AS LASITA AKEN WARRANTY TERMS AND CONDITIONS, MAINTENANCE AND INSTALLATION INSTRUCTIONS

Thank you for having chosen your windows and doors from AS Lasita Aken product range. This brochure contains instructions for installation and maintenance of the Products, in order to ensure that the properties and quality of the Products will last long.

When necessary please contact our sales office. For contact data see our webpage: www.lasita.ee

CONTENT

AS LASITA AKEN WARRANTY TERMS AND CONDITIONS

1. General warranty terms and conditions

1.1. AS Lasita Aken ensures the quality of its Products and Installation work (hereinafter **Installation**) according to the regulations and standards stipulated in legislation of the local country.

1.2. The Products of AS Lasita Aken are CE-certified.

1.3. AS Lasita Aken Products and/or Installation come with a warranty starting from the next day of having given over or considered to be given over (hereinafter **Warranty period**) as follows:

1.3.1. Sold Products – Sales warranty (hereinafter Warranty) - **24 (twenty four) months**.

1.3.2. Installation – Construction warranty (hereinafter Warranty) - **24 (twenty four) months**.

1.3.3. Tightness of glazed units – **60 (sixty) months**.

1.3.4. Durability of the finishing coating, provided the manufacturer of finishing materials has not stipulated otherwise – **60 (sixty) months**.

1.4. The Buyer shall notify the fault in the Products / Installation detected during the Warranty period to AS Lasita Aken by submitting a written claim (including a detailed description of the fault) immediately when the fault was detected.

1.5. AS Lasita Aken is liable for the faults in the Products / Installation, which have occurred due to the activity or non-activity of AS Lasita Aken. AS Lasita Aken shall make non-conforming Products / Installation conforming by rectifying the faults or replacing the Products at its own expense. For repaired / replaced Products the same Warranty conditions apply as for the new Products.

1.6. Rectifying of the faults detected during the warranty period and caused by AS Lasita Aken shall be performed during a reasonable time mutually agreed between the Parties.

1.7. AS Lasita Aken is not liable for the faults in the Products / Installation, which are caused by the Buyer due to the non-conforming use of the Products during the Warranty period.

1.8. The claim of the Buyer shall not be accepted when AS Lasita Aken proves that the faults in the Product / Installation have been caused by the Buyer, including when the Buyer has not used and maintained the Products as intended. The repair costs and transport costs not covered by the Warranty shall be borne by the Buyer.

1.9. In case of disputes between AS Lasita Aken and the Buyer regarding faults in the Products and Installation, an independent expert evaluation will be ordered, if required. The costs related to the expertise shall be covered by the Party guilty.

2. This warranty covers the following:

2.1. shape stability (maximum permitted longitudinal bending 2 mm per two metres);

2.2. surface quality of the finishing material pursuant to the directive “Directive for visual assessment of finished surfaces of treated wooden windows and doors” **(Warranty conditions Annex 1)**;

2.3. weather resistance of the finishing coating depending on the finishing system and maintenance intervals of the wooden parts;

2.4. water tightness and weather resistance of the gaskets provided the requirements stipulated in the maintenance instructions of windows and doors have been followed **(Warranty conditions Annex 3)**;
2.5. durability of the shutter systems provided the requirements stipulated in the user and maintenance instruction of the shutters have been followed. **(Warranty conditions Annex 4)**;
2.6. moisture and dust resistance of glazed units;
2.7. For openings, which have been stored and protected on the construction site during the construction process according to the guideline "Storage and protection of wooden openings during the construction process" **(Warranty conditions Annex 2)**;
2.8. transport and Installation executed by AS Lasita Aken.

3. This warranty excludes the following

3.1. The warranty does not apply to Products that were not installed in accordance with AS Lasita Aken's installation instructions
3.2. Glazed units, which
3.2.1. have been thermally broken. Thermal breaking is a physical phenomenon, which takes place when the temperature differences on the glass surface exceed 40° C. To avoid thermal breaking the glass must be hardened or factors increasing the risk of thermal breakage shall be avoided:
3.2.1.1. intensive solar radiation (geographical location of the building, season, cloudiness, air pollution and reflection from the ground or adjacent buildings);
3.2.1.2. high absorption coefficient (body tinted glasses) and thermal radiation caused by solar energy;
3.2.1.3. environment of the room and materials (insulation near the glass, a pent or heating system piping, insufficient air flow) behind the glass;
3.2.1.4. external covering (shadows of another house, a sun-blind, balcony, window jamb, etc.);
3.2.1.5. internal covering (some window blinds, shadows inside the room, partially covered glass surface, lack on natural air flow);
3.2.1.6. internal heating sources, when radiation is directed straight on the glass pane (heat emitting elements or heating elements working on convection);
3.2.1.7. films controlling solar energy;
3.2.2. mechanically damaged, broken;
3.2.3. defects, which are not visually noticeable when viewing straight from a distance of two (2) metres, in normal light conditions;
3.3. features characteristic to wood, such as:
3.3.1. texture and colour-shade differences of same type of wood;
3.3.2. colour changes of wood caused by UV radiation;
3.3.3. other properties described in the directive "Directive for visual assessment of finished surfaces of treated wooden windows and doors" **(Warranty conditions Annex 1)**;
3.4. to Products the colour shade of surface finishing of which is glaze or the surface is finished with covering paint the colour shade of which can be affected by UV-rays during the warranty period or from the finishing layer of which resin can penetrate;

3.5. to Products that as required by the Buyer are produced over or under sized than standard. The relevant remark is also added in the Order confirmation;

3.6. to wooden external doors and balcony doors with thresholds (wooden and aluminium), which are not protected from direct impact of rainfall (the doors are not protected with a pent roof installed above the door with the minimum width of one metre or doors are not mounted in a wall concave the minimum depth of which is one metre);

3.6.1. deformations and other defects of the products caused by a room which is too humid, without heating and ventilation. The recommended values for indoor climate parameters in the Republic of Estonia and the European Union are primarily based on standards EVS 839, EVS-EN 16798-1, EVS-EN ISO 7730, and, in the Republic of Estonia, on the guidelines of the Estonian Health Board.

3.6.2. water or chemical substances (paint damage, mould, etc.);

3.6.3. polluted environment (soot, acids, construction waste, dust, etc.);

3.6.4. other reasons, which are described in the guideline "Storage and protection of wooden openings during the construction process **(Warranty conditions Annex 2)**;

3.7. failure of opening/closing mechanism of the frames, which is caused by instability of the structural elements of the wall and/or sinking of the structure of the building;

3.8. for Products, which after having been received by the Buyer have been:

3.8.1. processed (sawn, drilled, milled, finished, etc.);

3.8.2. provided with non-confirming elements;

3.8.3. the surface of which has been treated with a non-confirming finishing material;

3.9. for normal wearing of finishing and shutter systems (hinges, locks, handles);

3.10. mechanically damaged and broken wooden parts, hardware systems, seals, etc.
When obstacles will arise during opening the Products, then you must immediately contact with a company, who installed the Products. Given company must perform an adjustment. Avoid using the Products, when there are problems with openings and the Products is not adjusted. If injuries is caused by incorrect using of the Products then it is not covered under Warranty.

3.11. for breaking of the Products and unforeseen situations (fire, flood, vandalism, etc.);

3.12. transport damages, in case the transport has not been ordered by AS Lasita Aken;

3.13. Products, which have not been regularly maintained (cleaned, greased) by the Buyer as stipulated in the maintenance instructions of windows and doors **(Warranty conditions Annex 3)** prepared by AS Lasita Aken and which is the reason for non-conformity of the Products.

3.14. Warranty excludes problems that are caused by the following activities:

3.14.1. AS Lasita Aken Warranty conditions have been neglected;

3.14.2. this AS Lasita Aken maintenance and user instructions of the Products have been neglected;

3.14.3. the Products are used unpurposefully;

3.14.4. elements (glass, shutter, handle, etc.) of the Products are broken due to mechanical damages;

3.14.5. the Products are installed in extreme conditions.

3.14.6. AS Lasita Aken has not received full payment for the Products.

STORAGE AND PROTECTION OF WOODEN OPENINGS DURING THE CONSTRUCTION PROCESS

Wooden windows and doors (hereinafter Products) shall be protected against construction process impacts during the construction activities.

Pre-installation storage and protection.

1. The Products are delivered on the construction site packed on a wooden pallet. To protect the Products against dust and rainfall the Products placed on a pallet are covered with film. When receiving goods the quantity and quality of the Products shall be verified. Damages occurred during transportation of the Products shall be written in details on the waybill of the carrier. Photos shall be taken of the damages and the photos shall be sent immediately to Lasita Aken AS. NB! This film has to be removed from the package immediately to avoid condensation of water vapours under the film. Products packed in the film must not be stored in conditions where weather conditions can affect them (rainfall, solar UV radiation) or in too humid and dusty conditions.
2. The Products shall be stored on the construction site in the vertical position in a dry room provided with good ventilation.
3. If possible, the Products shall be stored in operation position – with the bottom jamb resting on the ground. The Products shall not be left in bended position.
4. The stored Products shall be in a properly closed position.
5. In case the Products are supported on a support, it has to be ensured that the capacity of the support is sufficient to carry the weight of the Products.
6. In support points and when the Products are stored next to one another, softening material has to be used or the external sides of the Products have to be fastened with wooden bars so that there is some space left between the Products.
7. The stored Products have to be protected against harmful impacts, such as too high humidity, construction dust, construction mixtures, paints, cutting and welding sparks, etc.

Post-installation protection of the Products

Protection against too high humidity

1. The rooms of a building where the Products are installed shall not be too humid.
2. The wall, ceiling and roof structures shall be dry and the roof shall be water resistant so that rainfall cannot damage the Products.
3. The Products shall not have contact with wet materials (concrete mix, levelling and other mixtures, plaster, etc.).
4. Water, steam and moisture emitting during performing wet processes (concrete work, work with wet mixes, plastering, etc.) can damage the Products. When executing wet processes sufficient temperature and ventilation has to be ensured in the rooms, so that water vapour and humidity shall not condensate on the Products. The room shall be heated and ventilated until humidity cannot condensate on the Products.

NB! Failure to observe the above outlined requirements will cause damages to the Products. Too high humidity causes swelling and deformation of the wooden parts of the Products, glued joints and tenon connections may break, the paint layer may start flaking off and the metal parts can start corroding.

Wooden windows and doors do not generate moisture and condensate. Condensate formed on the windows and doors is caused by the humidity in the room. To avoid humidity a sufficient temperature level by means of ventilation has to be ensured.

