets with the building rubbish and clean the building rubbish from the window binding.

Do not use a window with a deactivated window shutter mechanism, as the product's wooden frame and / or lacing mechanism will be damaged. In this case, you need to contact a dealer who has sold your products.

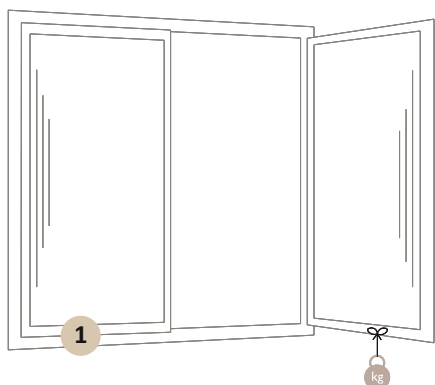
The relative room humidity should be 50-60%.

Water tightness and air permeability tests does not apply to: lift&slide doors, windows with false mullion and non-catalogue products.

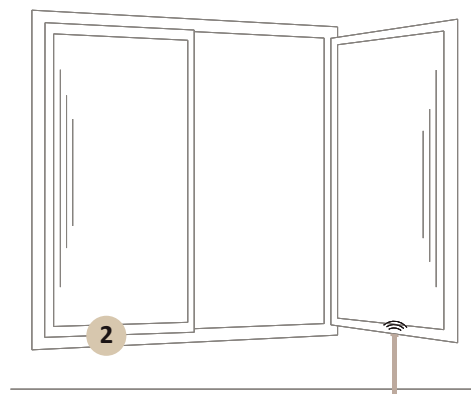
The manufacturer has the right to change technical solutions and materials to better without prior notice.

2. GENERAL PRECAUTION RULES

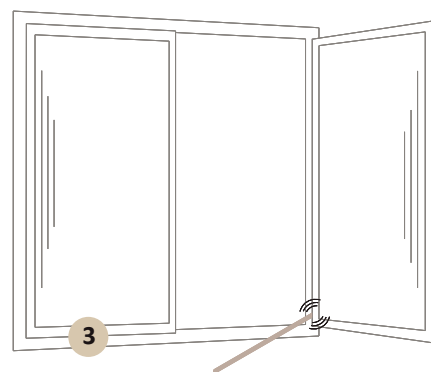
To avoid mechanical damage to the product, observe the following prohibitions:



1 Do not load the product panel with additional weight.

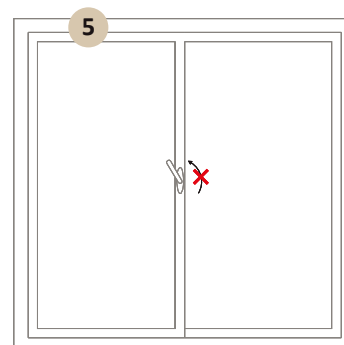
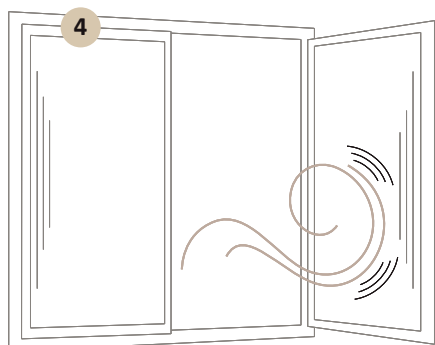


2, 3 Do not place any additional objects between the panel and the jamb, as the window or door frame will be deformed, hinges and gaskets will be damaged.



4 Do not leave the window opened or doors unattended because the draught can open the window panel.

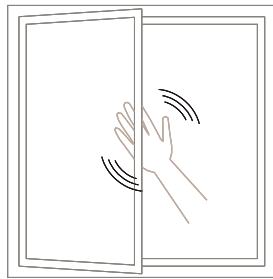
5 Turn the windows and door handles only in the direction of their rotation and do not exceed more than you can.



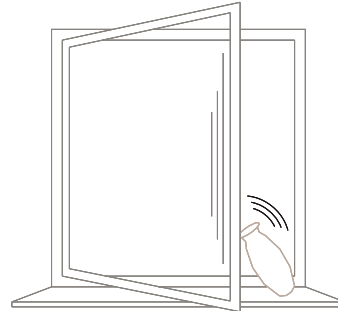
Be careful and follow the safety precautions when installing or using windows or doors:



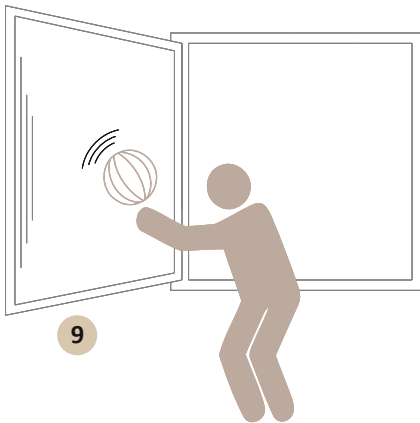
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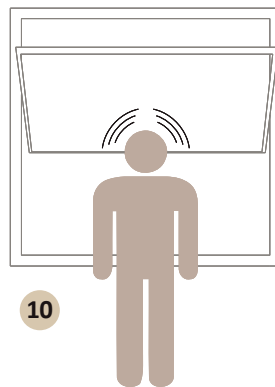
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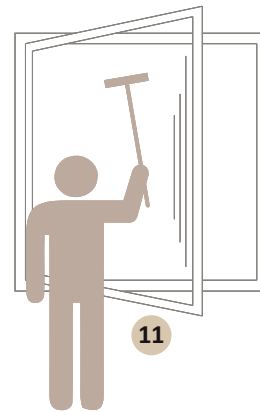
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- 6 Do not fall out through an open window or door.
- 7 Do not squeeze your fingers while working with windows and doors.
- 8 Do not leave things unattended on the window sill when the windows or doors are open, as the window or door panel can overturn them when they are in a draught.
- 9 Do not get hurt when working under open panels, protect children from injuries.
- 10 Do not get hurt by rising shingles. Opening elements can automatically rise by separating the supporting structures and injuring nearby ones.
- 10 While cleaning windows or doors, use a cloth with long coats, do not turn it over to clean it from the outside.

3. INSULATING GLASS UNITS

The glass packet is the most important part of a window or door occupying the largest area of the product which is subject to various requirements – protection against environmental impact, heat, sound insulation, security, decorative, solar control, etc. The glass packet consists of two or more hermetically sealed glass tubes, with closed sealed chambers that can be filled with inert gas. Glass packets must be protected, avoid decomposition factors, and observe the following rules:

Do not place heating appliances closer than 30 cm away from the glass surface. If the glass is tempered, the distance must be at least 15 cm. This will avoid thermal shock.

When the heating season starts, raise the temperature of the heating devices gradually rather than suddenly.

Please note that the temperature of the heating devices adjacent to the glass must not exceed 65°C.

Do not apply any film on the glass, because the glass packet can break up due to different thermal stresses.

Please note that the toned windows must be lighted or be in the area of shade, otherwise the unevenly heated glass may be cracking.

To ensure automatic window ventilation, when installing blinds, ensure that the blinds and the window do not touch anything, and keep the distance of at least 2 cm between the window and the blinds throughout the window.

If there is a fireplace beside the window, a protective shield must be installed between it and the window, which prevents the glass pack from becoming hot. Otherwise, a glass packet can explode while using the fireplace.

Please note that the glass may also be defective due to the effects of cooling and conditioning devices located near the glass, as well as insufficient indoor heat (usually if not fully heated during winter).

Do not place dark objects near the glass unit. Do not lean any items on it.

Pay attention to the fact that the heating system located near the vitrine window must occupy at least 70% of the window width.

The guarantee for packages of thermal defects, defects due to pressure changes, external strokes and mechanical damage is not available.

