

Windows in step-by-step modernisations – First the thermal insulation, then the windows

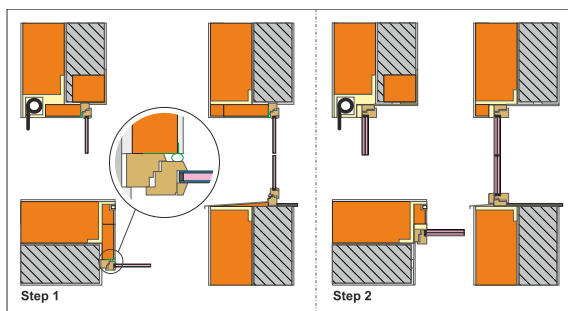
In practice, windows and façades are seldom modernised at the same time, even though this makes sense with reference to the costs, avoidance of thermal bridges and optimisation of solar gains. The following information is helpful if the thermal insulation is to be applied first and the windows subsequently replaced.

Positioning of the window

It is advantageous to anticipate the future installation of the new window in the new insulation layer at the same time. For this, a mounting system in front of the wall can be used such as those supplied by companies like Iso Chemie, Hanno or Illbruck. Another possibility is do-it-yourself subframes made of wood or rigid insulation materials (e.g. CompacFoam, Purenit or similar products or materials).

The front mounting system is fixed to the exterior wall and the thermal insulation is installed. The reveal is then covered with insulation up to the old window. A plaster keying strip is provided at the position of the future window. When the window is replaced the inner part of the extended insulation of the reveal can be removed up to the plaster keying strip and the new window can be fitted in the intended position without necessitating any further work on the compound insulation system.

Fig. 1 As a first step, a mounting frame is applied all



around and the new insulation is installed. In the second step the new window is fitted into the mounting frame.

Extending the insulation to cover the casement frame is particularly advantageous in respect to the installation thermal bridge. Here, the insulation of the reveal can act as a fitting element with a tube seal at the end towards the casement frame, which joins to the casement frame. The thermal situation is

significantly improved in this way. In addition, the old window frame is now optimally weather-proofed, which may extend its service life. This measure is only easily implementable at the side and top connections; in contrast, at the parapet rain water must be drained away.

Shading/roller shutters

Darkening or shading elements should be changed in the first step, since existing roller shutter boxes constitute a weak point and are difficult to improve. The roller shutter box can be mounted directly on the front mounting system. In doing so, as much insulation as possible should be provided between the roller shutter box and the window in order to minimise the thermal bridge. Alternatively, a coupled window with a shading element in the space between panes is recommended.

Replacing the glazing

If the window is in good condition, then extended insulation of the casement frame should be installed so that the service life of the window is extended. New triple glazing can then be installed. In order to reduce the weight and avoid unnecessary load on

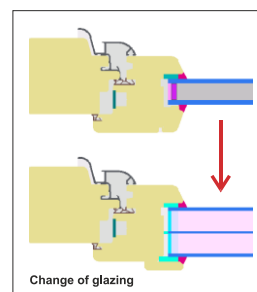


Fig. 2 Replacing the glazing

the frame, heat-strengthened/semi-tempered thin layer glazing should be used. The new glazing may then be as heavy as the old one. Due to the additional space between the panes, the glass unit will be thicker.

With (expensive) krypton gas as a filling, it is usually sufficient to use a thinner glazing bar to adjust the frame to the new glass pane. In the case of argon gas, an intermediate space of 2*18mm equating to a glass assembly of 44mm represents the thermal optimum. Adaptation of the glazing bar is advisable.

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