Protection against other impacts

1. The Products shall be protected against construction dust, since construction dust damages shutters and locking mechanisms.
2. AS Lasita Aken Products are finished with water-based finishing. For protection of the Products only such masking tapes should be used that are meant for taping wooden windows and doors. For protections of the products only tapes which are approved by AS Lasita Aken may be used. It is forbidden to use PVC tapes. To ensure optimum moisture balance of wooden parts and facilitate easy removal of the protective tape without damaging finishing, the tape and other protective materials shall be removed immediately after work is completed, but not later than two weeks. Unsuitable materials or materials kept on longer than prescribed may damage painted surface and therefore finishing Warranty does not apply for damaged surface.
   NB! Please check the suitability of a tape for wooden windows and doors and also the time period a tape can be kept on the Product.
3. The Products shall be protected against all kinds of splashes, which may damage the wooden parts and glazed surfaces.
4. The Products shall be protected against sparks emitted during welding and cutting.

AS Lasita Aken warranty terms and conditions _ ANNEX 3

MAINTENANCE AND OPERATION OF WINDOWS AND DOORS

Storage

1. Windows and doors (hereinafter Products) shall be stored in the vertical position in dry rooms provided with good ventilation and protected well against soiling and mechanical damages.
2. Prolonged storage of packed Products in a humid room or outside may damage the Products.
3. Once the package is opened and before starting installation we recommend that you let the products “breathe” for 2-3 hours.

Protection

1. Before starting post-installation finishing work the internal surfaces of openings shall be protected with film, paper or masking tape, approved by AS Lasita Aken to avoid mechanical damages, soiling and excessive moisture penetrating in the wooden parts. To ensure optimum moisture balance of wooden parts and facilitate easy removal of the protective tape without damaging finishing, the protective film and tape shall be removed immediately after finishing work is completed, but not later than two weeks.
2. Products shall be protected against cement and liquid lime, which may cause irreparable damage to the finishing layer.
3. The protective aluminium tape installed on wooden-aluminium openings in the factory shall be removed immediately after installation or latest within 3 (three) months starting from the date printed on the label attached to the protective film.
4. To prevent damages to the finishing and wood, the wetted surfaces of the Products shall be dried after condensate is formed (during construction work in which wet processes are used or in unheated rooms, where evaporated water condensates on cold surfaces of the building) and the rooms shall be ventilated. In rooms where the moisture level is constantly high, wood will swell and the Products may get damaged.

5. Transport of construction materials via windows is not recommended. Door openings should be used for this purpose. In case the use of window openings is unavoidable, window frames shall be securely fixed, the bottom elements of jambs shall be protected with suitable protective materials (tape, veneer, cardboard) to prevent bending of the water bar and any other damages, since otherwise the window will lose its water tightness and thermal insulation properties.

Cleaning

1. Wooden surfaces shall not come in contact with solvents, alcohol, petrol or corrosive cleaning agents. Do not use polishing cleaning agents.
2. Products shall be cleaned with special pH-neutral cleaning agents.
3. Do not use sharp-ended tools (knives, metal spatula, steel wool) to clean the Products, since these may damage the upper surface of wood or glass.

Maintenance

Besides regular cleaning we also recommend the annual inspection of the Products. This will ensure long-term and problem-free operation of the Products.

1. Clean the areas between the wooden parts and gasket from dust and dirt with a vacuum cleaner.
2. Clean water discharge openings in the water bars.
3. Clean the gasket with a cloth moistened in water.
4. Clean and service wooden parts with a special maintenance kit recommended by AS Lasita Aken: clean wooden surfaces with a cloth impregnated in the cleaning agent; dry with a clean cloth; use a soft cloth and apply treatment agent along the wood fibre.
5. Clean, grease and adjust shutters pursuant to the user and maintenance instructions for windows equipped with ROTO NT window shutters (see AS Lasita Aken Warranty terms and conditions, Annex 4).
6. Doorsills of external doors and balcony doors made of oak shall be treated with oil minimum once per year.

Consultation and repairing

For further information and additional information please contact AS Lasita Aken offices.
If needed, we assist you in adjusting and repair work.

INSTALLATION INSTRUCTIONS OF OPENINGS

Current opening installation manual is prepared based on installation guide EETL AT 4-201 of Association of Construction Material Producers of Estonia opening and RT 41-10947-et Wood and wood-aluminium windows and their installation of Estonian Building Centre.
Windows and doors (hereinafter openings) fulfil the following tasks:

- separate the interior of a building from external climate conditions;
- provide thermal insulation;
- provide sound insulation;
- provide safety;
- let light in the room;
- transmit the load imposed on it to the wall of the building.

In order to ensure durability and operational convenience of openings, it is wise to trust installation of openings to experienced specialists and it should be done in the stage of construction work, where the internal climate of the building has already stabilised. In case of rooms with excessive humidity we recommend using a dehumidifier with sufficient capacity according to the size of the room.

Before starting installation work the following shall be checked:

- dimensions of an installation hole;
- hole type (with or without an overhang);
- horizontal and vertical alignment of the walls;
- condition of the finishing of the installation hole;
- position of the windowsill and water sheet.

Openings must be installed in an external wall in a way ensuring long-term safe and obstacle-free use of the openings. Correct installation plays an important role in fulfilling these requirements. Installation errors reduce the properties of performance, tightness, strength, durability, thermal resistance and sound insulation.
A prerequisite for correct installation is correct insertion, fastening and sealing of the openings in the wall.
Openings must be installed in an opening so, that there will be no thermal bridges, which cause condensation on the internal side of the jamb.

When inserting openings general rules must be followed, i.e. an opening must be placed:

1. in a wall consisting of a single layer: on the central line of the wall cross-section;
2. in a sandwich-wall insulated from inside: on the same line with thermal insulation;
3. in a wall with external insulation: the side of the external side of the wall close to the insulation layer or even on the same line with the insulation layer;
4. in installation openings into wooden box windows exterior wooden parts must be at the same line with outer wooden box.

In case the installation hole is with an overlap, the opening should be placed so that the overlap covers the jamb, supporting imposts and lintel maximum within half of the width of the jamb.

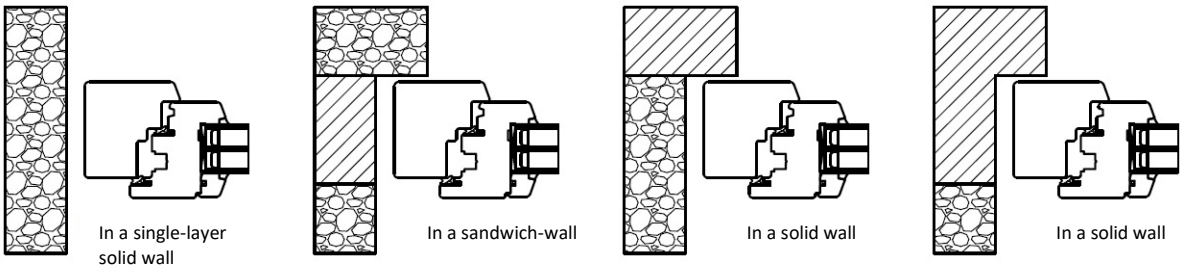


Figure 1. Installation of openings in walls with or without an overlap

Dimensions

The dimensions of openings must be correct in relation to the installation hole, since the quality of tightness depends on it. An expansion joint between the jamb and wall shall be 10-20 mm. To ensure this, the installer shall measure the installation holes and gives the measures to AS Lasita Aken. Please keep in mind that a bigger gap should be left for installation of a windowsill and water sheet and in addition places should be left for support blocks and alignment wedges.

Element length (m)	max 1.5	max 2.5	max 3.5	max 4.5
Installation margin (mm)	10	10	15	20

Table 1. Minimum joint width between the jamb and sides of an installation hole

Description of installation

1. Placing a jamb in the installation hole and aligning with wedges

To support the lower element of the jamb blocks made from impregnated wood or plastic shall be used. For aligning wedges made from impregnated wood or plastic shall be used. Different types of assembly anchors used for installation, which attached with 4*50 mm, 5*40 mm or 5*45 mm C2 or C3 grade wood screws.

For installation different types of assembly anchors and corrosion resistant screws are used.

The support blocks and alignment wedges shall be placed so that possible deformation of structural parts of a window caused by temperature fluctuation is taken in consideration. In case an opening is fastened only by means of dowels and screws or assembly anchors without using support blocks, it is not possible to achieve sufficient strength to carry loads imposed on it.

Alignment wedges are meant for aligning the window in the installation hole. While fastening the jamb they have to be removed. Support blocks shall not be removed.

When installing openings in the installation hole max. vertical and horizontal deviation of 1.5 mm is permitted for an element with the maximum length of 3.0 metres.

Deviations permitted to bigger elements should not affect their functionality.

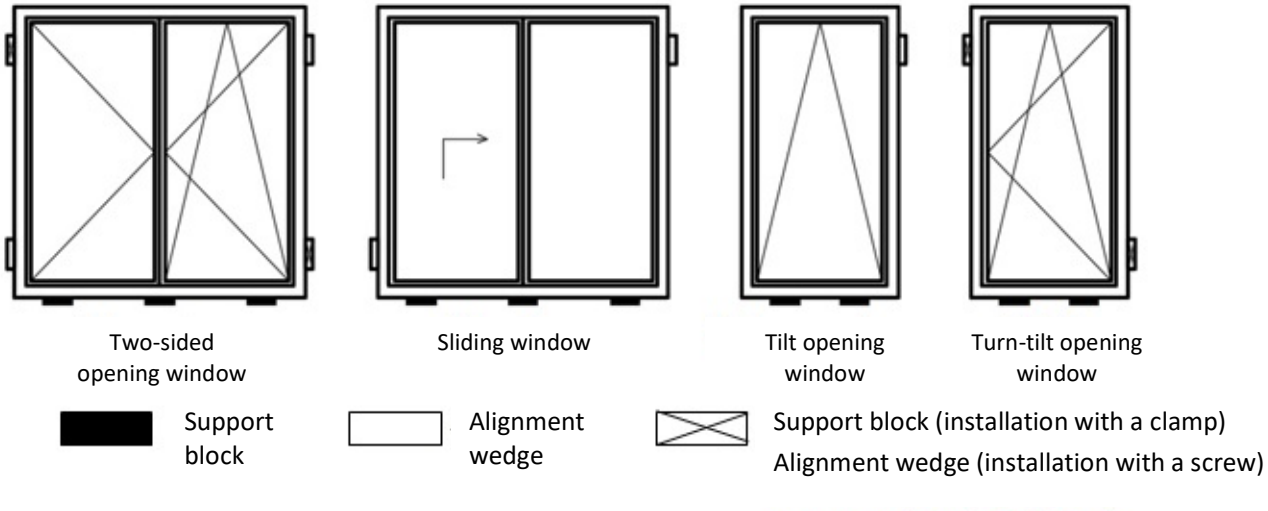


Figure 2. Locations of support blocks and wedges

2. Windows should be aligned with the same height with the help of a laser.
3. Distances from the internal or external wall shall be given by the Customer.
4. To fix the distances from the internal and external wall assembly tape shall be used, if necessary.