The following physical phenomena can occur in glass packets:

- Interference effect;
- Glass packet (double glazing) effect;
- Anisotropy;
- Condensate formation;
- Thermal shock.

Physical phenomenon	Definition explanation
Interference effect	Glass packets with float glass can have an interference effect. This effect affects the colour areas of a larger or lesser intensity that change when you press the glasses. Optical interference occurs due to overlap of light waves at one point. The effect is enhanced in the case of parallel or almost parallel glass surfaces. The effect of the interference can be seen on the surface of all or part of the glass surface. The interference phenomenon occurs randomly and cannot be influenced.
Glass packet (double glazing) effect	The glass packet has an enclosed airtight volume or other gas volume. The gas condition in the glass packet is determined by the production altitude, atmospheric pressure and temperature during production. If the glass packet is installed at a different altitude, the atmospheric pressure or air temperature changes during the operation, glass packet deforms, i.e. bending or curving. This may result in distortion of the image through the glass packet. Glass packets may also show reflections of various intensity images. The reflections can be seen particularly clearly if there is a dark background or the use of glazing with coatings.
Anisotropy	Anisotropy is a phenomenon typical of tempered glass due to internal strains caused by the hardening process. Due to anisotropy, dark circles or bands may appear, which vary according to the angle of view, if the glass is in polarized light or viewed through polarized glasses. Polarized light is also in normal daylight. The degree of polarization depends on the weather conditions and the position of the sun. The effect is more pronounced when looking at glasses at a sidelong angle or angular facades or at the corner facades of glass packs mounted at right angles.
Condensate formation	The condensate may form on the outer surface of the glass if the temperature of the glass surface is lower than ambient air. The formation of a condensate on the outer surface of a glass packet is due to the heat transfer coefficient of the glass packet, the relative humidity of the air, the movement of air to the glass surface and the temperature of the outside and inside air. The condensation on the glass surface inside the room is usually due to insufficient movement of air to the glass surface, for example, due to curtains, blinds, deep arcs, flower pots, unfavourably positioned radiators and increased room humidity.
Thermal shock	The mechanical strains induced by the heat influence (glass-glazing or glass packets) arise when the temperature difference between the two glass-surface points appears. The reasons for the difference in temperature are: 1. Solar rays (the effects of sunlight depend on the orientation of the glazing plane in relation to the directions of the world (south, west, etc.); 2. Glass cracks may occur due to improper installation of heating and cooling equipment.

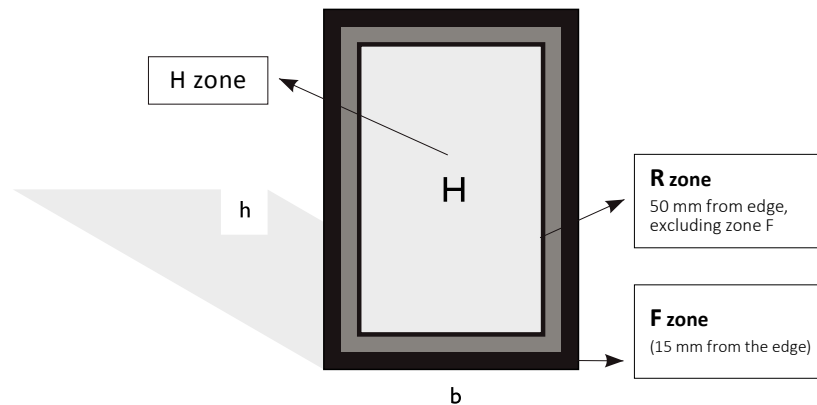
All of the listed phenomena are not defects in the glass packet!

4. REQUIREMENTS FOR INSULATING GLASS UNITS

4.1 Visual glass packets defects and their settings, defect assessment and parameters

When checking defects in glass packets, the most important thing is the overall view through the glass packet, i.e. looking at the background and behind it, not the reflections. Possible inconsistencies are not specifically depicted or described.

Inspection of glass products, according to the table below, must be carried out from a distance of 3 meter from the viewing surface at a certain angle of observation which corresponds to the generally accepted use of the premises. Inspection proceeds to diffuse daylight (e.g. to the sky), without direct sunlight or direct artificial illumination.



Explanations:

- F** – sealing zone: width 15 mm from the edge (no restrictions other than mechanical damage).
- R** – perimeter zone: 50 mm length of glass surface and 50 mm wide excluding sealant zone (less stringent assessment requirements).
- H** – main zone (more stringent requirements).

Zone Allowed in one product:

F

Damage in the outside surface and edges, including washout, which do not affect the strength of the glass and does not exceed the width of the sealing layer.

Washout inside, without fragments, is filled with insulating mass.

Spot and surface compounds and scratches – without limitation.

Gaskets, blisters, dots, stains and so on defects:

where the sheet area is $\leq 1 \text{ m}^2$: not more than 4 pcs, each with a diameter $\leq 3 \text{ mm}$

when the sheet area $> 1 \text{ m}^2$: not more than 1 pc, with diameter $\leq 3 \text{ mm}$, per meter of perimeter

R

Spot sediment between the glasses:

when the sheet area is $\leq 1 \text{ m}^2$: no more than 4 pcs. each with a diameter of $\leq 3 \text{ mm}$

when the sheet area $> 1 \text{ m}^2$: not more than 1 pc, with diameter $\leq 3 \text{ mm}$, per meter of perimeter

Sediment in the form of stains between the glasses:

white grey and translucent – no more than 1 unit, area $\leq 3 \text{ cm}^3$

Scratches: The amount of individual scratches – no more than 90 mm, one scratch length – no more than 30 mm.

Micro-scratches: not allowed in larger groups

H

Gaskets, blisters, dots, stains and so on defects:
sheet area $\leq 1 \text{ m}^2$: no more than 2 pcs. each with a diameter $\leq 2 \text{ mm}$;
 $1 \text{ m}^2 <$ sheet area $\leq 2 \text{ m}^2$: no more than 3 pcs. each with a diameter $\leq 2 \text{ mm}$;
 $2 \text{ m}^2 <$ of glass sheet $\leq 3 \text{ m}^2$: not more than 5 pieces, diameter of each $\leq 2 \text{ mm}$;
Glass sheet $> 3 \text{ m}^2$: 5 pieces + 2 pieces / m^2 diameter of each $\leq 2 \text{ mm}$.

Scratches: The amount of individual scratches – no more than 90 mm, one scratch length – no more than 30 mm.

Micro-scratches: not allowed in groups.

R + H

The maximum number of defective discrepancies is the same as in zone R. Gaskets, blisters, points, spots, etc., with dimensions of 0.5-1.0 mm, are available without limitation, except when they are in groups. „Group“ means that at least 4 pcs of blisters, dots, spots or similar defects are located inside the circle with a diameter $\leq 20 \text{ cm}$

Notes:

Defects of dimensions $\leq 0.5 \text{ mm}$ are not evaluated. The area of such defects must not exceed 3 mm in diameter. 25% increase in tolerance for double units.

Laminated glass:

For each laminated glass sheet R and H, 50% larger number of defects is allowed in the groups.

The laminated glass with liquid tar can be wavy due to the manufacturing process.

Tempered glass:

The local wavelength at the glass surface may not exceed 0.3 mm on each 300 mm section

In the case of a nominal glass thickness of 6 mm to 15 mm, the curvature of the glass surface, depending on the thickness of the glass, cannot be more than 3 mm for each section of the 1000 mm glass edge length.

4.2 Tolerated errors

4.2.1 Permitted thickness of the sealant seal

Structure	Permissible thickness tolerance
Single-chamber glass packet	$\pm 1,0 \text{ mm}$
Double-chamber insulated glass packs	$\pm 2,0 \text{ mm}$
With tempered glass	$\pm 1,5 \text{ mm}$
With laminated glass	$\pm 1,5 \text{ mm}$

Frame linearity tolerance:

In single-chamber units with an edge length of $\leq 3.5 \text{ m}$, frame bending is allowed up to 4 mm, with frame length $> 3.5 \text{ m}$, frame bending is allowed up to 6 mm.

