



ENERGY SAVING SYSTEMS

WINDOWS AND EXTERNAL DOORS MOUNTING SYSTEMS



WINDOWS AND EXTERNAL DOOR INSTALLATION

THE RULES ON EFFICIENT USE OF ENERGY IN BUILDINGS (Official Gazette of the RS No. 93/2008) prescribing a complete sealing of buildings in Slovenia have been in use since 2008.

The Rules apply for both designing and the construction of new buildings and for the renovation of the existing ones. They also apply for all the joints, wall openings and final joints between windows, doors and walls. The Rules are intended to additionally reduce the need for energy as well as damage on facilities. Joint tightness represents a weak point in construction physics and is also the cause for unwanted and hardly controlled losses of heat and damage due to dampness. Classic mounting systems including sealing with nothing but polyurethane foam are no longer sufficient as thermal bridges are formed at the joints. With the development of contemporary thermal-insulation windows with minimum air permeability the attention has been drawn to how properly install these windows into the walls. Unfortunately, the Rules on Efficient Use of Energy in Buildings do not contain the exact mounting instructions. Instead, the installation guideline issued by RAL Gutegemeinschaft Fenster und Haustüren e. V. in 2006 can be used. The guideline contains the basis for proper mounting of windows, doors and the corresponding mounting frames, and is as such a practical guide for architects, planners, foremen and fitters.

In relation to water permeability and vapour tightness the basic principle of »INSIDE TIGHTER THAN OUTSIDE« should be followed.

The external sealing should represent a barrier for wind and rain and has to be vapour permeable. On the contrary, the interior sealing has to allow the air flow and has to be vapour tight to such an extent that vapour is not formed at the external sealing. Vapour permeability is defined with Sd value, indicating how thick the air layer has to be in order to achieve the same vapour tightness. In sealing tapes this value is indicated, while in foams it depends on their thickness. It is calculated by multiplying the layer thickness by the factor for vapour tightness and corresponds to $\text{del } 4 \mu \geq 2500$ as stipulated by standard DIN 4108. If the layer is 10mm thick, we achieve vapour tightness of 25m.