	Window width	A window height	Deviation
Deviation of windows from the vertical line		<1500 mm	3 mm
		>1500 mm	4 mm
Deviation of windows from the horizontal line	<1500 mm		3 mm
	>1500 mm		4 mm
Deviation of windowsills from the horizontal line	<1500 mm		3 mm
	>1500 mm		4 mm

Figure 3. Installation tolerances

5. Fastening the window in the installation hole

Fastening shall be performed so that the assumed external loads are transferred to the structure of the building via connections and that the functionality of the windows is preserved.
A suitable installation method shall be chosen based on the structure of the building, type and material of the wall.

5.1. Installation of an opening in the hole starts from aligning the bottom jamb bar with wedges.
For initial alignment 9 mm support blocks are used. For real aligning wooden or plastic wedges shall be used. In case of non-opening windows only the bottom jamb bar is aligned with a wedge. In case of opening windows also the side jamb bars are aligned with wedges in order to also ensure diagonal resistance to the torsional moment generated in the frame.

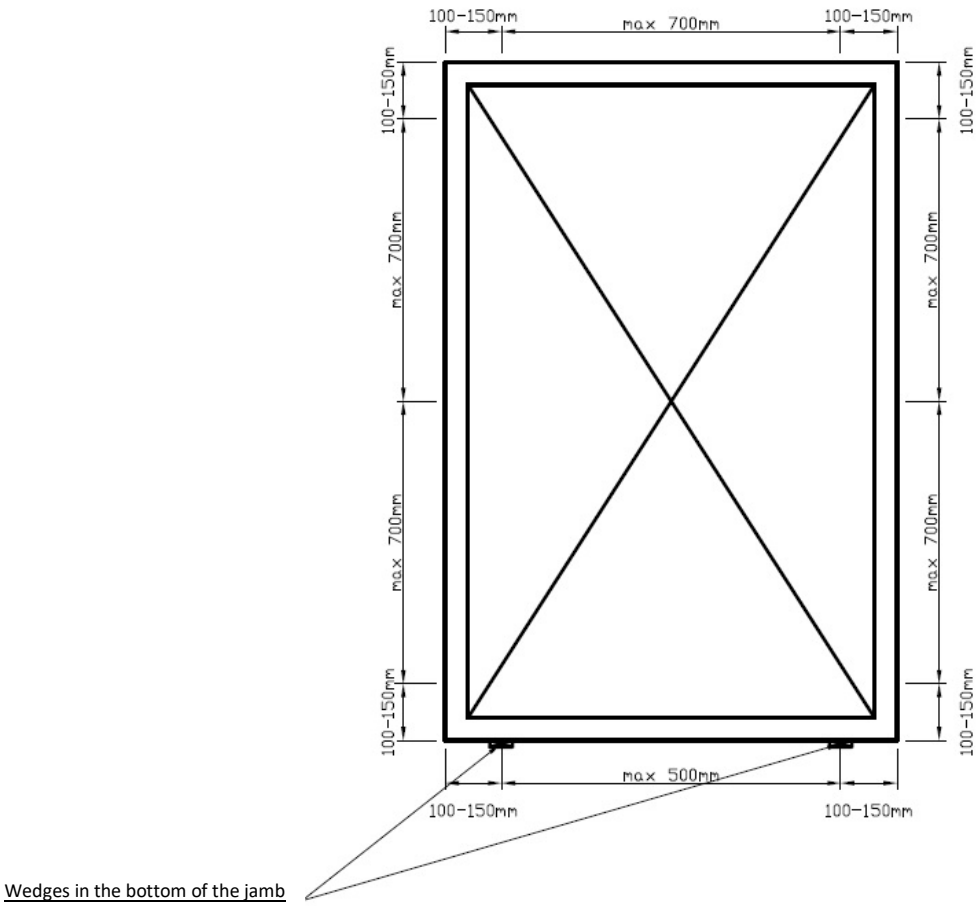


Figure 4. Alignment of a non-opening window with wedges

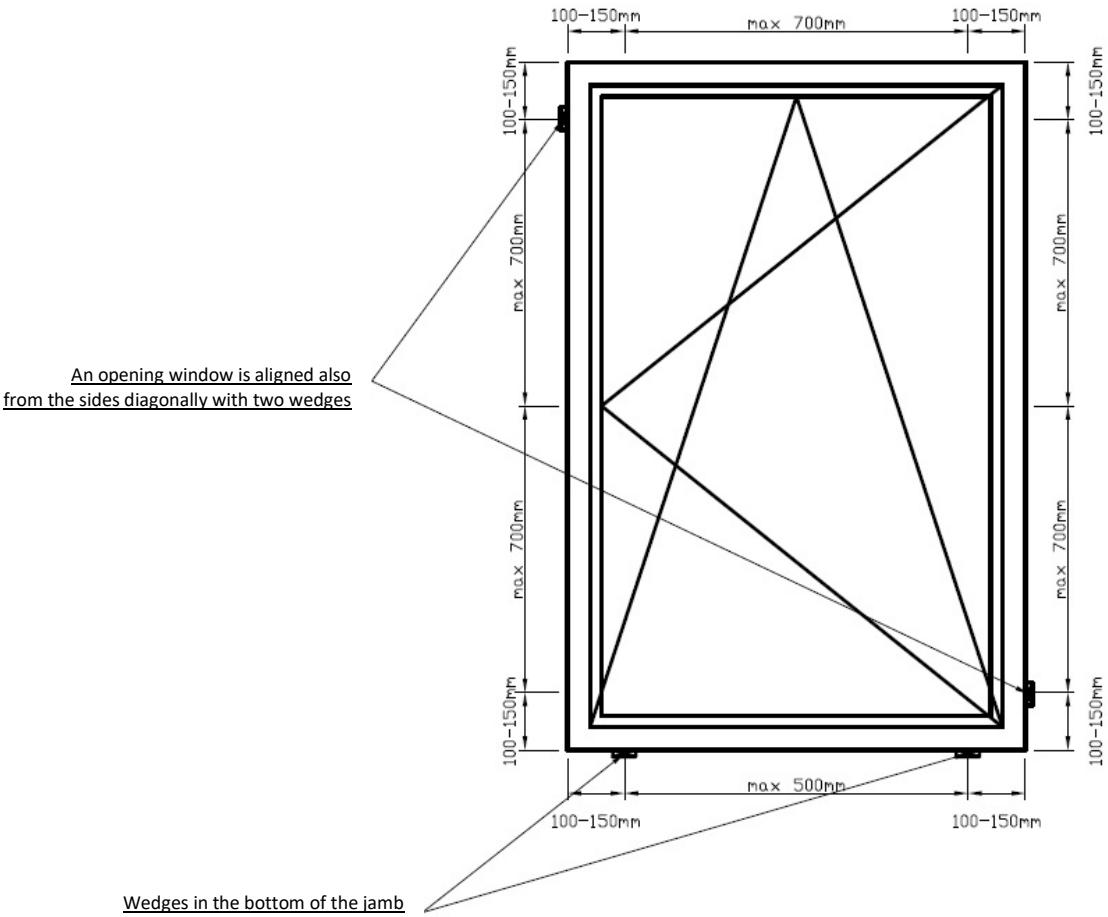


Figure 5. Alignment of an opening window with wedges

5.2. The choice of fastening fixtures (dowels, screws, clamps/anchors) depends on the type of the wall (monolithic, sandwich) and fastening method.

5.2.1. **Dowels** are used in walls made from concrete, solid bricks, calcium silicate bricks, hollow bricks, ceramic and porous concrete bricks, natural rocks, etc.

5.2.2. **Screws** are used to fasten jambs to walls made from concrete, solid bricks, calcium silicate bricks, hollow bricks, light concrete, wood, etc.

5.2.3. **Assembly anchors/clamps** are used in case the use of a dowel is complicated because of the location of the jamb, for instance in case of lower fastenings (doorsill) in sandwich walls and also in case fastening a dowel or screw through the jamb is excluded.

5.3. The maximum distance between the fastening points is 700 mm.

5.4. Depending on the wall structure suitable screws and/or dowels are used to fasten **an installation clamp**.

5.4.1. Installation clamps shall be fastened with two screws: one 4*50 mm screw is fastened to the structure of the jamb and another to the structure of the wall.

5.4.2. In case screws are used for fastening, C4 grade wood screws 5*90 mm or 5*100 mm shall be used depending on the width of the joint.

5.5. The minimum depth of a dowel in the wall shall be 30 mm, the depth of a screw in the wall shall be 30-60 mm.

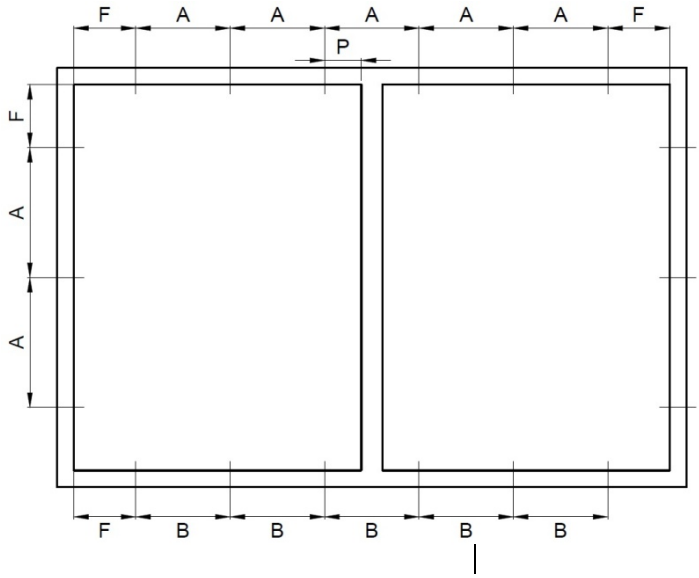


Figure 6. Location of the fastening points

Location of the fastening points:

A – fastening points with the maximum pitch **700 mm**

B – fastening points on the bottom element of the jamb with the maximum pitch **700 mm**