In the case of double-chamber units, the tolerances on the position of the frames in relation to each other or to the edge of the glass are 3 mm for side lengths $\leq 2,5 \text{ m}$ and 6 mm, for side lengths $> 2,5 \text{ m}$.

The assessment shall be made perpendicular to the surface of the glass, looking at the frame at eye level. It is also recommended to use dark colored frames to reduce visually undesirable, though permissible, standard frame slippage.

4.2.2 Permissible dimensional error

Rectangular

Edge length: ≤ 2000 mm	2,0 mm
Edge length: 2001–3500 mm	2,5 mm
Edge length: > 3500 mm	3,0 mm

Forms

Edge length: ≤ 2000 mm	2,0 mm
Edge length: 2001–3500 mm	3,0 mm
Edge length: > 3500 mm	4,0 mm

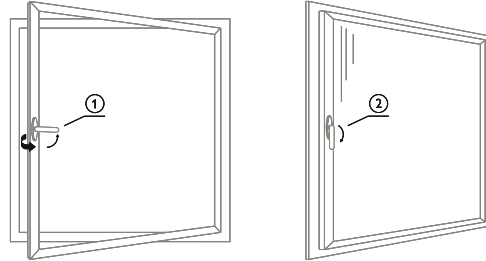
4.2.3 Permitted glass packet thickness error

The first glass	The second glass	Glass packet thickness tolerances
Simple glass	Simple glass	± 1,0 mm
Simple glass	Tempered glass	± 1,5 mm
Simple glass	Laminated glass (6 mm-12 mm)	± 1,5 mm
Simple glass	Patterned glass	± 1,5 mm
Tempered glass	Tempered glass	± 1,5 mm
Tempered glass	Laminated glass (6 mm-12 mm)	± 1,5 mm
Tempered glass	Patterned glass	± 1,5 mm

5. WINDOWS AND DOORS LACING

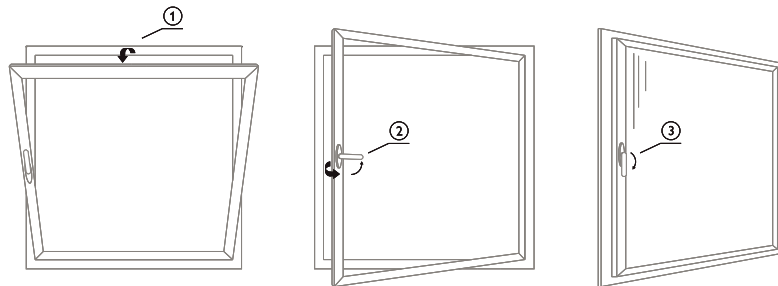
5.1 Casement window lacing

- 1 The window is open
- 2 The window is closed



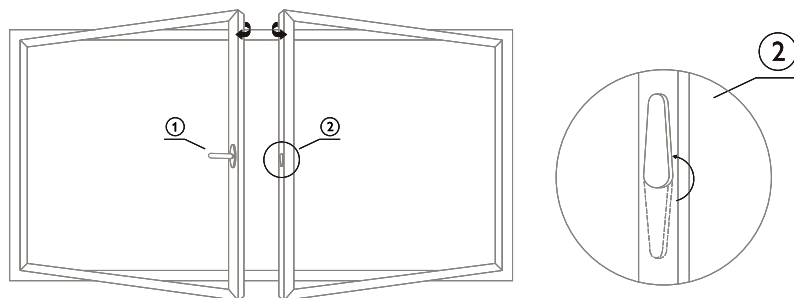
5.2 Casement / hopper window lacing

- 1 The window is pivoted
- 2 The window is open
- 3 The window is closed



5.3 Awning window lacing

- 1 The main panel
- 2 Subsidiary panel



Opening: after opening of the main panel (1) and window fastener located on the frame of the subsidiary panel (2), move it upwards and open the panel;

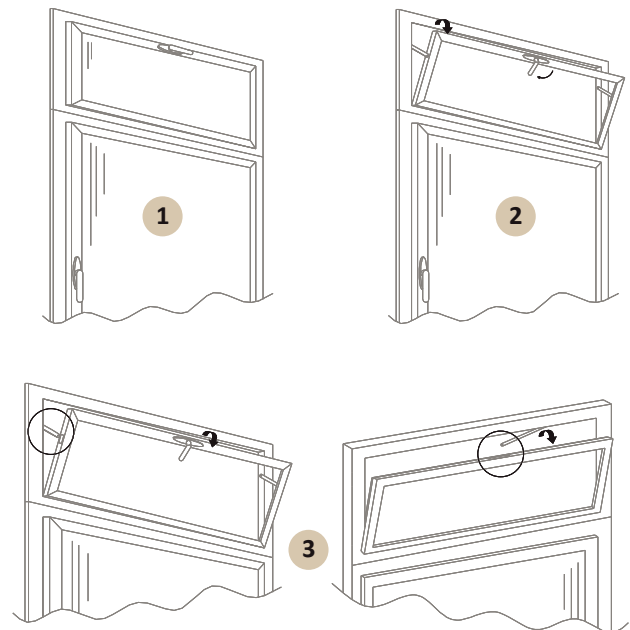
Closing: close the subsidiary panel first, move the window fastener downwards and close the main panel (1).

5.4 Opening of the horizontal pivot window and disconnection of friction stays for cleaning of windows

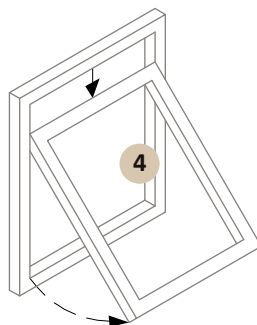
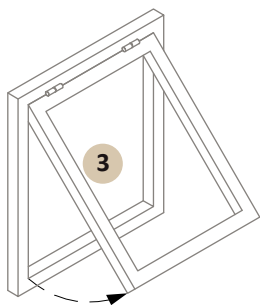
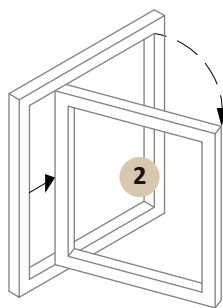
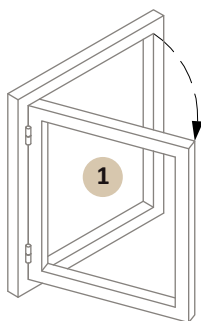
1 The window is closed

2 The window is open

3 Windows scissors unlocking



5.5 Wooden windows with outward opening



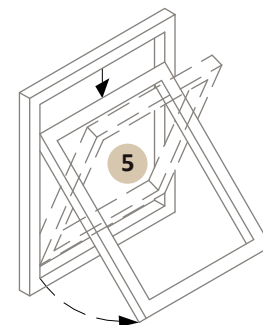
1 SIDE HUNG

2 SIDE SLIDING

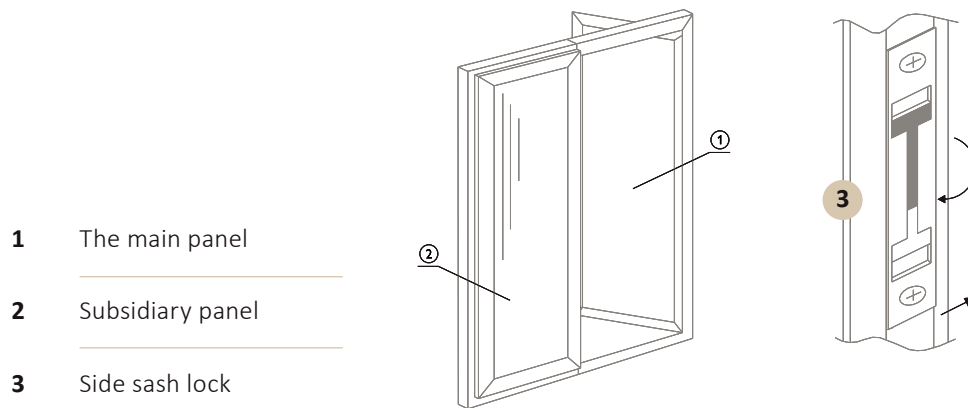
3 TOP HUNG

4 TOP SLIDING

5 TOP SWING



5.6 Swing doors lacing



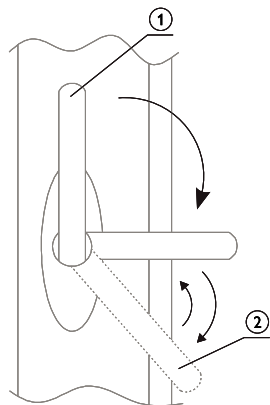
Opening: after unlocking of the main panel (1), open it. Move the door fastener located on the subsidiary panel downwards; the subsidiary panel will unlock – open it.

