



INSTALLATION MANUAL



OKNA
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PVC, aluminium joinery installation

INSTALLATION IN ACCORDANCE WITH THE FOLLOWING INSTRUCTIONS FORMS THE BASIS FOR THE WARRANTY

This manual contains technical conditions for the manufacture and acceptance of installation of PVC sliding windows and doors in residential and public buildings. The manual is intended for installation companies, designers, purchasers, building supervisors, and individual customers.

GENERAL PRINCIPLES

1. The proper installation of windows determines their proper functioning thus it is recommended to have it done by authorized

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2. Installation must be carried out in accordance with the window installation guidelines. In order to avoid damage, windows which are transported individually should be adequately protected, and the means of transport should be suitably adapted for the transport purposes.

3. HSE regulations must be adhered to during installation.

Before commencement of works, it is

4. necessary to check whether the delivered products are consistent with the order, also in terms of completeness. All reservations related to the quality and incompatibility of the goods with the order should be entered into the WZ document (Stock Issue Confirmation [CI]).

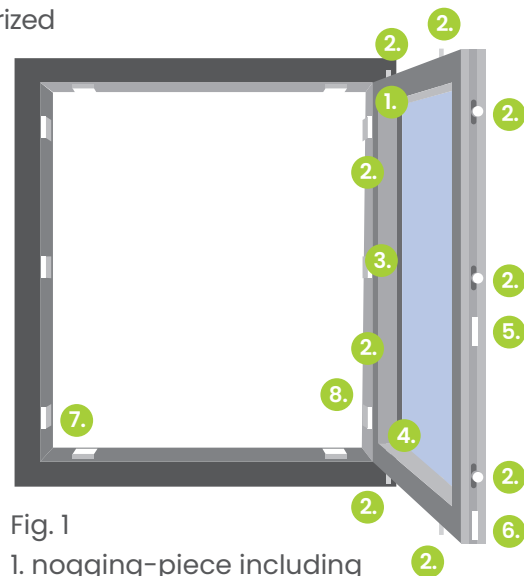


Fig. 1

1. nogging-piece including hinge
2. locking points
3. tilt hinge (only in tilted windows)
4. sash hinge - frame hinge
5. balcony clasp lock
6. sash lifter
7. guide - tilt catch pawl
8. additional element for heavy sashes

PVC, aluminium joinery installation

5. It is necessary **to keep in mind** that uninstalled joinery is exposed to mechanical damage and its proper stability is obtained only after installation.
6. Windows containing protective film should not be exposed to intense sunlight
7. Installation should take **place in a properly marked area**.
8. The substrate for the window installation should be dry, even and durable.
9. All elements should be **installed vertically**, horizontally and flush if there are no other installation guidelines.
10. As soon as installation and a potential treatment has been completed, it is necessary to remove the protective film as after a long period of time and prolonged exposure to sunlight this may be hindered or even impossible to carry out. Check whether the drainage holes are secured on the outside and inside and allow water trouble-free drain onto the sill. External window sills must not be installed above the drainage holes.
11. Before using the windows, technical condition of the hardware components must be checked, and any construction debris which has arisen during installation or plastering work must be removed.
12. It is not permissible to clean the windows with abrasive elements or caustic agents.
13. Due to the high tightness of the windows, the rooms should be properly ventilated.
14. The windows can **be put out** of adjustment during handling and transport. After installation, a functional check must be carried out and, if necessary, adjustments must be provided.
15. Upon completion of the installation works, the building owner must be trained in the use of the product

IMPORTANT



The product can be used only after full installation! The installation site shall be kept clean and tidy after completion of the works. Users must be trained in the operation of the products.

Principles of selection and installation of window and door joinery

- 1. The size**, dimensions and design must be made in accordance with the construction project or after measurements and appropriate strength calculations of the joinery.
- 2.** Before setting up the joinery in the façade, it should be checked whether:
 - it is necessary, due to the size, span and static load of the joinery, to use reinforcing elements such as static connectors, columns [between façade elements, or tightened on façade elements],
 - it is necessary to use sealing elements for frames to be assembled,
 - it is necessary to ensure the stress compensation, and if it is necessary to use dilatation elements,
 - the applied overlapping shutters do not cause deformation of the joinery – the frames of the sashes; if they do not constitute an excessive load for the construction, if it is necessary to ensure independent fixing of the shutters that do not overload the joinery
 - the structures set in the façade / loaded with a shutter / can be freely opened.
- 3. Support and spacer blocks** are used for spacing and aligning the joinery in the window frames; they should be placed in such a way as to ensure compensation of frame stresses in fluctuating temperatures. Fixing the joinery with mechanical fasteners – dowels, screws or anchors, without any support and spacer blocks, is insufficient to transfer the load. The joinery may deform over time.
- 4. Support blocks**, not to be removed, should be made of **impregnated** hardwood or hard PVC.
- 5. Blocks / wedges for positioning the frame** in the opening should be removed after fixing, but support blocks should not be removed.