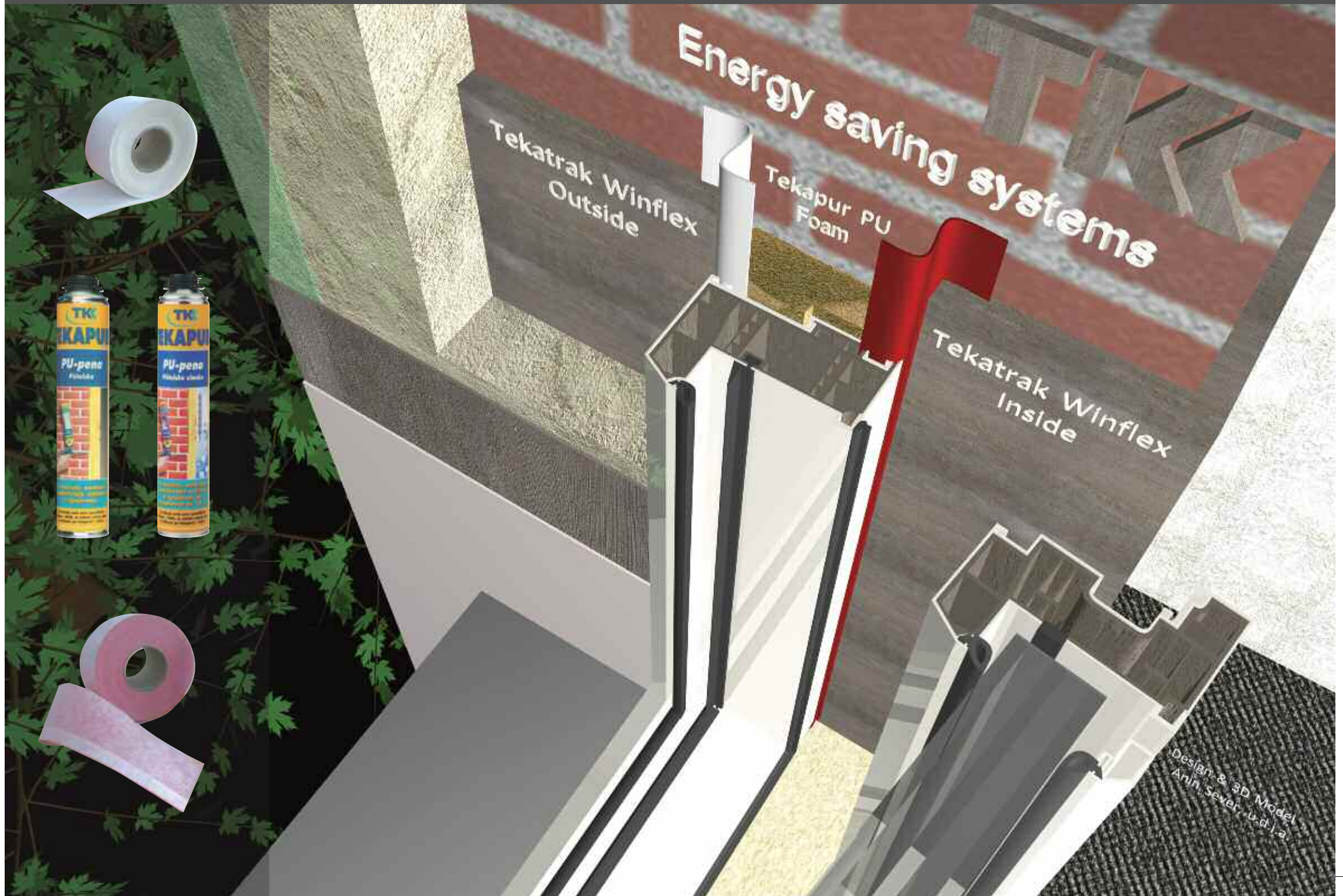
SEALING SYSTEMS

There are different ways, tested in practice, of how to professionally seal the final joints between window and door frames. Some new systems have also been developed for special situations and requirements in relation to sealing. Basic suitability of the system has to be planned for each individual case, while newer systems call for special attention in terms of respecting their characteristics. Nevertheless, the decision on which system to choose depends on the individual and on the materials we are sealing.