Closing: close the subsidiary panel first, move the door fastener upwards and close the main panel.

5.7 Sliding doors lacing

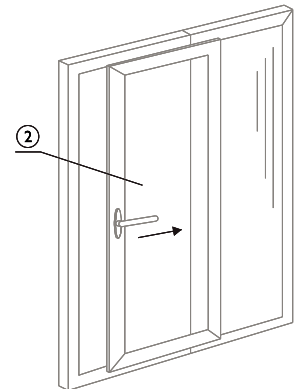
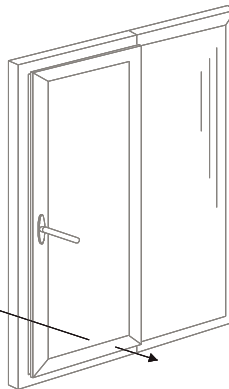
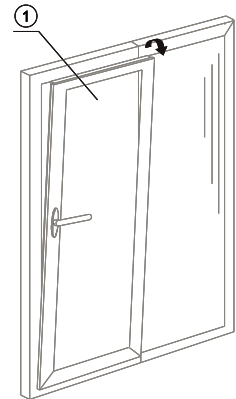
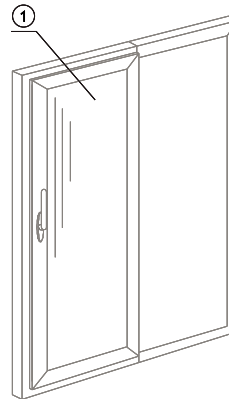
1 The door is closed

2 The door is open



1 Push against the bottom of the door

2 Slide the door

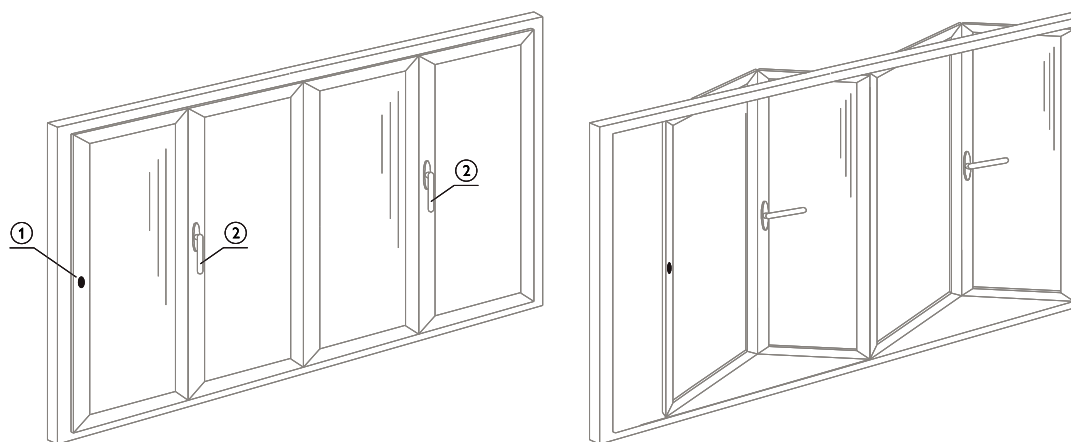


The door handle is in upward position (1) – in order to open the door from the top, move the handle to the horizontal position.

Opening of the door: the door handle is moved downwards (2) – in order to push the door, move the door handle from the horizontal position – the bottom of the door panel will unlock, the door handle will return to the horizontal position, then push the door open.

Closing of the door: push the door towards the closing position - the bottom of the panel will get into the rail and lock in the pivot position. Move the handle upwards from the horizontal position towards the vertical one (1). The door will be closed.

5.8 Folding doors lacing



Opening of the door: open the lock (1 – where applicable), move the handles (2) to the horizontal position and fold the door elements.

6. INFORMATION ABOUT CAUSATION, IMPACT, ELIMINATION OF CONDENSATION

Factors that cause condensation

- Excessive moisture in air;
- Collision of warm damp air with cooler surfaces.

When the temperature inside and outside are different, the temperature of the glazing unit is usually cooler than the inside temperature, the air inside the room is moving and when it reaches the cooler surface, when the relative humidity is quite high, the water vapour condenses and cooler surfaces start weeping.

Factors that cause indoor moisture and increase moisture:

- Every person releases a certain rate of moisture to the air during his/her sleep. Thus, in the morning moisture inside the building gets higher, this shall be removed by ventilation of rooms. Besides, every person releases a certain rate of moisture when he/she breathes and sweats;
- Laundry or showering increases temperature and moisture inside the room;
- Cooking increases the rate of moisture in the air;
- Abundance of plants inside the room;
- Wrong arrangement of heating devices;
- The air cannot move near the window, i.e., the window is fully covered with curtains or blinds, abundance of plants on the windowsills;
- Use of water inside the room increases the rate of moisture.

Relative humidity	<p>Water tends to evaporate. Air can accept water molecules until it reaches the dew point - the limit of saturation that depends on the air temperature. The air temperature of +30°C can retain 30.3 g/m³ water and the maximum saturation limit at the temperature of 0°C is 4.8 g/m³. The air temperature minus 10°C can retain 2.14 g/m³ of water. When air of a certain temperature is saturated with the volume of water vapour that it can bear, the relative humidity is 100%. When air saturated with water gets colder, it cannot retain water, formation of condensation - weeping starts. Cooler air can retain a lower rate of water vapour than a warmer one. Thus, the air at the temperature of 15°C and 100% of humidity holds less water vapour than at the temperature of 25°C and 100% of humidity.</p>
Dew point	<p>Dew point is the temperature to which air that has the initial temperature and relative humidity cannot accept more humidity. Formation of the dew point depends on the following factors:</p> <ol style="list-style-type: none"> 1. External temperature; 2. Insulation of the window profile and thermal insulation of the glass; 3. Room temperature; 4. Relative humidity of the room temperature. <p>Relative humidity of the air that cannot take more humidity, saturated with water is 100%. Where air of +20°C temperature can contain 17.3 g/m³ of water (relative humidity is 100%), the mean normal humidity of the working environment of +20°C is 50%, which makes 8.7 g/m³.</p>
Measuring of relative humidity	<p>Relative humidity can be measured by using a special measuring device – hygrometer.</p>
Heat transfer coefficient of glazing units U	<p>Heat transfer is expressed by heat transfer coefficient U – heat transfer per 1 m² surface area in case of 1 degree of Calvin or Celsius temperature difference between different sides of the surface (W/m²K). U is a heat transfer coefficient demonstrating the level of heat loss of the glass or glazing unit. It is expressed in (W/m²K). The lower volume of U, the better retention of heat by the glass of glazing unit and the better thermal qualities of the window: weeping of the glazing unit is a rarer phenomenon; staying next to such a window is more comfortable, since no chill is spreading from the window when the internal and external temperatures are different.</p>
Allowed level of humidity inside the building	<p>The allowed level of humidity that is 40-60% established in the HN 42:2004 “Microclimate of dwelling and public use buildings” shall be observed in buildings. The higher level of humidity is harmful to people suffering from asthma, and allergies and increases the risk of respiratory diseases. Humidity inside the rooms make a perfect environment for development and growth of bacteria and mould, other microorganisms, spores of which spread in the environment and can cause risk to human health.</p>
Substantive drawbacks of modern houses that cause condensation	<ul style="list-style-type: none"> • Windows close too tightly, thus there is no ventilation through gaps; • For energy saving various insulation systems are being installed, which retain heat better. Modern homes are more airtight and the excess humidity can hardly be eliminated without ventilation of rooms; • When modern houses are being installed and more airtight mechanisms are selected, more efficient ventilation system shall be installed, too so the accumulated excess humidity could be removed outside.