Principles of selection and installation of window and door joinery

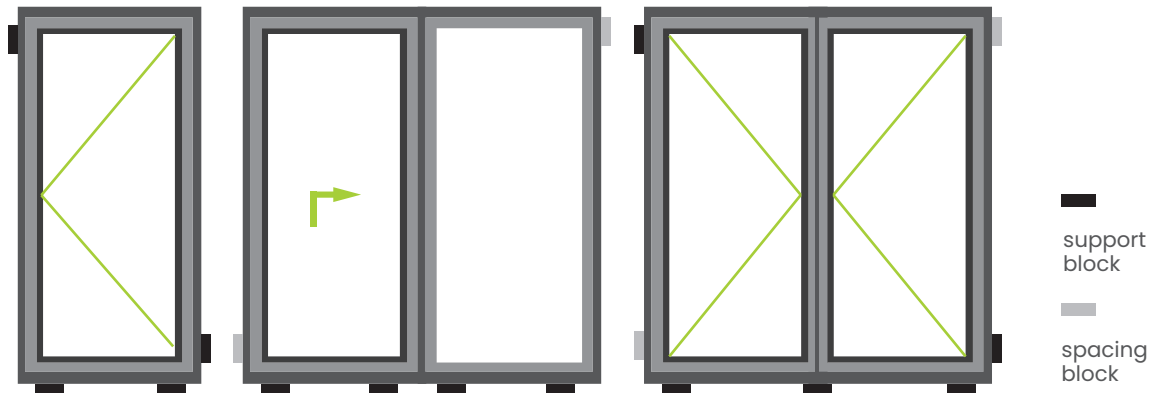


Fig. 2. Layout of spacer blocks / wedges to determine the position of the joinery.

6. The permissible vertical and horizontal deviations of the joinery in the opening with a length of the element up to 3.0 m should not exceed 3.0 mm.
7. **The gaps should not be smaller than 10 mm** and their maximum size should not exceed 20–30 mm. Joints between door frame elements and façade elements should be made "butt joint" and sealed. For longer spans and dark coloured joinery, suitable expansion joints should be made and sealed.
8. **Vapour-barrier and vapour-permeable strips, flexible vapour-barrier and vapour-permeable foils, butyl films** for internal sealing should be used in accordance with the manufacturer's instructions.
9. Fixing joinery in internal reveals / façades

Principles of selection and installation of window and door joinery

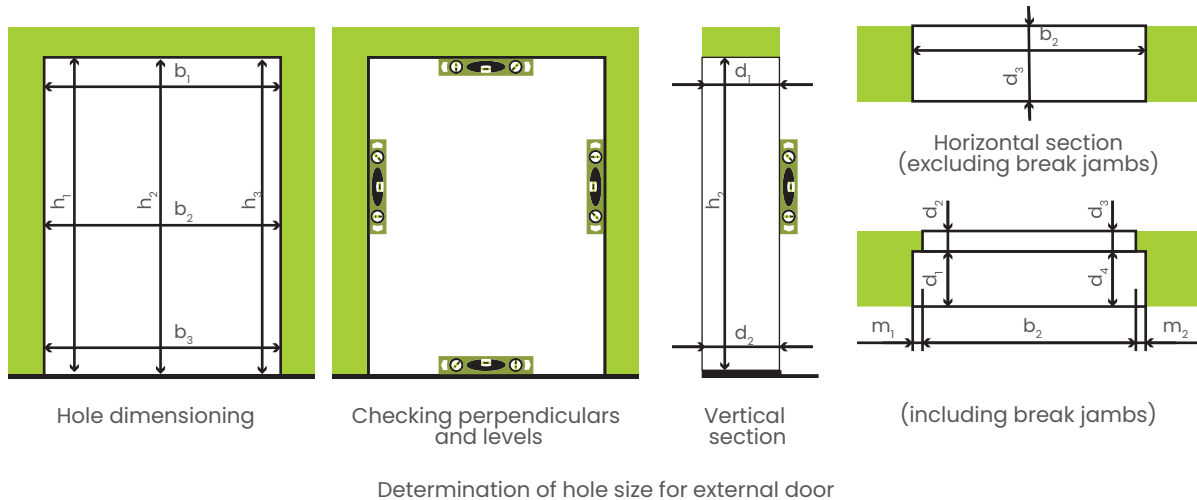


Fig. 3. Dimensioning of the wall internal reveal: excluding break jambs, including break jambs.