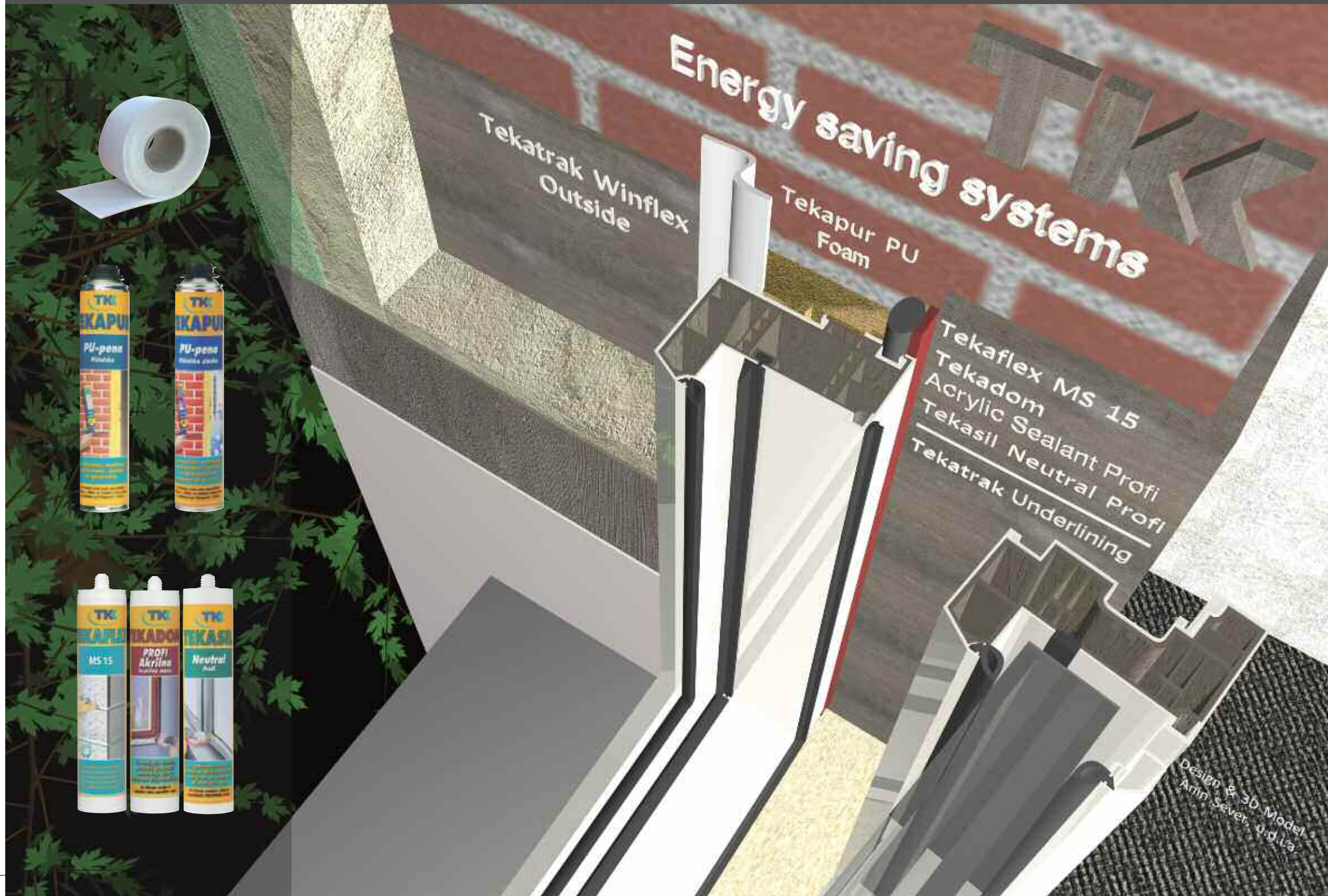
WINDOW AND EXTERNAL DOOR MOUNTING

	EXTERNAL SEALING	INTERMEDIATE SEALING	INTERIOR SEALING
	TEKATRAK WINFLEX OUTSIDE	TEKAPUR PU FOAM	TEKATRAK WINFLEX INSIDE
	TEKATRAK WINFLEX OUTSIDE	TEKAPUR PU FOAM	TEKAFLEX MS 15 or TEKADOM ACRYLIC SEALANT PROFI or TEKASIL NEUTRAL PROFI