Removal of excess humidity

- The most efficient and fastest way to remove humidity inside the building is VENTILATION BY WINDOWS WIDE OPEN. Installation of ventilating windows does not secure full and good ventilation of rooms. After installation of modern windows and doors the rooms should be ventilated 3-4 times a day 10-15 min each time, 15-20 min in the morning, especially the bedroom and bathroom, also kitchen after cooking.
- When ventilating rooms, turn the heating system on low, thus reducing the energy loss. For heating of humid air you will consume more energy than for heating cold, dry and fresh air that gets into the room when it is being ventilated.
- Close the door after the use of shower or bath, while cooking and after cooking in the kitchen so that the moisture contained in the room does not spread to other rooms and ventilate rooms.
- We recommend installing air inflow devices, to leave a gap between the door and floor or install special air supply grille at the bottom and secure traction in the ventilation ducts (ancillary facilities) in a natural or mechanical way.

Do not hand laundry on the heating devices next to windows, since the water vapour from the drying laundry may form condensation on the surface of the glass.

- Do not grow many plants, since a big number of plants increases humidity.
- Use the cooker hood in the kitchen while cooking.
- Turn on the fans when you shower or take a bath.
- When the outside air temperature drops we recommend reducing the number of humidity sources.

Formation of condensation on the internal and external sides of the window and between glazing units of the window

• Formation of condensation on the internal side of the window

All opening and closing parts more or less leak air. When warmer and more humid air confronts with air on surfaces, it releases humidity when it is getting cooler. This humidity turns into the condensate on the window frames and internal sides of the panels. In order the condensate does not collect on the mentioned surfaces of windows but drain outside, the condensate drain ducts shall be installed. In case the ducts are sealed, the condensate may collect inside the frame. In this case the collected water can leak inside the room and in the cold season the frozen water can damage, deform or even break the window. Thus, sometimes you have to check whether the window condensation drain ducts are not clogged with dirt or trash.

• Formation of condensation on the external side of the window

Dew on the external windows is a natural phenomenon. Condensation forms on most external surfaces when their temperature drops below outside the dew point. Formation of dew on external windows proves that the window keeps the internal heat well (the heat does not penetrate to the surface of the external window).

Formation of condensation on the internal and external sides of the window and between glazing units of the window

• Formation of condensation between panes in the glazing unit

Formation of condensation between panes of the glazing units reduces the view through the window and after it evaporates it might leave splash signs on the surface of the window inside the glazing unit. Formation of condensation is a sign that sealant of the glazing unit has been damaged. Sealant of the glazing unit retains gas that is used for filling of the glazing unit. Because of the gas the glazing unit does not lose its thermal characteristics for a long time. In most cases untightens of the sealant is the manufacturing defect of the glazing unit, thus you should contact the manufacturer and replace the glazing unit subject to the warranty granted by the manufacturer.

A whole new story is when the sealant is damaged as a result of excessive content of water inside the window, on the frame at the glazing unit, which collects as a result of clogged condensate drain ducts. Eventually, water affecting the sealant, penetrates through the sealant, thus the glazing units starts weeping between the glasses. In this case defect of the glazing unit shall not be considered as a warranty defect and the owner shall be responsible for that. In order to avoid such errors it is necessary to maintain the condensate drain ducts so they are not clogged and the water could not leak through constructions of the walls to the inside of the window (in between the glass and frame).

Content of the released moisture	Factor affecting appearance of moisture	The amount of moisture released gram/hour	Maximum moisture content limit gram/hour
A PERSON	Usual movements	30	60
	Moderate work	120	200
	Hard work	200	300
KITCHEN	Cooking	600	1500
BATHROOM	Bath	Around	700
	Shower	Around	2600
Drying laundry (~4.5 kg)		500	200
Indoor plants	Indoor flowers	5	20
Surface of open water		Around	40

7. MAINTENANCE OF PAINTED SURFACES OF WINDOWS AND DOORS

Wooden surfaces are painted with elastic breathable water paint. It is very important to preserve the unchanged coat of paint. Environment where they are used and how they are maintained plays an important role in this.

- By preserving and maintaining a protective coat of paint you will secure functionality and sustainability of the product. Painted surfaces shall be cleaned and renewed with special materials from time to time. For cleaning, use mild cleansers designated for wooden surfaces. For instance, lint-free cloth or mild sponge. For cleaning, do not use cleaning agents containing abrasive materials such as dilatants or abrasive materials that can damage the coat of paint.
- In order to repaint the windows we advise to contact qualified specialists of manufacturer of paints who will supply suitable paint alongside technologies how to paint.
- For wooden products whose horizontal surface is not protected by an aluminum slope, additional annual maintenance is required to maintain the durability of the paint surface.

8. MAINTENANCE OF WINDOWS AND DOORS FITTINGS

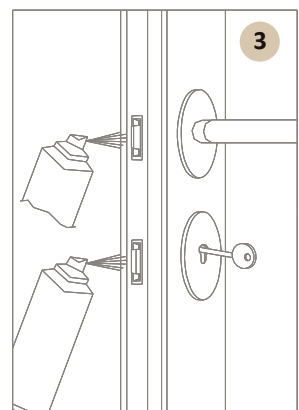
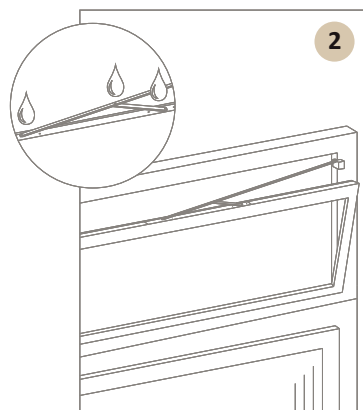
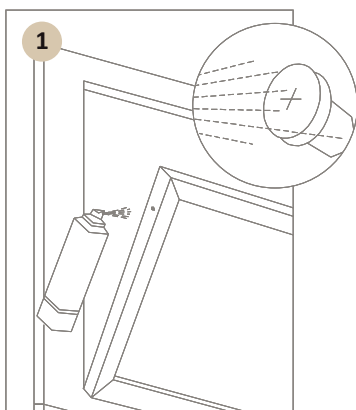
For securing sustainability of your windows and doors the following works shall be performed minimum twice a year (in spring and autumn best of all):

- Clean dust, trash and construction debris from fittings with a dry lint-free cloth.
- Check whether hinges of the opening and closing windows are fixed firmly and are not loose. If they are loose, tighten the bolts.
- If opening/closing element of the windows or doors sticks, make sure that the fittings and moving elements are free from dust, trash and construction debris that must be removed, otherwise you may break the fittings. Besides, if the fittings are unduly closed, the panel may be deformed or fall out from the window frame.
- Clean the window fittings with mild and non-powder cleansers (e.g. soapy water is suitable).