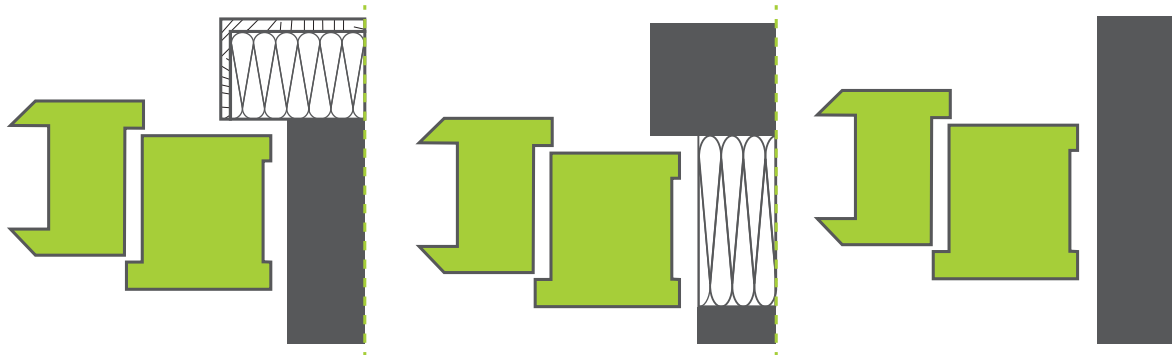
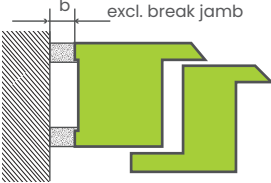
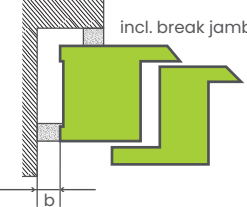
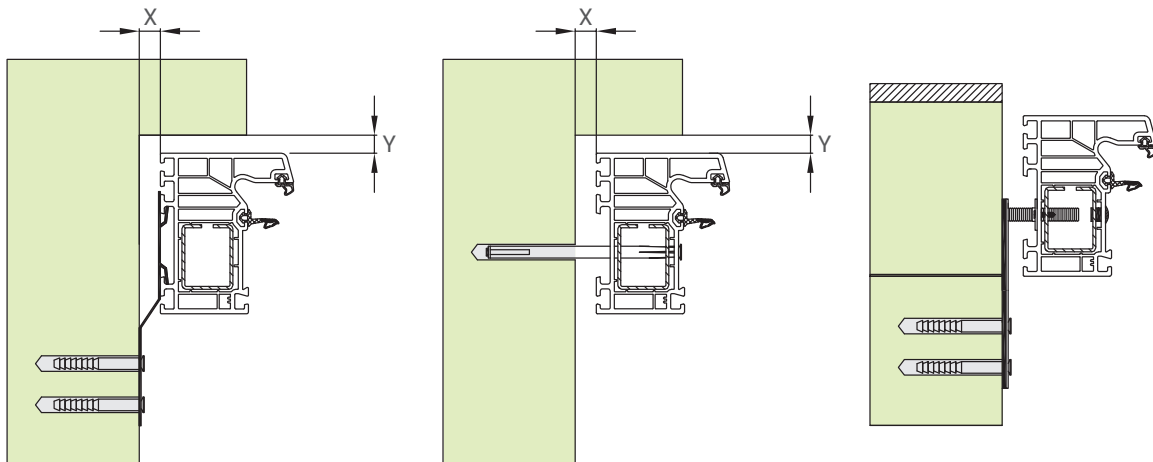


Fig. 4. Layout of window frames in the internal reveal of walls as part of various construction:
in a solid wall with one layer,
in a layered wall with internal insulation [including break jamb],
in a solid wall with external insulation [including break jamb].

Principles of selection and installation of window and door joinery

Types of sections	Minimum gaps			
	Internal reveal excluding break jamb		Internal reveal including break jamb	
				
Type of profiles	Length of elements (m)			
	up to 1,5	up to 2,5	up to 3,5	up to 4,5
	Minimum width of a gap - b (mm)			
PVC white	10	15	20	25
PVC incl. veneer (through dyed)	15	20	25	30
PVC incl. veneer	10	10	15	20
Aluminium incl. thermal separator (light)	10	10	15	20
Aluminium incl. thermal separator (dark)	10	15	20	25
Wooden	10	10	10	10
The sealing material shall have a deformation capacity of 25%				

Fastening elements for joinery in internal reveals / façades



Installation of window frame on anchors

Installation of window frame on dowels

Installation of a window frame on brackets

Fig. 5. Types of mechanical connectors.