F – from the internal side of the jamb with the maximum pitch **145 mm**

P – from the edge of the impost of the jamb with the maximum pitch **145 mm**

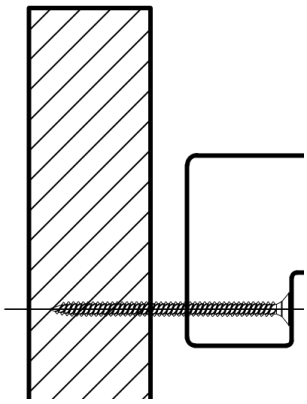


Figure 7. Fastening with a dowel

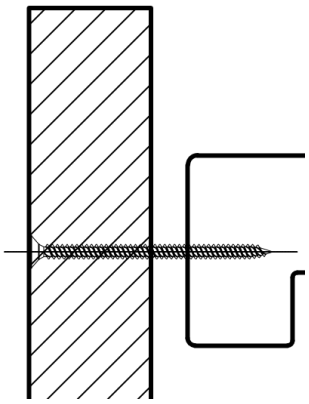


Figure 8. Fastening with a screw I

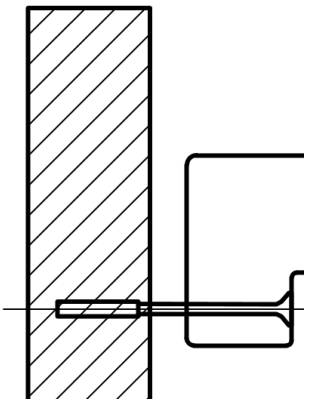


Figure 9. Fastening with a screw II

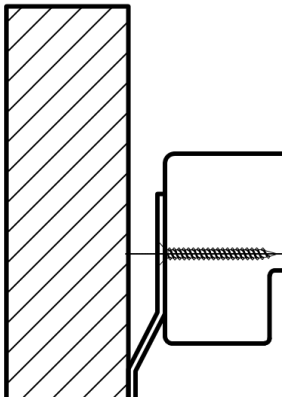


Figure 10. Fastening with an assembly anchor/clamp I

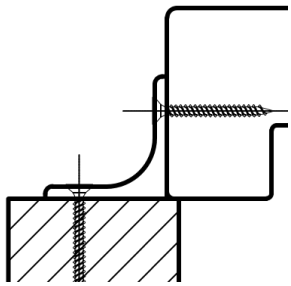


Figure 11. Fastening with an assembly anchor/clamp II

6. Sealing and insulating a gap between the window and wall

Remark: from the point of view of strength-technology, polyurethane foam and any other insulation materials are not considered to be fastening fixtures but they are sealing and insulation materials of a joint.

The aim of sealing the joint between the installation hole and jamb is to protect it against humidity: from storm water coming from outside, as well as from humidity formed from the internal air and exiting from the room.

When sealing it has to be observed that:

- the materials are chemically compatible;
- the substrates are cleaned and primed.

For sealing polyurethane foam shall be used. Before applying foam, the architrave has to the made rigid according to the instructions of the window manufacturer. A gap between the jamb and wall is filled uniformly with foam, there should be no voids left. In such a way the required vapour resistance is ensured. After foam has hardened, the support block used to install the windows shall not be removed.

Requirements considering moisture and air exchange

The sealing material is placed in three levels: the inner, middle, outer layer.
The internal layer is a vapour barrier materials: for example different types of tapes (from fibre, aluminium), wind and vapour barrier foils.
In the middle layer there are sealant foam (polyurethane foam), mineral insulating material (eg mineral wool) or self-expansive tapes, gaskets or joint ropes.
For external level impregnated self-expansive tapes or laminated vapour-permeable tape is used.
Given Products should not react with other materials used and their properties cannot change during the temperature changes.

6.1 Sealing in inner layer

Inner layer sealing purpose is to prevent penetration of water vapour into window and wall joint and therefore prevent condensation of water vapour. Sealing must be stable and should not react chemically with other materials used. The main rule of sealing seam between window and wall: “Inside tighter than outside.” Following this rule allows water vapour diffusion into external environment.

6.2 Thermal insulation layer

Joint between frame and wall must be uniformly filled with thermal insulation material. The insulation material may be a polyurethane foam, mineral wool or other materials (glass wool). Polyurethane foam should not react chemically with other used substances. Polyurethane foams to be used according to the manufacturer's instructions. Attention must be pay into correct filling of seam with foam spraying. Frame cannot become deformed.

6.3 Sealing on the outside

A slot between frame and opening must be sealed so that rain water cannot penetrate into seam between window and wall. At the same time vapour permeability must be maintained. Vapour permeable tapes, suitable mastics etc. is used for it.

6.4 Sealing on the inside

Vapour barrier tape or suitable sealant is used to sealing on the inside, so that non-vapour impermeable solution is ensured.

Before starting finishing work it has to be verified that the openings have been correctly installed and that they function as required. The following requirements must be fulfilled:

- tolerances in vertical and horizontal direction (elements with a max. length 3.0 m) shall not exceed 1.5 mm per 1 m;
- the diagonal lengths of a jamb and window frame shall not differ over 2 mm in case the maximum length of the element is 2 m and 3 mm in case the length of the element is over 2 m;
- there are no obstacles in opening and closing of the window;

- opening / closing of a window does not require implementing particular force;
- a closed window shall adhere uniformly and tightly against the jamb.

7. Tilt only window sash removal

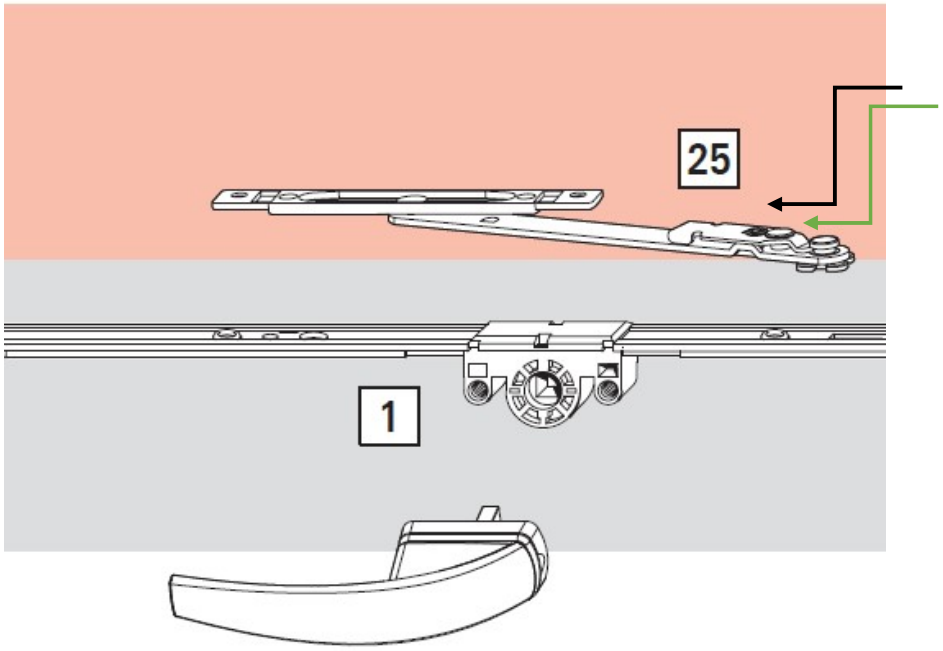


Figure 122. Tilt only window sash removal

1. Open the window.
2. To release the Tilt-Stay locking mechanism turn the little plastic pin counter-clockwise (green arrow)
3. Turn the locking mechanism (pointed out with black arrow) left or right.
4. Release the Tilt-Stay from espagnolette after making sure that the window sash is secured from falling down.
5. To connect the Tilt-Stay with espagnolette again, move the window sash to the point where you can connect the Tilt-Stay to espagnolette.
6. Turn the locking mechanism left or right and place the Tilt-Stay to espagnolette.
7. Finally to secure the locking mechanism, you have to turn the plastic pin clockwise. (green arrow)

ANNEX:
Operation, safety and maintenance instructions of ROTO NT hardware
Adjustment instructions of ROTO window hardware

INSTALLATION AND OPERATION INSTRUCTIONS OF PARALLEL SLIDING DOORS

Installation instructions of a parallel sliding door

A parallel sliding door is an excellent choice for those who appreciate an outstanding solution of building and room architecture. A parallel sliding door meets the highest requirements of safety, tightness, barrier freedom and comfort.
Durability and functionality of a parallel sliding door are ensured by a correct installation method. We recommend leaving installation work to experienced specialists and doing it in the stage of construction work, when the internal climate has stabilised. In case of rooms with excessive humidity we recommend using a dehumidifier with sufficient capacity according to the size of the room.

Attention!

1. To avoid installation errors AS Lasita Aken recommends ordering the installation of a parallel sliding door and/or installation consultation from AS Lasita Aken;
2. In case installation is not ordered from AS Lasita Aken, we recommend sending photos of installation holes and situation at the site before the order is delivered from the factory of AS Lasita Aken, so that if needed we can give advice regarding adjusting the installation holes;
3. The warranty of the Product becomes void, in case errors are caused by incorrect installation by the customer and excessive humidity;
4. For protecting Products during the construction work only tape meant to be used on painted wooden surfaces should be used and it is very important to follow the tape manufacturer's instructions regarding the application time of the tape;
5. A parallel sliding door must not be used as a supporting structure, i.e. no openings shall be installed immediately on the sliding door (see Figure 13. A parallel sliding door is not a supporting structure).

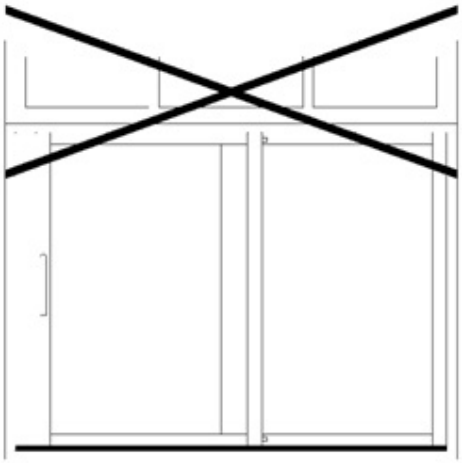


Figure 13. A parallel sliding door is not a supporting structure

Before installation the following shall be checked:
1. the installation hole shall be properly prepared;

2. installation casing/frame shall be made of strong material of sufficient width and properly fastened;
3. the substrate of the doorsill must be stable and horizontal. The permitted tolerance is +/- 0.5 mm per 2 m;
4. in case of a log house settling of the logs should be considered with. Sufficient installation margin is given by the importer;
5. for sealing there shall be a gap between the hole and parallel sliding door of 15-20 mm above and on the sides.