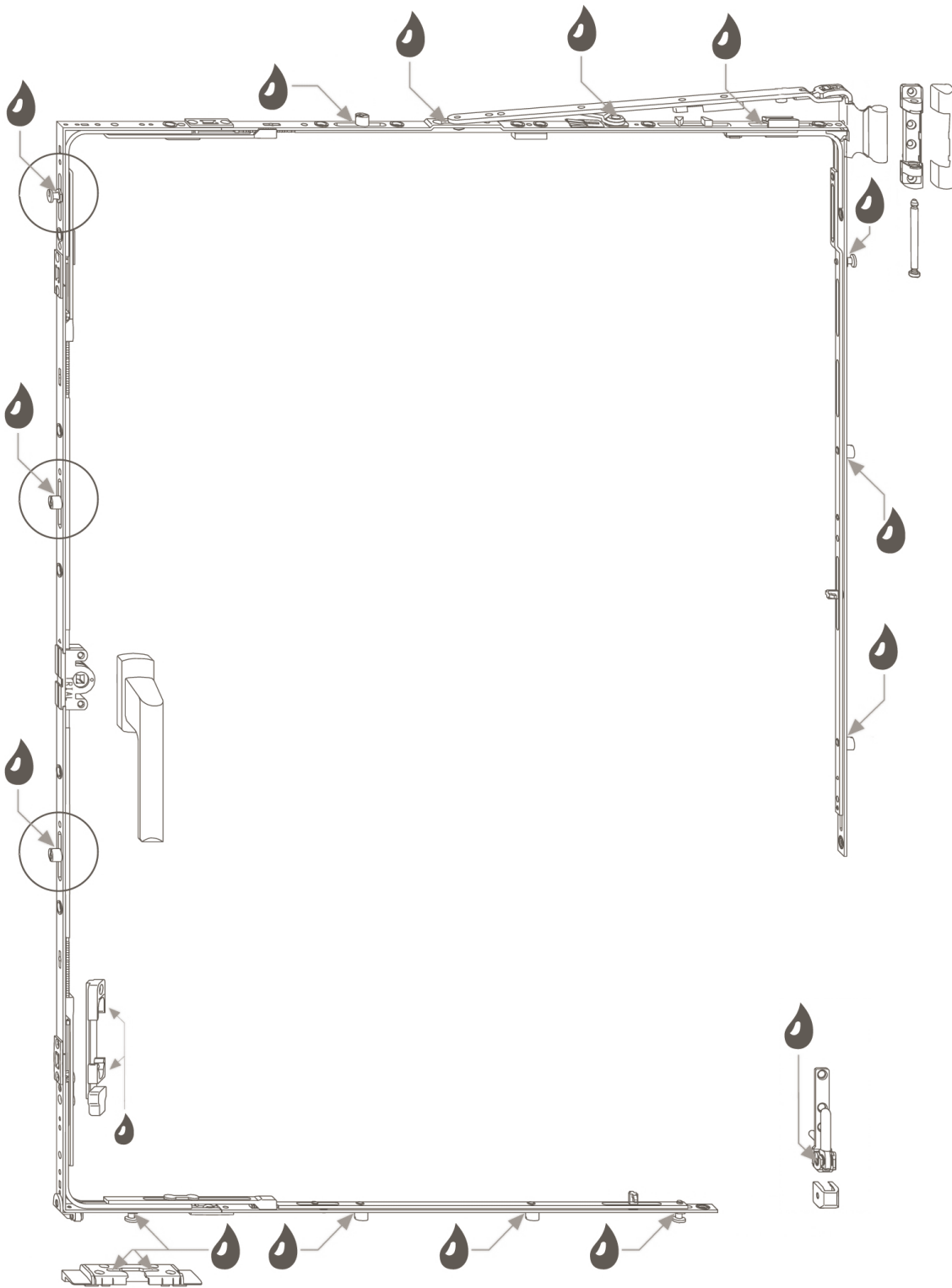


Acidic and powdered cleaning agents may damage the anticorrosive coat. After cleaning, dry the surface with a dry lint-free cloth.

- After cleaning lubricate the moving elements and closing locations with the lubricant or oil (see Figures 1, 2, 3 and 4). Do not use acid-free and resin-free lubricants or oils, for instance, oil designated for sewing machines.
- Tighten the window handles if their bases are loose.
- Lubricate the door lock latches and fastener by pushing them out first.
- Push in and out several times so that oil could get into the mechanism of the lock.
- We recommend using graphite powder for making revolutions of the key cylinder easier.



4 Lubrication of window fittings

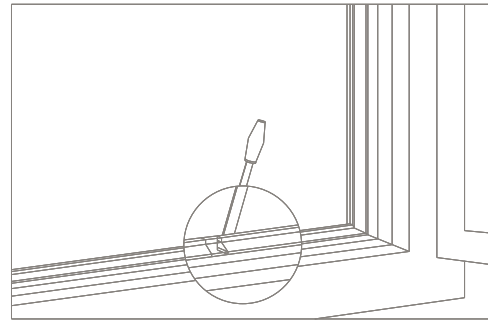
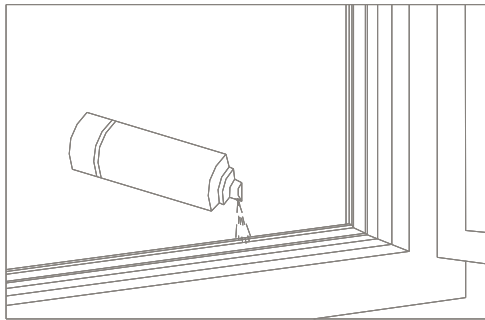


9. MAINTENANCE OF GASKETS AND WATER FLOW OUT HOLES

It is necessary to clean dust, trash and construction debris, because as a result of them the gaskets may crack and deform.

Rubber gaskets inserted in the window and door panels should be lubricated with silicone grease minimum twice a year so the gaskets do not crack and stay elastic. Thus, tightness of the window shall be preserved.

Check condensate drain ducts are located at the bottom section of the frame and bottom of the panel. If they contain trash and mud, clean it, otherwise water can start collecting inside the frame and leak inside the room.



10. GUIDANCE NOTE ON MAINTENANCE OF WINDOWS AND DOORS

In order to secure sustainability of windows and doors, assign their maintenance to specialists, who have to check and perform:

control of depreciation of the elements of window fittings and bolts;

verification of functioning of fittings and adjustment works;

lubrication of elements of fittings and closing places;

verification of gaskets;

cleaning of gaskets with a special agent;

verification of the window pane;

control of the external coat;

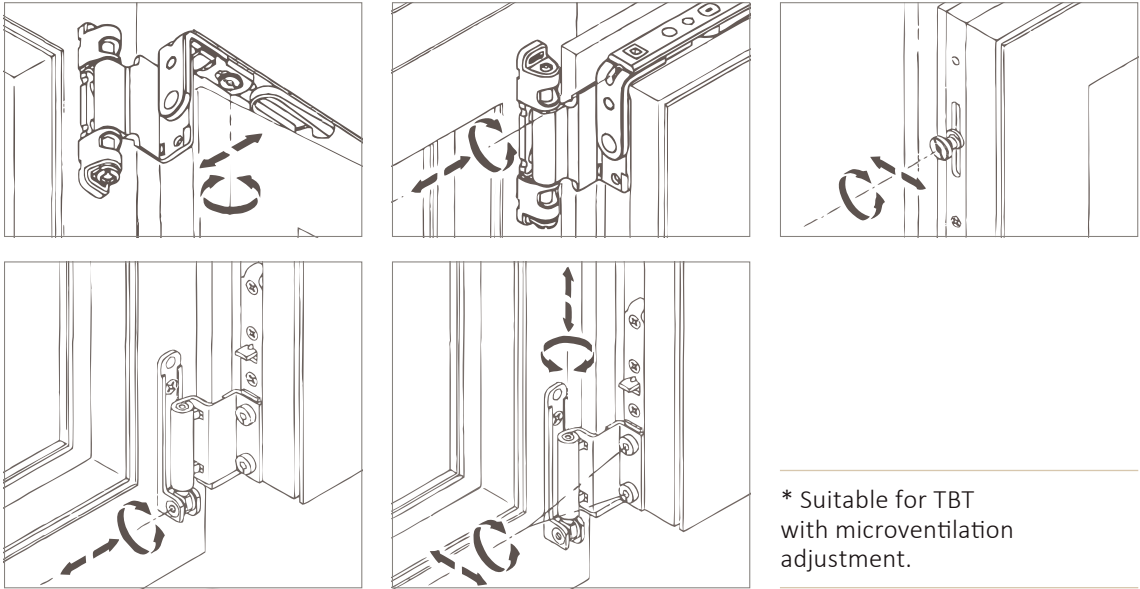
cleaning of the external coat with a special cleaning agent;

covering of the external coat with a special maintenance lotion (not necessary for aluminium-clad windows);

