What are the most common mistakes in the application of ETICS

These are the most common mistakes made when installing thermal insulation:

- Lack of information concerning the insulation of specific facade elements such as architectural details and flashings. Missing specification of the type and number of mechanical fasteners required per 1 m^2. On the one hand, this provides the building contractor with more freedom of action, but on the other hand increases the scope of his responsibility. Inaccurate documentation may cause a higher expenditure than originally planned. Unfortunately, individual buildings are most frequently insulated without any documentation whatsoever!

- The contractors do not pay enough attention to assessing the geometry of walls: their smoothness and vertical deviation. Thermal insulation provides an opportunity for 'straightening out' a previously erected building by making use of system-based technology. This, however, requires the use of levelling mortars, plasters, a larger consumption of adhesive mortar and even deviations from the normally used materials, e.g. by increasing the thickness of the thermal insulation boards.

- Sometimes, the ETICS thermal insulation technology makes use of materials from different manufacturers. This type of non-system solution may result in serious consequences. Building Research Institutes grant a Technical Approval to material systems after having carried out appropriate verification tests. However, the interaction of materials originating from various systems has not been tested! When it becomes known that special materials have been used for a solution that are not included in the system, this may lead to the rejection of potential complaints and loss of warranty.

- Before fixing thermal insulation boards, the substrates should be cleaned in order to remove dust, algae etc. whereas highly absorbent substrates should be cleaned. This procedure, however, is not always observed. The use of high-pressure cleaners is not common yet.

- Mortars are sometimes applied by using only the 'spot' method. In addition to reducing the bonding strength, the unsupported board edges tend to bend, thus making it harder to properly perform the following work steps.

- Thermal insulation boards are sometimes pasted without strapping (especially on the building edges). In addition, the amount of reinforcing mesh applied to the facades is not sufficient.

- Failing to polish foamed polystyrene board offsets with high-grade sandpaper and to fill the board contacts/ edges with mortar result in shadows visible when side-lighting the wall and stains on the finishing coating.

- Mechanical fasteners are improperly fixed. A fastener head that is sunk too deeply causes damage to the thermal insulation boards whereas a fastener that is set too shallow is not strong enough to hold the board in place. The resulting protrusion becomes visible and degrades the reinforced layer.

- Failure to fill the casing gaps and sheet metal fittings with an acrylic sealant to prevent rainwater penetration underneath the thermal insulation boards.

- Failure to paste extra diagonal mesh patches on the corners of openings (e.g. windows) may result in diagonal cracks in these spots. The lack of additional mesh within a distance of up to 2 m from ground level is conducive to damage caused by accidental mechanical impacts.

- Inadequate thickness of the reinforced layer, or even worse, 'dry-fixed' glass fibre mesh – that means without a previously applied mortar bed – weakens the protection properties of the insulation material and adversely affects the durability of the rendering layer.

- Inadequate number of plaster applicators when producing facade layers. The work should be organized in such a way that it can be simultaneously done on a minimum of 2 or 3 scaffold levels. This is the only way to effectively hide plaster joints. Prior to starting any plastering work, spots or areas should be indicated where plaster joints will not be too disturbing (by disrupting the uniform appearance of the facade), e.g. within the outlet of pipelines.

- When failing to provide protective scaffold shields, the plaster may be either washed off or discoloured by rain. The shields are also required in sunny conditions as they reduce the drying speed of thin-layer materials and provide good protection for fresh plaster against dusty winds.