	TEKAFLEX MS 15 or TEKASIL NEUTRAL PROFI	TEKAPUR PU FOAM	TEKATRAK WINFLEX INSIDE
	TEKAFLEX MS 15 or TEKASIL NEUTRAL PROFI	TEKAPUR PU FOAM	TEKAFLEX MS 15 or TEKADOM ACRYLIC SEALANT PROFI or TEKASIL NEUTRAL PROFI

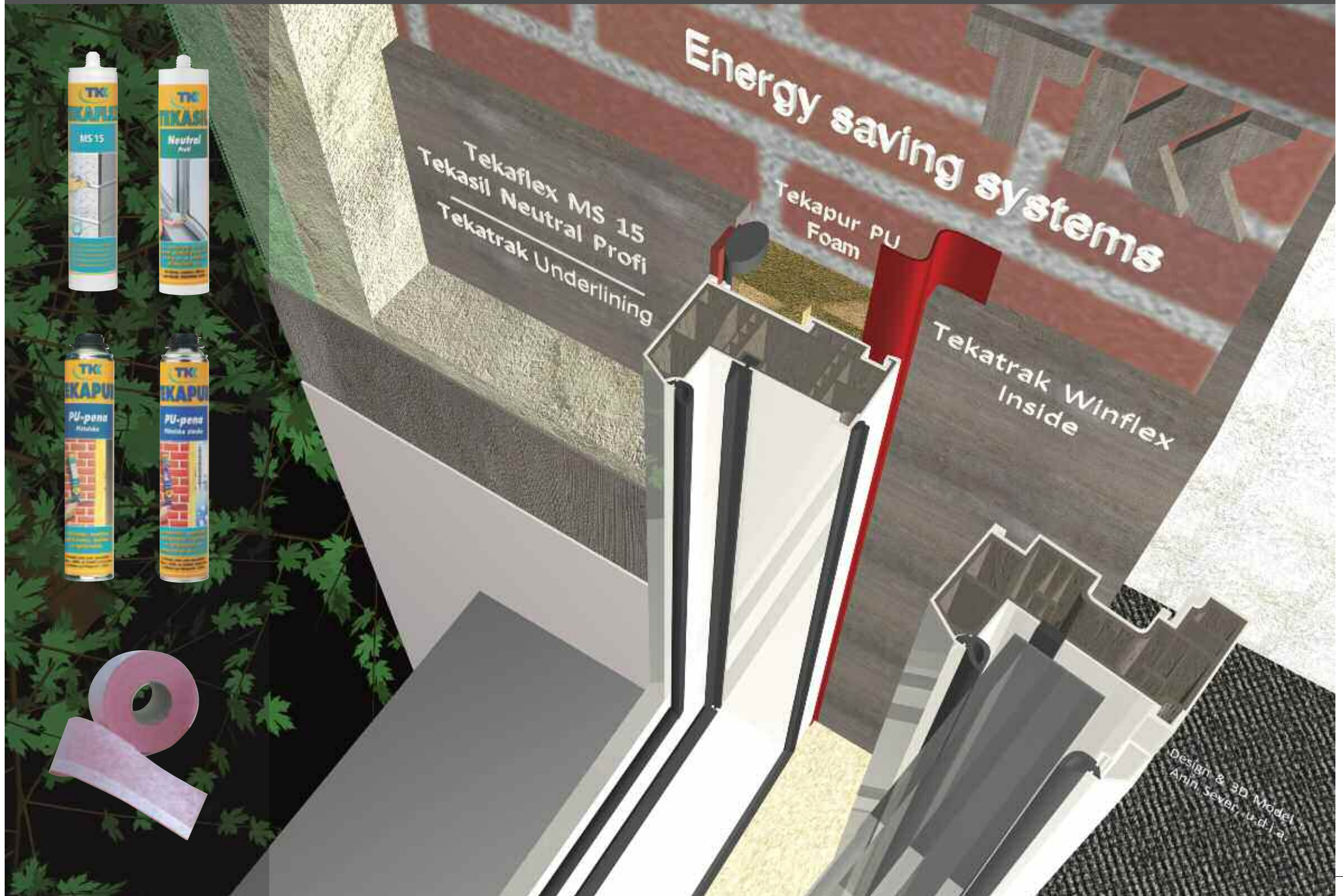
SEALING TAPE OUTSIDE – SEALING TAPE INSIDE