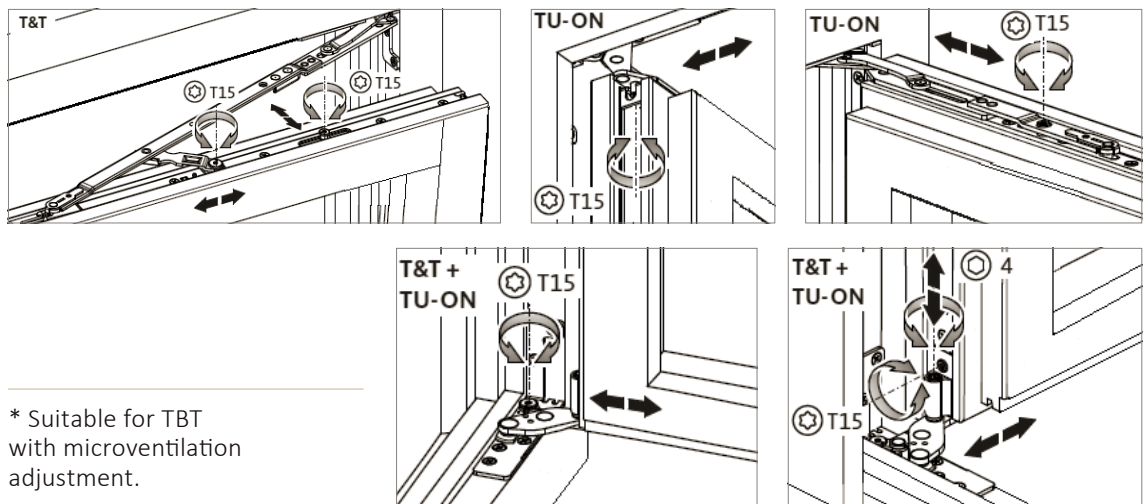
in case replacement of the glazing unit is necessary, contact the specialist that can perform the mentioned work in a professional manner.

11. WINDOWS ADJUSTMENT

Visible hinges

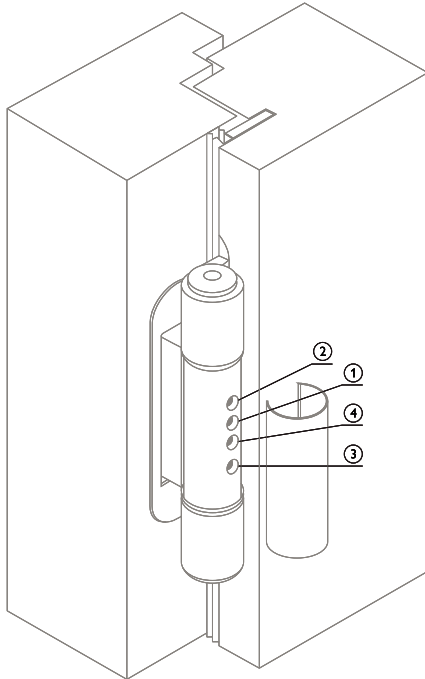


Concealed Hinges



12. EXTERIOR DOORS ADJUSTMENT

Instructions for adjustment of hinges inserted into special milled slots



After adjustment is completed, a cap should be placed on the middle part of hinges.

Adjustment of the side position

- 1 Loosen the bolt in the hole 1 by unscrewing for half a revolution.
- 2 Put 4 mm adjustable spanner into the hole 2 and turn it to the right or left so that +/- 3mm are shifted.
- 3 Then fasten the bolt again in slot 1.

Adjustment of height

- 1 When the bolt in the slot 3 is turned to the right, the door may be tilted by 3 mm and when it is turned to the left - the door may be lowered by 2 mm

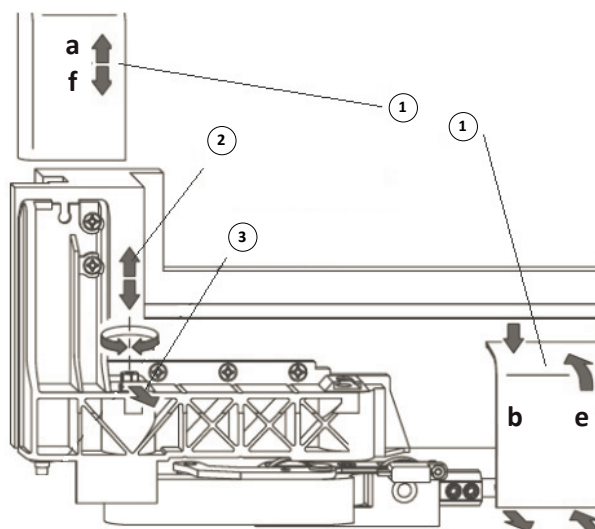
Adjustment of pressing

Adjustment has already been performed in the middle part of the door that complies with the gasket used in the side groove. In case such a gasket is not used, the bolt 4 shall be turned so that the middle part of the hinge is fixed in a correct position. In both cases adjustment can be made by +/- 2 mm by turning the bolt in the slot 4 to the right or to the left.

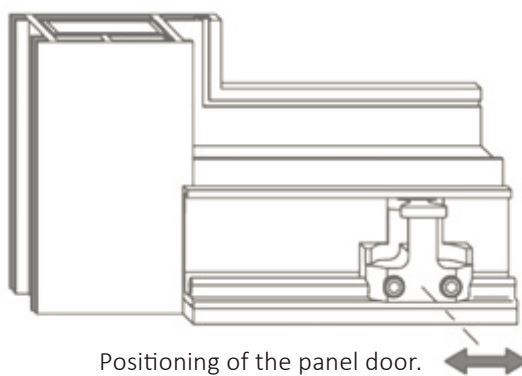


Adjustment in all three planes shall be made in the middle part of hinges when the door is open or closed.

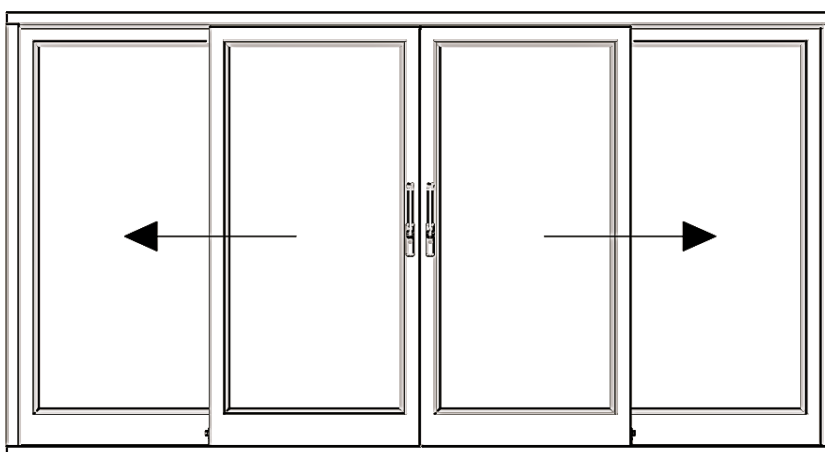
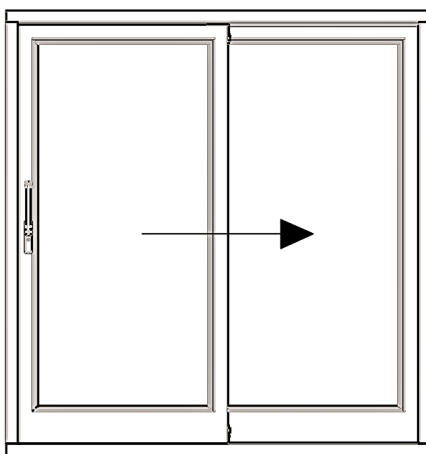
13. SLIDING DOORS ADJUSTMENT



- 1 Coverings of the mechanism.
- 2 Adjustment bolt (tilting and lowering).
- 3 Clamper of the adjustment bolt.