Description of installation

1. To make the job easier, the active frame / frames of the sliding door should be lifted carefully out from the jamb. Be careful not to damages the gaskets, hardware and tracks.
2. The frames shall be placed horizontally on a clean surface to avoid damaging the rollers and gaskets.
3. Lift the jam in the hole. Distances from the internal or external wall shall be given by the Customer.
4. To fix the distances from the internal and external wall assembly tape shall be used, if necessary.
5. **The substrate of the doorsill must be perfectly horizontal!**
6. Support blocks and wedges shall be made from durable impregnated and dry wood (moisture content 12-15%), water resistant veneer or plastic.
7. The length of the support blocks and wedges shall be equal with the width of the doorsill or max. 30 mm shorter than the width of the doorsill.
8. The max. height of the support blocks and wedges from the substrate is 20 mm.
9. The doorsill shall be horizontally aligned with a spirit level or laser and support blocks. The permitted tolerance is +/- 0.5 mm per 2 m.
10. The sides of the jamb shall be vertically aligned.
11. Support blocks should always be placed in locations showed on the figure (see Figure 14. Location of support blocks when installing a parallel sliding door).
12. Wedges shall be installed with the maximum pitch of 300 mm. A jamb shall be fastened with temporary fastening fixtures.

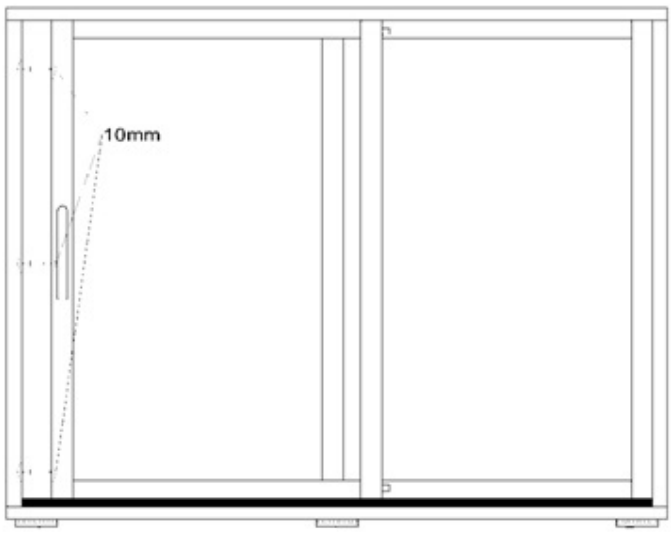


Figure 14. Location of support blocks when installing a parallel sliding door

13. Lift the active frame / frames carefully in the jamb. Always check the gaskets – they shall not be deformed. Ensure that the bottom gaskets are not pressed between the doorsill and frame.
14. Push the frame to the jamb bar close to the handle. Leave 10 mm between the jamb and frame.
15. Fasten the jamb according to the active frame so, that the vertical gap between the jamb and frame is evenly 10 mm (see Figure 13. Location of the support blocks when installing a parallel sliding door).
16. Fasten the jamb permanently by means of assembly anchors from the sides and upper edge with the max. pitch of 700 mm, align the corners with wedges.
17. First drill with 12 mm drill bit a hole for a protection cover 60 mm from the internal edge of the jamb with the max. pitch of 500 mm and thereafter a hole for a fastening screw with 5 mm drill bit.
18. Fasten the jamb permanently to the wall structure with 6*120 screws (see Figure 15. Fastening of a jamb of a parallel sliding door (vertical)) and cover the screw holes with protection covers of suitable colour shade;

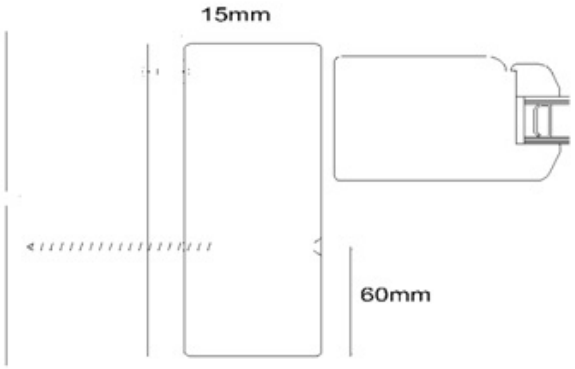


Figure 15. Fastening of a jamb of a parallel sliding door (vertical)

19. Adjust the pins of the active frame, ensure that the frame / frames move smoothly on the tracks, that the safety tenons move freely back in their seats and that the locking mechanism operates freely. The frame shall close tightly. If needed use compressed air and check the connection points of the jamb and frame.
20. Seal the installation gap. For sealing polyurethane foam shall be used. Before applying foam, the architrave has to the made rigid according to the instructions of the window manufacturer. A gap between the jamb and wall is filled uniformly with foam, there should be no voids left. In such a way the required vapour resistance is ensured. After foam has hardened, the support block used to install the windows shall not be removed.

Note! From the point of view of strength-technology, polyurethane foam and any other insulation materials are not considered to be fastening fixtures but they are sealing and insulation materials of a joint.

The aim of sealing the joint between the installation hole and jamb is to protect it against humidity: from storm water coming from outside, as well as from humidity formed from the internal air and exiting from the room.

When sealing it has to be observed that:

- the materials are chemically compatible;
- the substrates are cleaned and primed.

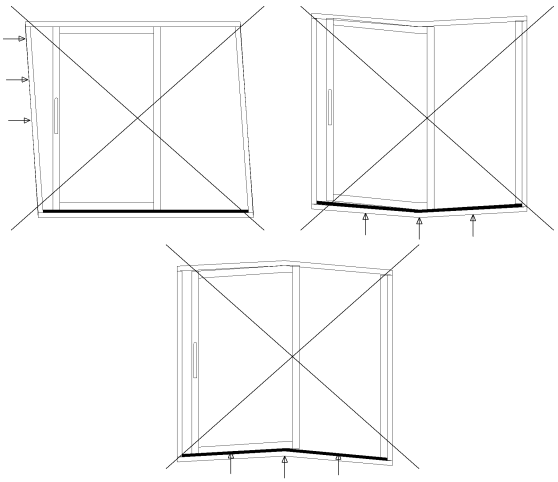


Figure 16. Wrong installation of a parallel sliding door

Operation instructions of a parallel sliding door

Operation instructions of GU parallel sliding door handle

Do not turn the handle at the time you move the frame, otherwise gaskets will be damaged.
For the sake of safety all persons, especially children should be instructed when they use a parallel sliding door for the first time.
In case of problems contact an experienced professional.

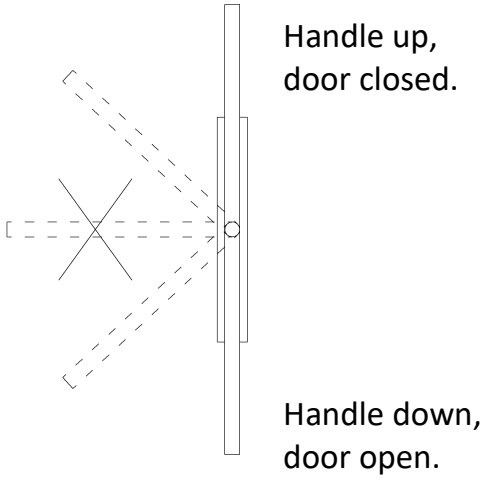


Figure 16. Operation of a handle of GU parallel sliding door

Storage, protection and maintenance of a parallel sliding door

AS Lasita Aken Warranty terms and conditions_Annex 2: STORAGE AND PROTECTION OF WOODEN OPENINGS DURING THE CONSTRUCTION PROCESS
AS Lasita Aken Warranty terms and conditions_Annex 3: MAINTENANCE AND OPERATION OF WINDOWS AND DOORS

INSTALLATION AND OPERATION INSTRUCTIONS OF FOLD AND SLIDE DOORS

ROTO Patio 6080 expands rooms in an especially elegant and efficient way – all sashes can be conveniently folded and pushed to one side. In such a way rooms can be opened in the entire width, providing expansive passage area to the terrace, balcony or winter garden.
Durability and functionality of a fold and slide door are ensured by a correct installation method. We recommend leaving installation work to experienced specialists and doing it in the stage of construction work, when the internal climate has stabilised. In case of rooms with excessive humidity we recommend using a dehumidifier with sufficient capacity according to the size of the room. The warranty of the Product becomes void, in case errors are caused by incorrect installation by the customer and excessive humidity. For protecting Products during the construction work only tape meant to be used on painted wooden surfaces should be used and it is very important to follow the tape manufacturer's instructions regarding the application time of the tape.

OPENING SCHEMES

Figure 17. Opening schemes of ROTO Patio 6080

Attention!

1. To avoid installation errors AS Lasita Aken recommends ordering the installation of a fold and slide door and/or installation consultation from AS Lasita Aken;
2. In case installation is not ordered from AS Lasita Aken, we recommend sending photos of installation holes and situation at the site before the order is delivered from the factory of AS Lasita Aken, so that if needed we can give advice regarding adjusting the installation holes;
3. The warranty of the Product becomes void, in case errors are caused by incorrect installation by the customer and excessive humidity;
4. For protecting Products during the construction work only tape meant to be used on painted wood surfaces should be used and it is very important to follow the tape manufacturer's instructions regarding the application time of the tape;

5. A fold and slide door must not be used as a supporting structure, i.e. no openings shall be installed straight on the slide door.

Before installation the following shall be checked:

1. the installation hole must be properly prepared, the window casing shall be with sufficient width, made from strong material and properly fastened;
2. the substrate of the doorsill must be stable and horizontal. The permitted tolerance is +/- 0.5 mm per 2 m;
3. in case of a log house settling of the logs should be considered with. Sufficient installation margin is given by the importer;
4. for sealing there shall be a gap between the hole and sliding door of 15-20 mm above and on the sides.

Description of installation

To avoid damages during transport and loading, the jamb of the fold and slide door and sashes marked with order numbers are packed separately.

1. Lift the jam in the hole. Distances from the internal or external wall shall be given by the Customer.
2. To fix the distances from the internal and external wall assembly tape shall be used, if necessary.
3. **The substrate of the doorsill must be perfectly horizontal!**
4. Support blocks and wedges shall be made from durable impregnated and dry wood (moisture content 12-15%), water resistant veneer or plastic.
5. The length of the support blocks and wedges shall be equal with the width of the doorsill or max. 30 mm shorter than the width of the doorsill.
6. The max. height of the support blocks and wedges from the substrate is 20mm mm.
7. The doorsill shall be horizontally aligned with a spirit level or laser and support blocks. The maximum permitted tolerance is +/- 0.5 mm per 2 m. The sides of a jamb shall be vertically aligned.
8. Wedges shall be installed with the maximum pitch of 300 mm. A jamb shall be fastened with temporary fastening fixtures.