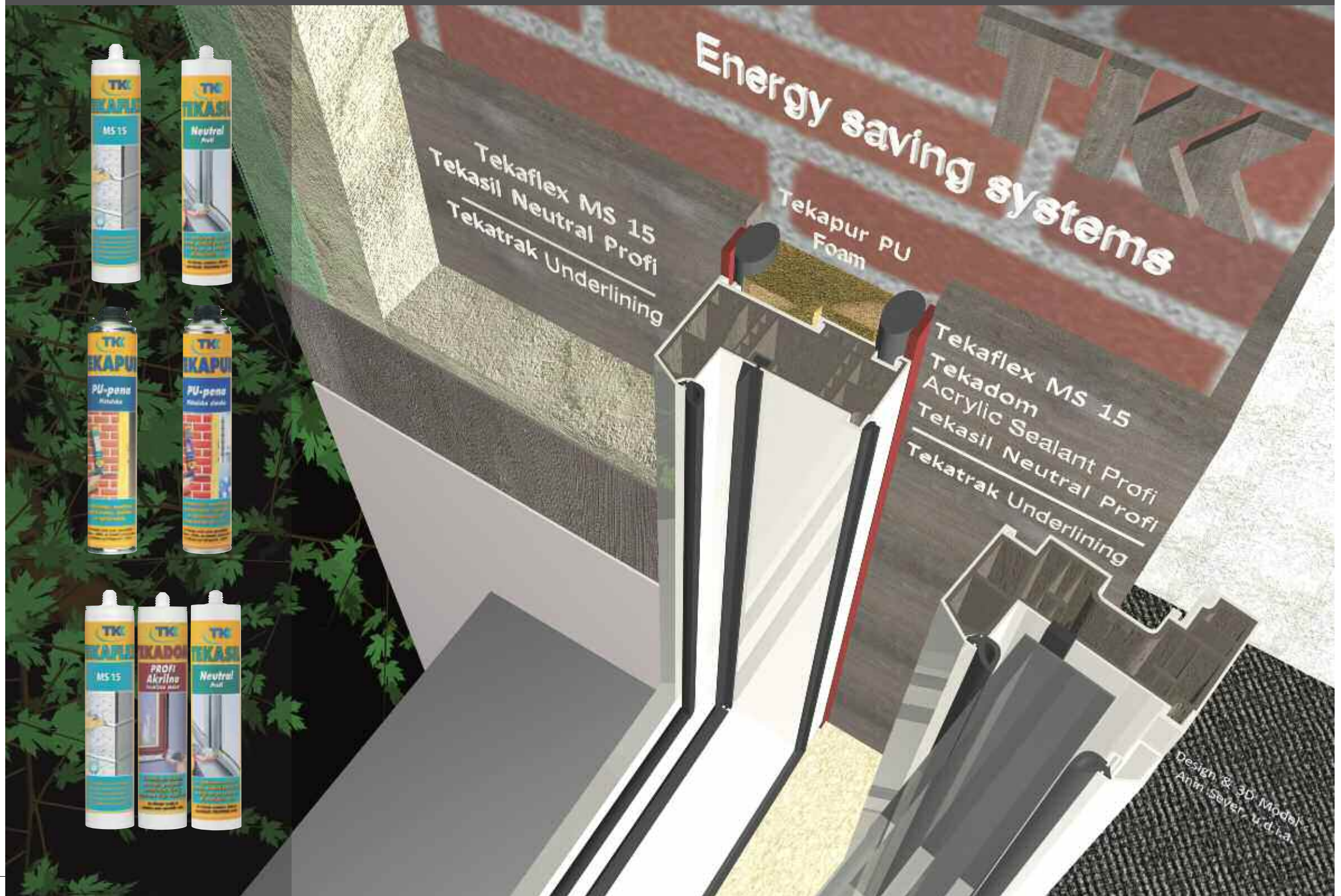
SEALING TAPE OUTSIDE – SEALANT INSIDE



SEALANT OUTSIDE – SEALING TAPE INSIDE



SEALANT OUTSIDE – SEALANT INSIDE



TKK SEALANTS

TEKAFLEX MS 15 – is an elastic sealant with movement accommodation of 25% and good adhesive properties to most of construction materials; it can also be painted.

TEKASIL NEUTRAL PROFI is an elastic sealant with movement accommodation of 25% and good adhesive properties to most of construction materials.

TEKADOM ACRYLIC SEALANT PROFI – is a plastic and elastic sealant with movement accommodation up to 15%. It is suitable for internal sealing and can be painted.

In general, for external sealing we use sealants with movement accommodation of 25%. When using sealants with different movement accommodation the recommended joint width has to be changed. Due to lesser stress on the inside, for the same width, a sealant with movement accommodation of 15% can be used. Sealants must ALWAYS be used in combination with a non-absorbent material - e.g. underlining material with closed cell film – **TEKATRAK UNDERLINING**.

TKK SEALING TAPES

TEKATRAK WINFLEX INSIDE (red = vapour tight, Sd = 55m) and **TEKATRAK WINFLEX OUTSIDE** (white = vapour permeable, Sd = 0.1m) – is a system for rapid and safe sealing of window joints: for vapour tightness on the inside and vapour permeability on the outside. Both tapes are elastic in every direction and are permanently resistant to any movement accommodation grade. Both sealing tapes can be plastered over and painted; therefore they can be very easily covered completely. A permanent and reliable joint can be achieved by applying a self-adhesive tape on the window frame side or by **TEKAFIKS BT** hand held adhesive, levelling out any rough surfaces, especially on the wall side.

TEKAFIKS BT hand held adhesive – for fixing **TEKATRAK** tapes onto porous materials. It can be used also on damp surfaces. The adhesive is odourless.

TEKAPUR PU FOAM

It completely fills the space between windows, doors and walls and ensures an excellent thermal and sound insulation. The following PU foams are available:

TEKAPUR PU FOAM – gun grade foam: for sealing, gluing, filling, insulating, installing and mounting. It enables a precise dosing and thus contributes to more economic use.

TEKAPUR PU FOAM – hand-held foam: for sealing, gluing, filling, insulating, installing and mounting.

TEKAPUR PU FOAM – gun grade winter foam: for sealing, gluing, filling, insulating, installing and mounting at temperatures to -10°C. It enables a precise dosing and thus contributes to more economic use.

TEKAPUR PU FOAM – hand-held winter foam: for sealing, gluing, filling, insulating, installing and mounting at temperatures to -10°C.

REQUIRED WIDTH OF JOINTS WITH REGARD TO THE MATERIAL THE WINDOW FRAME IS MADE OF

Material the window frame is made of	Length of window frame				Length (m)		
	Up to 1.5	Up to 2.5	Up to 3.5	Up to 4.5	Up to 2.5	Up to 3.5	Up to 4.5
	The minimum joint width for frontal mounting (mm)				The minimum joint width for frontal mounting (mm)		
PVC - white	10	15	20	25	10	10	15
PVC, PMMA – dark	15	20	25	30	10	15	20
WOOD, METAL – light	10	10	15	20	10	10	15
WOOD, METAL – dark	10	15	20	25	10	10	15
ALUMINIUM – light	10	10	15	20	10	10	15
ALUMINIUM – dark	10	15	20	25	10	10	15
WOOD	10	10	10	10	10	10	10

Window and door frame sealing has a great effect on the efficient use of energy for thermal heating. Incorrect mounting of windows and doors can thus, besides significant heat losses, lead to damages resulting from vapour infiltration through the joint and wall. Consequently, the tightness of joints has to be ensured with the correct materials.

TKK ENERGY SAVING SYSTEMS



TKK PROIZVODNJA KEMIČNIH IZDELKOV, Srpenica ob Soči d.d., Srpenica 1, 5224 Srpenica, Slovenija
tel. +386 5 38 41 300, fax +386 5 38 41 390
www.tkk.si, info@tkk.si

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