Principles of selection and installation of window and door joinery

- 10.** Fastening must be carried out in such a way that the external loads are transferred to the building/elevation structure via the fasteners and the functionality of the joinery is fully maintained; i.e. the opening and closing movement of the sashes is smooth, without braking or catching of the sashes on other parts of the structure. Similar principles should be followed when installing joinery within façades.
- 11.** The fixings should be placed on the sides of the door frame at a distance of not more than - from the corners - 15-20 cm, between fixings - 50-70 cm. The lower frame should also be fixed.
- 12.** For fixing the frames in the wall of the building / façade- depending on the type of wall (monolithic, layered) and the way of fixing, assembly connectors are used (dowels / pins, anchors and screws / bolts). The depth of the above elements in the wall should be appropriately selected.
- 13.** Polyurethane foam and insulation materials are not used for fixing, but only for sealing and insulating the gap between the frame and the wall.
- 14.** Expansion bolts (dowels) are used for concrete, solid brick, silicate brick, hollow brick, ceramic and cement blocks, aerated concrete, stone, etc.
- 15.** Screws can be used to fix frames to concrete, solid brick, silicate brick, hollow brick, light concrete, wood, etc. The use of screws should be adapted to the type of frame. Screws may be used to join frames with façade elements.
- 16.** Building anchors should be used where the frame spacing is too large for dowels, e.g. for bottom fixing (threshold) in sandwich wall solutions, etc.
- 17.** The shutter should be fixed to lintels or relevant spandrel beams, transom bars.
- 18.** Installation should be completed with a signed acceptance protocol.

Principles of the three-layer sealing system

The internal seal between the door frame and the internal reveal should prevent the penetration of water vapour from the room into the gap between the door frame and the building wall, i.e. prevent the condensation of water vapour in this gap (i.e. in places where the temperature is lower than the dew point). Basic sealing principle - "tighter on the inside than on the outside" This allows water vapour to diffuse from the joint.

The gap between the door frame and the internal reveal should be entirely filled with thermal insulation. During sealing, care should be taken to ensure that the joint is thoroughly filled; at the same time, no deformation of the frame shall occur.

The external sealing between the door frame and the internal reveal shall be carried out in such a way as to prevent rainwater from penetrating into the joint, while at the same time maintaining the vapour permeability.

Sealing materials. Depending on the place of application, the following materials can be used for sealing: polyurethane foams, tapes and porous sponges, mineral wool, glass fibre, etc. Vapour barrier and vapour-permeable foils, impregnated expanding tapes, butyl sealing tapes, permanently elastic putties (neutral silicones) , construction distance cords, compressible sealing materials.

Application. When carrying out the sealing, the manufacturer's guidelines for sealing materials should be followed, taking into account:

- chemical compatibility of adjoining materials,
- cleaning the adjoining surfaces
- priming of the adjoining surfaces (depending on the type of material),
- requirements for use in relation to air humidity and temperature.



IMPORTANT

Window and door joinery must be installed mechanically. Installation of the window using mounting foam only, adhesives or similar materials **is not allowed**.

Hardware and profile elements should be protected against paint, cement, or lime.

In case of HST-type terrace doors, the transport of loose construction materials (wheelbarrow transport, unintentional contamination with e.g. sand, cement) through the system threshold should be eliminated or reduced to a minimum.

The polyurethane foam layer should be protected against excessive solar radiation and moisture penetration. The method of protection should be selected individually, taking into account the structure of the wall and local conditions.

Properly installed windows should be windproof and have adequate sound and heat insulation in accordance with current building regulations and other regional guidelines.

Maintenance and use

Frame and sash: Remember that PVC window surfaces should be cleaned with a soft cloth or sponge, soaked in mild cleaning agents. Under no circumstances should aggressive chemicals or preparations containing abrasive substances be used.

Gaskets: Do not omit the gaskets which should be wiped with silicone grease. Technical petroleum jelly can also be used for this purpose. This process should be repeated at least once a year.

Windows: The windows should be cleaned with suitable preparations which do not contain ammonia or similar aggressive substances. Dealing with glass cleaning is described here.

Fittings: It is worth to adjust the fittings fairly often and to check their cleanliness for wear and tear. Check of all moving hardware components and lubricating them with a hardware maintenance oil should be carried out at least once a year.

Remember that when it comes to major repairs and installation of PVC windows, wooden windows or aluminium windows, it is worth reaching for the help of specialists and using the services of professional AM Okna employees. If you have any questions or problems with maintenance of your windows please contact our service team.