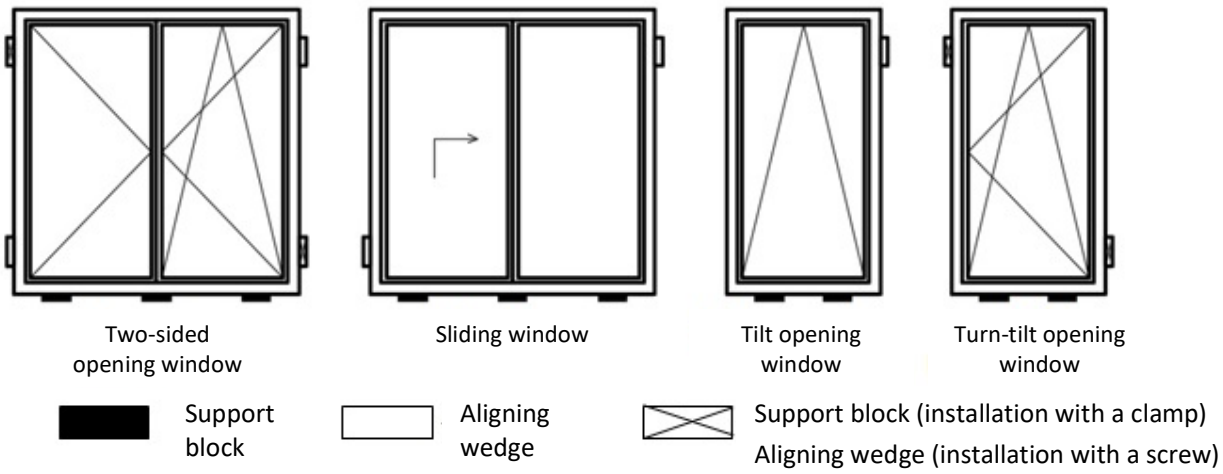
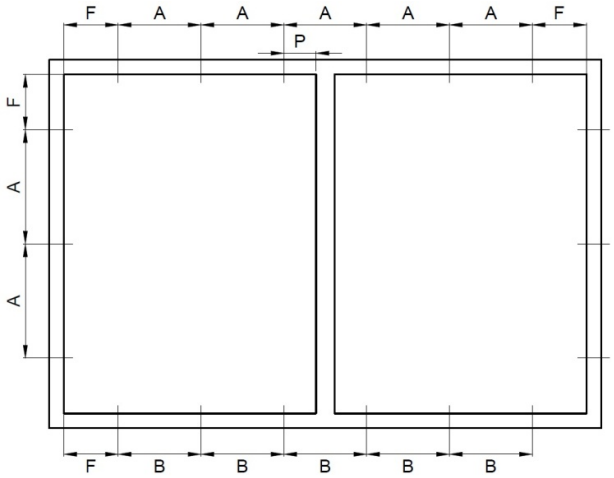


Figure 13. Locations of support blocks and wedges

9. The jamb shall be permanently fastened from the sides and upper edge as shown on Figure 21 Location of the fastening and supporting points.



Location of fastening points:

A – fastening points with the maximum pitch **700 mm**

B – supporting points on the bottom element of hte jamb with the maximum pitch **300 mm**

F – from the internal side of the jamb with the minimum pitch **145 mm**

P – from the edge of the import of the jamb with the minimum pitch **145 mm**

Figure 19. Location of fastening and supporting points

6.1. A fastening method shall be chosen according to the type of the wall. The choice of fastening fixtures (dowels, screws, clamps/anchors) depends on the type of the wall (monolithic, sandwich) and fastening method.

6.1.1. **Dowels** are used in walls made from concrete, solid bricks, calcium silicate bricks, hollow bricks, ceramic and porous concrete bricks, natural rocks, etc**.**

6.1.2. **Screws** are used to fasten jambs to walls made from concrete, solid bricks, calcium silicate bricks, hollow bricks, light concrete, wood, etc**.**

6.1.3. **Assembly anchors/clamps** are used in case the use of a dowel is complicated because of the location of the jamb, for instance in case of lower fastenings (door sill) in sandwich walls and also in case fastening a dowel or screw through the jamb is excluded**.**

10. The upper jamb bar shall be perfectly horizontally aligned and fastened by means of screws through the jamb to the wall structure. The pre-drilled screw holes shall be covered with protective caps of the suitable colour shade. Fastening through the jamb with the screws keeps the upper jamb bar in its place and there will be no obstacles to move the frames.
11. The sashes and jamb of the folder are prepared at the factory so that they are ready for installation. Hinges, rollers, stoppers and all necessary fastening fixtures are assembled in the factory. Also holes for fastening hinges to the jamb and other sash are pre-drilled.
12. Start with installing the first and last sash. Take 16 mm jamb hinge from the hinge set, fix it to the jamb with retainers and fasten with screws. 50 mm sash hinge shall be fixed with a fixing insert to the jamb hinge, the fixing insert shall be fastened with a locking bolt. See Figure 20. Fastening of ROTO Patio hinges, jamb

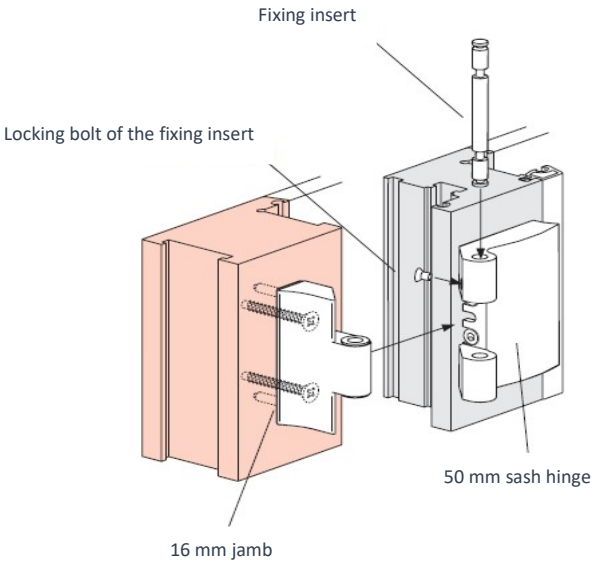


Figure 20. Fastening of ROTO Patio 6080 hinges, jamb

13. According to the opening scheme place the sashes one by one carefully on the tracks with rollers and mount the hinges.
14. Take 20 mm sash hinge from the hinge set, fix it to the sash with retainers and fasten with screws. 40 mm sash hinge shall be fixed with a fixing insert to another sash hinge, the fixing insert shall be fastened with a locking bolt. See Figure 21. Fastening of ROTO Patio 6080 hinges, sash

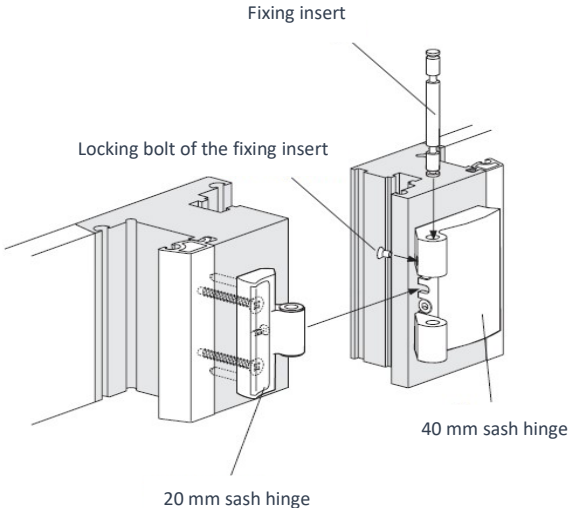


Figure 141. Fastening of ROTO Patio 6080 hinges, sash

15. Assemble the handles.
16. The distance between the sashes shall be equal, from inside 4 mm and from outside 5 mm. Check with the help of wedges with a suitable size. If necessary adjust the position of sashes. For adjusting from the side of hinges use 4 mm Allen key (see Figure Adjusting 22 ROTO Patio 6080 with an Allen key) and for adjusting from the side of a bottom roller use 17 mm open-end spanner and 4 mm Allen key. See Figure 25 Adjusting ROTO Patio 6080 with an open-end spanner.

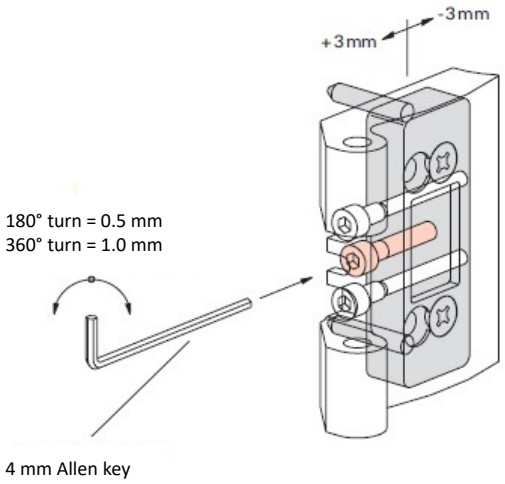


Figure 22. Adjusting ROTO Patio 6080 with an Allen key

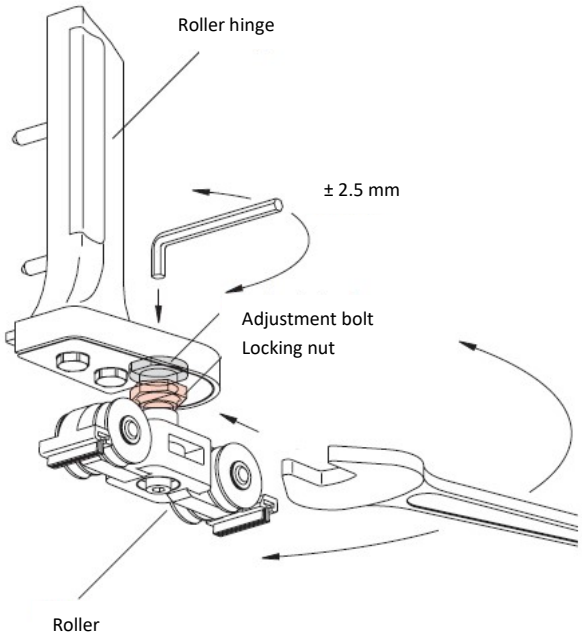


Figure 23. Adjusting ROTO Patio 6080 with an open-end spanner

17. Seal the installation gap. For sealing polyurethane foam shall be used. Depending on the structure of the building the upper side shall be insulated with a foam or wool. In case there is a stable concrete lintel, foam should be used for insulation. But in case of a log house the upper jamb bar shall be insulated with wool. In this way it is possible to add screws for fixing the upper jamb bar later, when the structure has settled. Before applying foam, the architrave has to the made rigid according to the instructions of the window manufacturer. A gap between the jamb and wall is filled uniformly with foam, there should be no voids left. In such a way the required vapour resistance is ensured. After foam has hardened, the support block used to install the windows shall not be removed.

