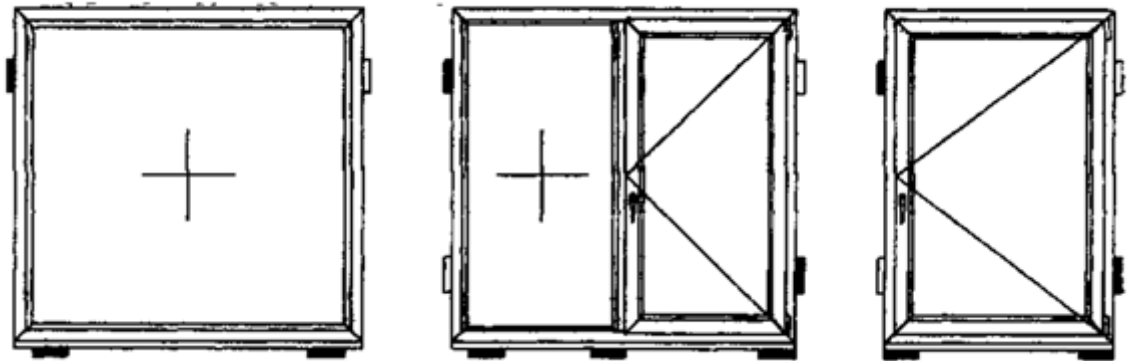


## Brief recommendations and requirements during mounting of a PVC window/door system

1. Doorway for mounting of PVC door/windows must have proper geometry. Mounting must be made on the previously thoroughly prepared surface;
2. Window or door frame have to be installed on the bottom load-bearing pads. By using spacer pads and, temporary installed wedges, door or window block is setting up to the project position;



3. Load-bearing pads must be made from material which can withstand the loads, which acts on the windows or door and transmit them on the wall constructions. Position of such pads shouldn't interfere to linear thermal expansion of the door or window blocks;
4. Load-bearing pads-linings are located at the corners of the frame (under the rotary hangers), in the area of bars and vertical mullions. Support pads must be installed on the distance 150mm-200mm from the internal corners of the frame. Wherein length of such pads must be not less that 100mm and width more that support profile but less than width of the window/door frame;
5. For measurement verticality and horizontality of the installed windows or doors preferable to use laser level. Final measurements have to be done with 1mm accuracy. Vertical tolerance in the plane of the construction has to be less than 2mm per 1000m of height, but not bigger than 3 mm per all length. Horizontal tolerance has to be less than 2mm.
6. For providing required transmission of the loads, fastening of a door/window must be done only by mechanical way. For fastening of the window/door blocks prohibited to use polyurethane foam or another glue material;

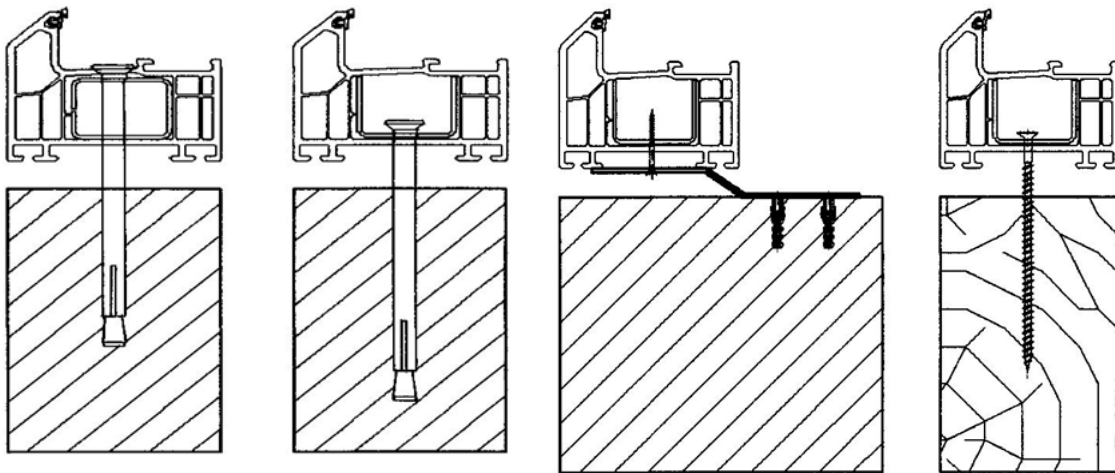
During installation of the mechanical fastening elements must be keep the next rules:

- The hole must be drilled, prohibited to use percussion instrument (exception – concrete wall);

- During fastening to the bricks wall the hole must be drill in to the mounting seam, filled by mortar;
- The bearing capacity and length of the dowels must correspond to the wall structure, while taking into account the instructions of the manufacturers of fasteners;
- Drilled holes must be purged from dust;

**It is prohibited nailing into the structure.**

Fastening of the windows and doors must be made by three types of special mechanical fastening elements:



- construction dowels/anchor fastening;
- construction self-tapping screws;
- mounting plates.