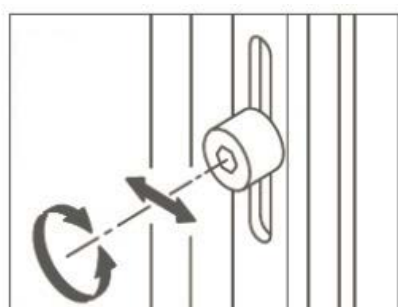
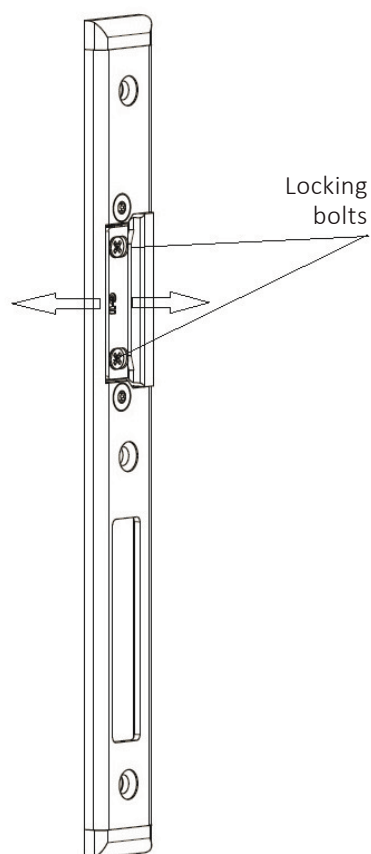
14. LIFT&SLIDE DOORS



This type of product is not adjustable.

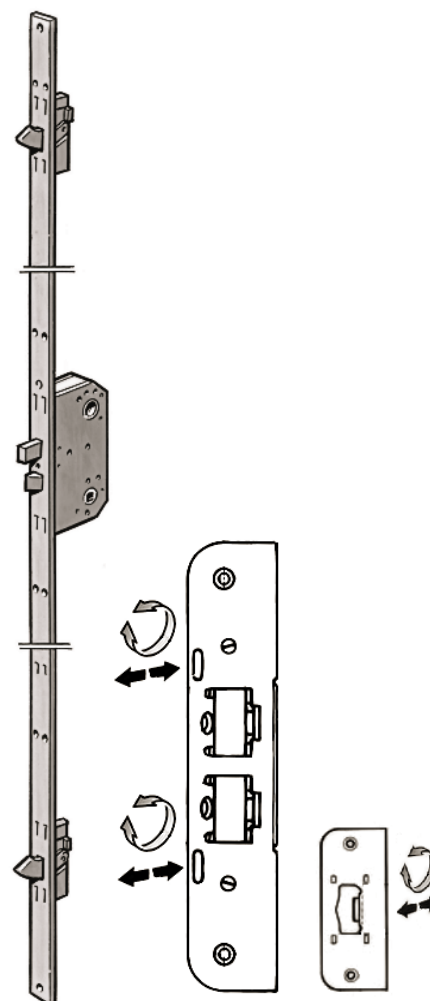
14. ADJUSTMENT OF EXTERIOR DOORS LATCHES AND CATCHES

Lock "G-U"



Adjusting bolt for pressing the plane to the frame

Lock "ASSA"



15. ADJUSTMENT OF EXTERIOR DOORS HINGES



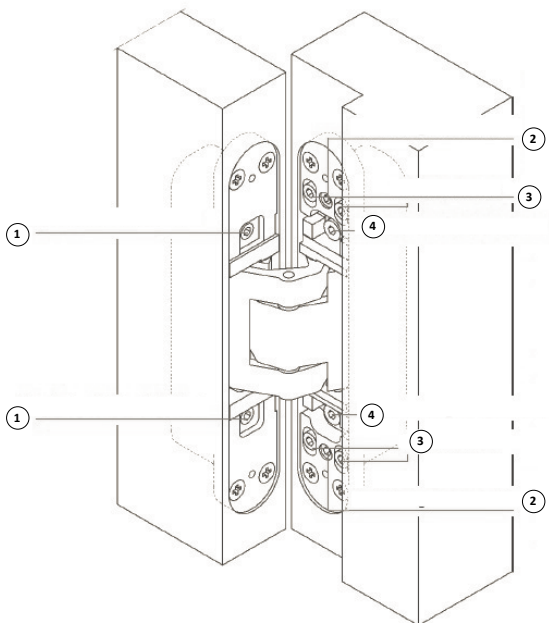
Adjustment of pressing. Turn the bushing to the required position with a key. The range is ± 0.5 mm.



Adjustment of height $\pm 3/-2$ mm.



Adjustment of a horizontal plane ± 2.5 mm



- 1 Adjustment in horizontal axis
- 2 Height adjustment bolt
- 3 Fastening bolt
- 4 Pressing adjustment bolt

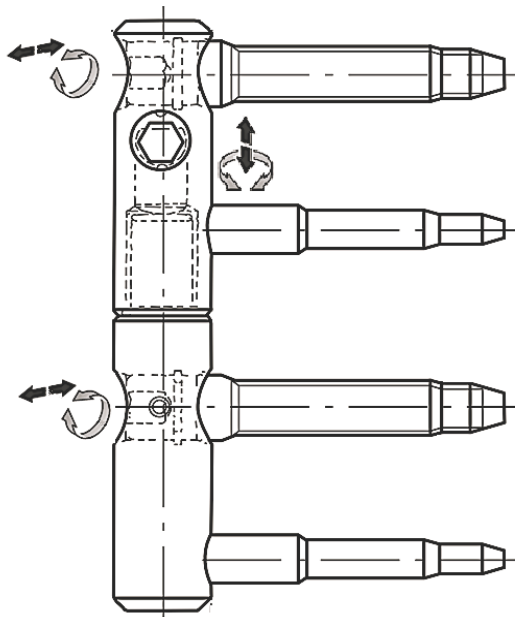
Adjustment in three planes

In a horizontal position $\pm 3,0$ mm

Adjustment of height $\pm 3,0$ mm

Pressing $\pm 1,0$ mm

Screw hinges



16. PACKAGING AND STORAGE OF WINDOWS AND EXTERIOR DOORS

Subject to the transportation distance of the products they may be packed in several different ways:

- Products for export are packed on wooden pallets, fastened with each other by wooden strips and wood screws. They are wrapped with a protective film and protected with a corrugated fibreboard, where required. Before lifting the product from the pallet all fixing bolts shall be removed and only then the product can be lifted.
- In the territory of the Republic of Lithuania products are being transported on special reusable metal stands.

Both ways are not being anticipated for storage outdoors. Products can be stored in dry and ventilated premises or attics so they are protected from direct rain or snow. The products being stored shall be without a protective packing film to avoid condensation of moisture which in a long run may damage products.

Note:

If the products are being stored for over a week or longer in packages and with no exposure to the daylight, the clear silicone around the glazing unit may turn yellow because of its chemical properties and this will have no effect on functionality and sustainability of the product.



WINDOWS FOR YOUR LIFESTYLE