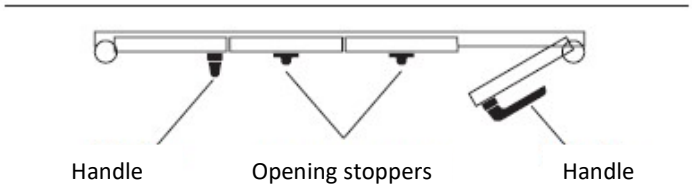
Remark: from the point of view of strength-technology, polyurethane foam and any other insulation materials are not considered to be fastening fixtures but they are sealing and insulation materials of a joint.

The aim of sealing the joint between the installation hole and jamb is to protect it against humidity: from storm water coming from outside, as well as from humidity formed from the internal air and exiting from the room.
When sealing it has to be observed that:

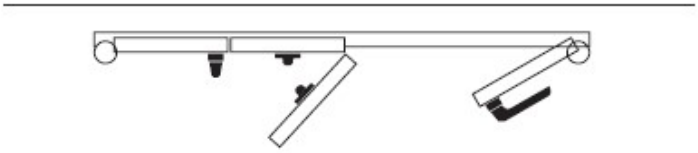
- the materials are chemically compatible;
- the substrates are cleaned and primed.

Operating instructions of a fold and slide door

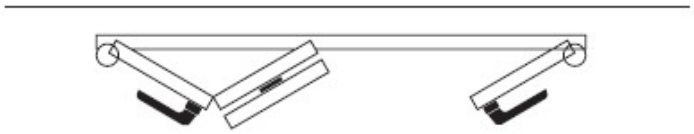
1. Open the active sash.



2. Turn the sashes opposite to one another till the stoppers



3. Open all other sashes and push them to one side of the jamb



Do not turn the handle at the time you move the frame, otherwise the gaskets will be damaged.
For the sake of safety all persons, especially children should be instructed when they use a fold and slide door for the first time.
In case of problems contact an experienced professional.

Storage, protection and maintenance of fold and slide doors

AS Lasita Aken Warranty terms and conditions_Annex 2: STORAGE AND PROTECTION OF WOODEN OPENINGS DURING THE CONSTRUCTION PROCESS
AS Lasita Aken Warranty terms and conditions_Annex 3: MAINTENANCE AND OPERATION OF WINDOWS AND DOORS

INSTALLATION INSTRUCTION OF FIRE SAFETY WINDOWS

Description of installation

Dimensions
The dimensions of openings must be correct, since the quality of insulation depends on it. The width of the expansion joint between the jamb and wall shall be 10-15 mm. To ensure this the installer shall measure the installation holes and give the measures to the supplier of the windows.

Before installation the following shall be checked:
• for aligning wooden and plastic wedges shall be used;
• windows should be aligned with the same height with the help of a laser;
• the distances from the internal or external wall shall be given by the Customer;
• to fix the distances from the internal and external wall assembly tape shall be used, if necessary;
• for installation assembly anchors and screws shall be used (corrosion resistant screws);
• for insulation high quality professional fire protection foam with low post-expansion rate PENOSIL Premium Fire Rated Gunfoam B1 shall be used.
• handles and covers shall be installed.

Description of installation:
1. Installation of a window in the hole starts from aligning the bottom jamb bar with wedges.
2. For initial aligning 9 mm wedges made from veneer are used. For real alignment plastic wedges shall be used.
3. In case of non-opening windows only the bottom jamb bar shall be aligned with a wedge.
4. In case of opening windows also the side jamb bars are aligned with wedges in order to ensure diagonal resistance also to the torsional moment generated in the frame.
5. The maximum distance between the anchors is 500 mm. (See Figure 24 Location of the installation anchors of a fire safety window)
6. Anchors shall be fastened with two screws: one screw for the jamb and one for a wall structure.
7. For insulation fire protection polyurethane foam PENOSIL Premium Fire Rated Gunfoam B1 shall be used.
8. A gap between the jamb and wall is filled with foam so that there will be no voids.
9. In case it is not foreseen that the windows are additionally insulated with joint tapes, the foam shall be applied sufficiently precisely, so that it should not be cut later. In such a way the required vapour tightness is ensured.

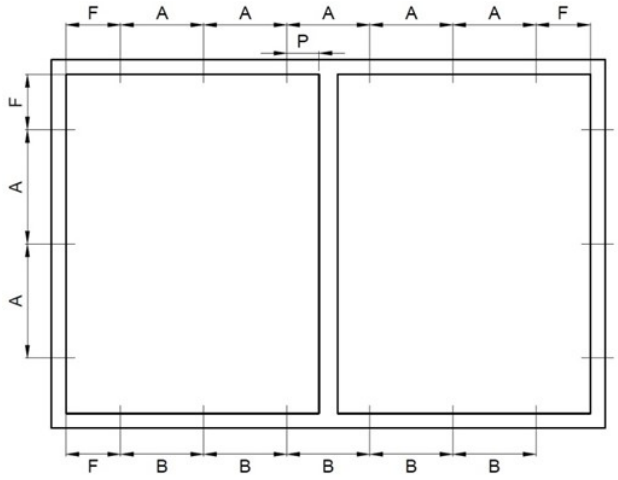


Figure 24. Location of the installation anchors of a fire safety window

Location of the fastening points:
A – fastening points with the maximum pitch 500 mm
B – fastening points on the bottom element of the jamb with the maximum pitch 500 mm
F – from the internal side of the jamb with the maximum pitch 145 mm
P – from the edge of the impost of the jamb with the maximum pitch 145 mm

Filling the expansion joints:
1. Before applying acoustic, thermal and fire protection foam the architrave has to the made rigid according to the instructions of the window manufacturer.
2. The gap between the window casing and wall shall be entirely filled with high-quality polyurethane foam PENOSIL Premium Fire Rated Gunfoam B1.
3. Wedges used to install windows shall not be removed after the foam has hardened.

NB! When installing fire safety windows in external boundaries it should be remembered that a fire safety glass pane is sensitive towards cold and heat (min. 10°C, max. +45°C) and has to be protected against rain and direct sunlight.

INSTALLATION INSTRUCTION FOR CORNER WINDOWS WITH OVERLAPPING GLASS PANEL

See page 9-16 INSTALLATION INSTRUCTIONS OF OPENINGS

Corner windows with overlapping glass panel are transporte to the site unassembled. Frame parts, glass panels and installation accessories are all separately.

1. According to installation instructions you must secure wooden frame parts into the opening.
2. The corner connection of the frame parts must be filled with self-expanding windbreaker tape and silicone. (premade grooves are made in the factory)

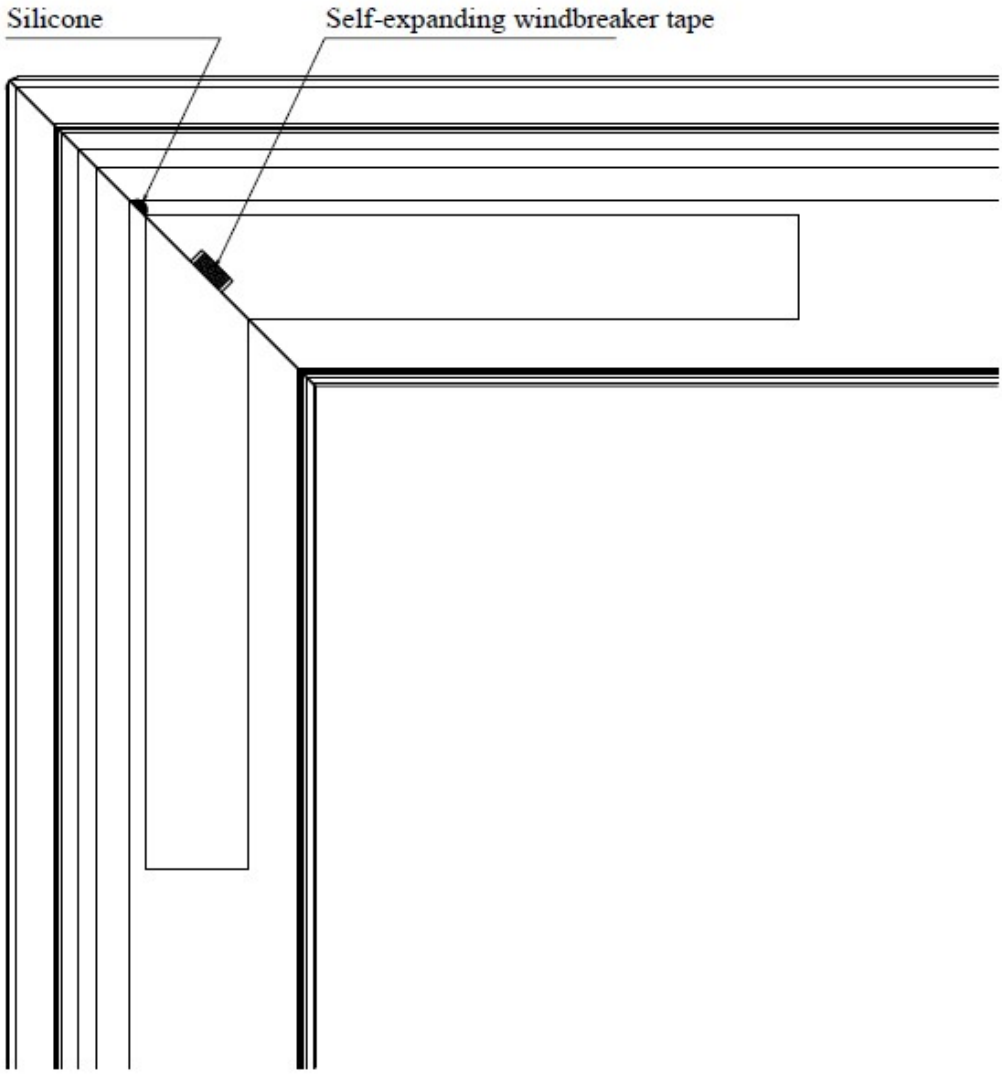


Figure 25. Sealing the frame parts.

3. Wooden window corners must be connected together with 5*50mm metal corner connectors and C3-C5 class wood screws. Wood-clad windows are connected together with 6*150mm metal connectors and C5 class wood screws.