Anchor fastening is able to perceive large loads of shearing, bending, tearing forces. It is used in concrete and brick walls, in wall structures made of natural stone. The use of this type of fastening requires strict adherence to a certain distance between walls and blocks.

The advantages of anchor fastening are the high strength of the joints of window and door blocks with the wall structures of buildings. The disadvantages of rigid fastening with anchors and mounting screws are a violation of the integrity of the structures of window and door units, the concentration of mechanical stresses in the places of installation of fasteners, which can lead to the appearance of cracks in the area of connections of window and door units under the action of shock loads and the appearance of cold bridges near the mechanical fastening. Uneven twisting of anchors around the perimeter of the block is not allowed;

Construction screws are used during the installation of windows and doors in light concrete, wood, ceramic blocks and bricks with vertical voids and they perceive the same loads as anchors (dowels). The minimum penetration into the wall should be from 30 mm to 60 mm and should be agreed with the screw manufacturers and taking into account the wall material;

Mounting plates are a less rigid fastening than anchors and screws, but they will perceive vertical displacements of structures during their operation;

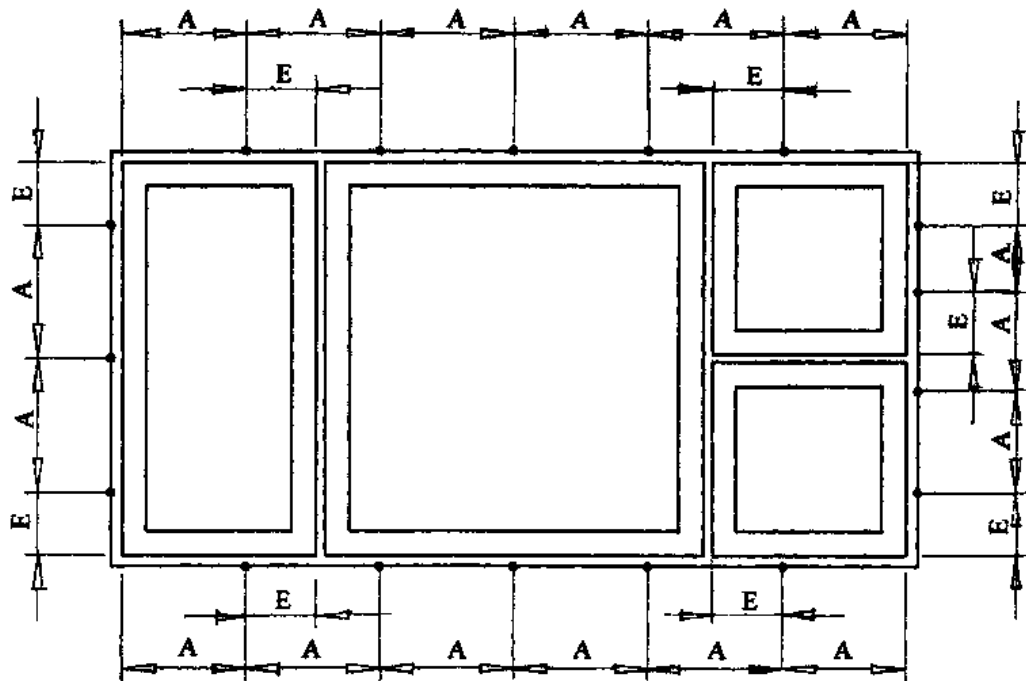
Mounting plates, the thickness of which must be at least 1.5 mm, unlike anchors, dowels and screws, must be fixed in advance on the side of the frame that is adjacent to the surface of the window/doorway.

Each mounting plate is attached to the wall using two screws with a diameter of at least 5 mm and a length of at least 40 mm.

The use of nails to attach the mounting plate to windows or doors is prohibited.

Dowels, which consist of a plastic sleeve and a metal screw, as well as anchors, are capable of absorbing heavy loads (shear, bending, shear forces) and are used to fasten windows and doors to all wall surfaces, but at the same time they perceive well the effect of alternating temperatures.

#### 7. Location of fasteners



$A < 700$  mm;  $E = 150$  mm; For laminated PVC  $E = 250$  mm.

**During mounting of the door/windows all time need to guide by building codes, standards and recommendation adopted in your country.**