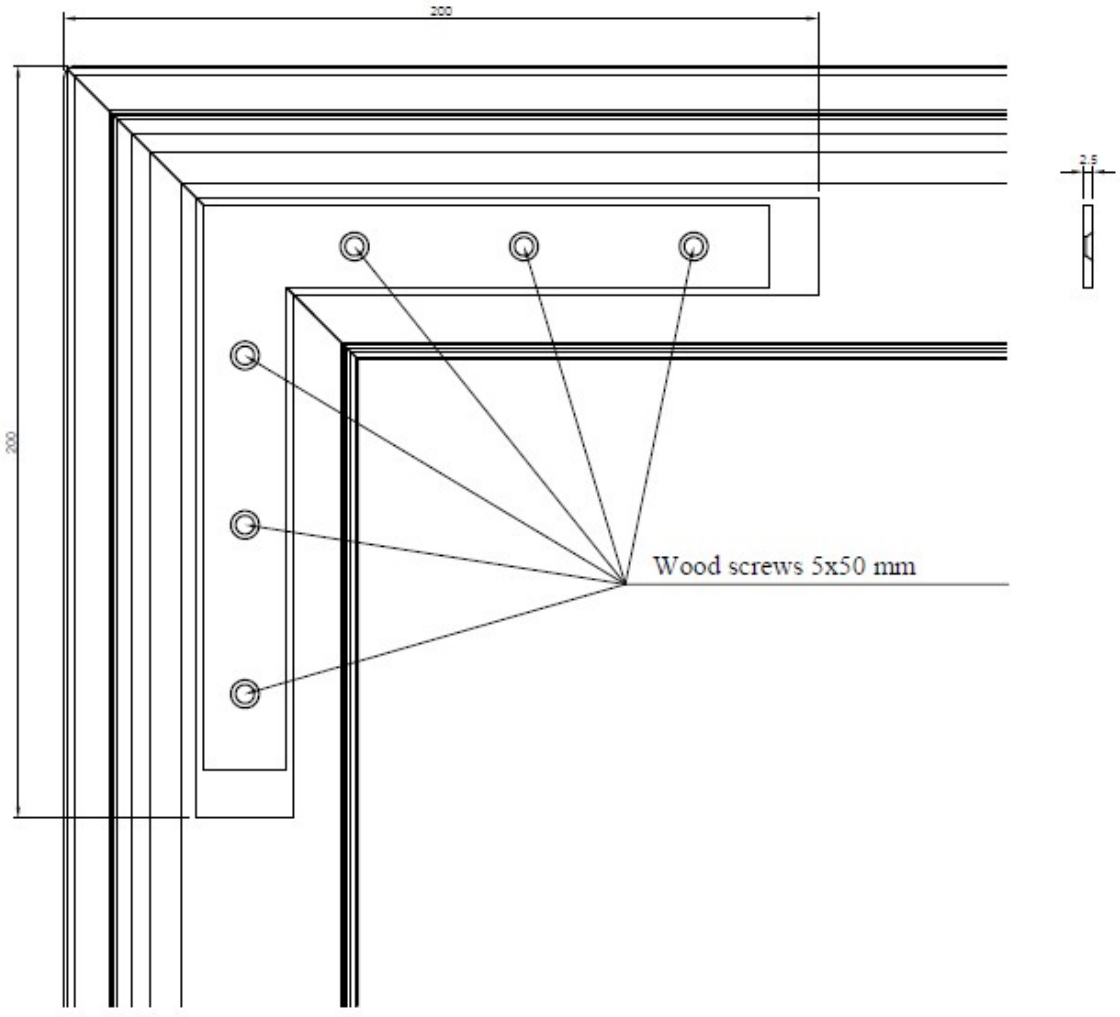
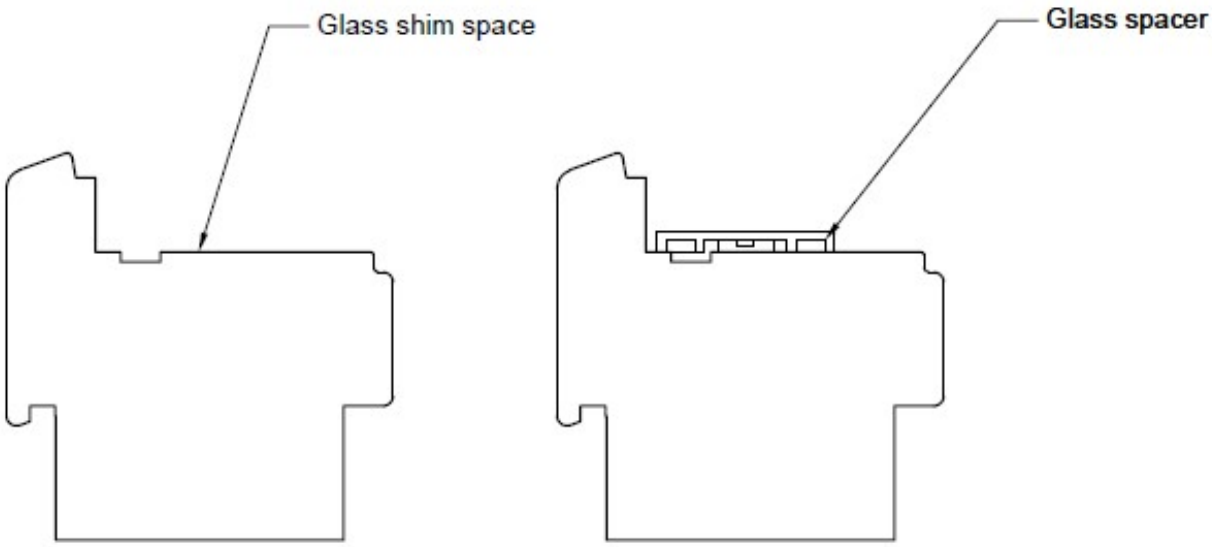


Figure 26. Connecting the frame parts.

4. First of all put the glass spacers into to glass shim space, then lift in the glass panel which has the overlap. After that put glass spacers to the top of the glass shim. Add the temporary glazing beads, to secure the glass panel. Tape the outside and inside edges of the glass panel to protect it from black silicone.



5. Secondly put the glass spacers to the other frame bottom glass shim. Lift in the second glass panel which does not have the overlapping glass. Put glass spacers to the frame top glass shim space. Add the temporary glazing beads to secure the glass panel. Tape the glass panel where it aligns with the overlapping glass. Carefully move the glass panels together that there will be 3 mm gap between the overlapping glass panel and the standard glass panel. Now add black silicone to the 3mm gaps that are inside and outside of the window, then remove the tape to have nice clean surface.

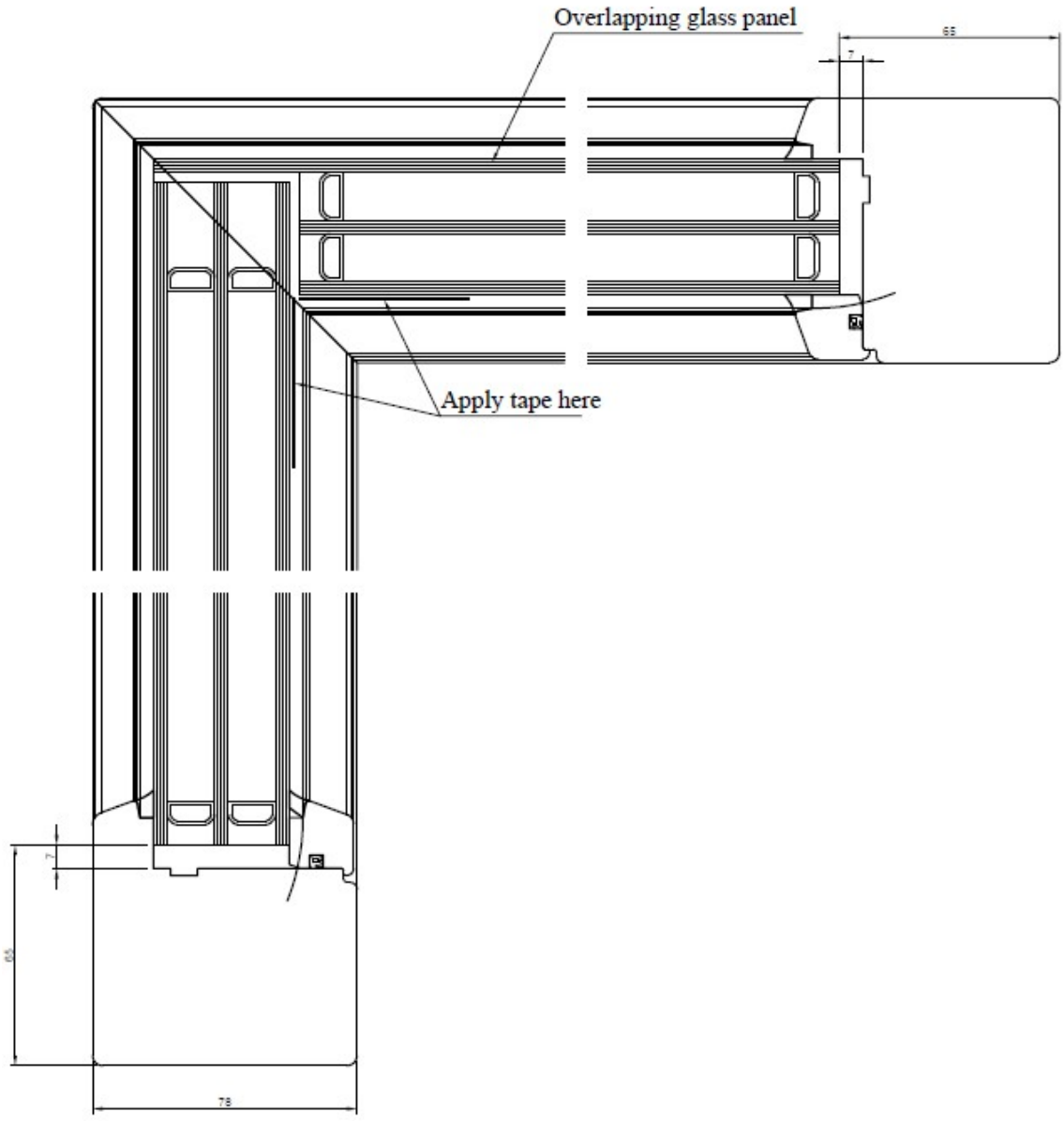


Figure 27. Overlapping glass corner window

6. Cut the originaal glazing beads to the correct length and remove temporary glazing beads. Secure the glazing beads with nails and fill the silicone grooves inside and outside of the window.
7. In wood-clad system windows you must add also outside aluminium corner profiles.