

## High Energy Efficiency Combined with Prestigious Appearance: The Trocal 88+ Window Profile System in an Architect-Designed House

*In the light of increasing energy costs, windows and French doors represent an investment for the future and should offer maximum thermal insulation properties. Especially on the private homes sector, they have to comply with the individual requirements of building owners who care for aesthetics. The PVC-u window profile system Trocal 88+ combined with the aluminium shell AluClip – both profine products – can satisfy all these demands as is impressively demonstrated by a new construction of a fashionable design house near Saarbrücken, Germany.*

"Trocal 88+ together with AluClip, offered the ideal solution for this object and for the building owner as this combination has an excellent material quality and a high degree of design freedom" states architect Marcel Giebel. The two-storey building, located on the slope, is directed to the South, where extensive window surfaces allow a view to the spacious landscape and, at the same time, make optimum energetic use of the incoming sunlight.

Besides the triple glazing with argon filling ( $U_g$  value =  $0.6 \text{ W}/(\text{m}^2\text{K})$ ), the Trocal window profiles with thermo centre gasket system ( $U_w$  value =  $1.0 \text{ W}/(\text{m}^2\text{K})$ ) prevent unnecessary heat losses by their six-chambers technology. Additional protection is provided for by the façade with a heat insulation composite system cladding which is, on its Northern face, only interrupted by the residential door and a low rectangular window.

All in all, the building is equipped with 16 window elements which were manufactured by Schmidt-Fenster GmbH located in Visbek, Germany, from the profile system Trocal 88+ AluClip in different dimensions, shapes and opening types. The position of the detached house, open to the valley, makes highest demands on the elements' resistance to wind and weathering. Here, the state-of-the-art Trocal centre gasket technology guarantees for outstanding protection against driving rain and for wind tightness.

The excellent heat insulation values are reached with modern materials and sophisticated profile designs with a constructional depth of only 88 millimetres. Thus, slim sight surfaces with superior elegance can be attained. Moreover, the system Trocal 88+ AluClip combines the advantages of PVC and aluminium: Whilst the white plastic surface of the profiles on the room side guarantees optimum heat insulation properties, high function and low maintenance requirements, the aluminium shell on the outside offers nearly unlimited options for individual design.

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The classic aluminium window aspect with butt joint corners can be varied with the large scale of RAL colours: In this special case of the single-family house in South Western Germany, the aluminium shells in the shade "dark dove-grey with metallic effect" integrate in the white and grey colouring of the façade. So do the colour matching alu window sills and the gaskets: grey outside, black inside.

The two-parts profine patio door called PremiDoor with a width of about 7 metres is adapted to the appearance by a AluClip outside cladding in the same colour shade. The door consists of a lift-and-slide sash and a fixed part with Georgian bars. The characteristic feature of the premium product manufactured by Ventana Deutschland GmbH and excelling by its slim layout is the appreciated quiet and easy operation of the sliding elements.

The 70 mm profiles ( $U_w$  value =  $1.9 \text{ W}/(\text{m}^2\text{K})$ ) combined with thermal insulating glass ( $U_g$  value =  $1.1 \text{ W}/(\text{m}^2\text{K})$ ) and a thermal bipartite threshold achieve best values with regard to thermal and acoustic insulation as well as stability and tightness. Different construction types and extraordinary dimensions with sash sizes of up to three metres width and 2.5 metres height offer a large variety of options for the use of PremiDoor.

The greenline PVC window profiles of profine Group are stabilized exclusively on a calcium/zinc basis without using lead and, thus, additionally protect the environment. Compared with traditional systems, about ten kilogramme of the heavy metal have been avoided only with this rather small object.

"Trocal profile systems are a sustainable investment as they have high thermal insulating properties, are extremely resistant to weathering and nearly maintenance-free. With the multiple design options they are first choice for house-builders with high aesthetic demands", emphasizes architect M. Giebel.

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The two-storey building on the slope is directed to the South where extensive window surfaces make optimum energetic use of incoming sunlight. The Trocal window profiles with thermo centre gasket system prevent unnecessary heat losses by their six-chambers technology.



PremiDoor: The two-parts profine patio door with a width of about 7 metres is adapted to the overall appearance by a AluClip outside cladding in the same colour shade as the window frames.

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**About profine:**

profine GmbH - International Profile Group - is the world-wide leading manufacturer of plastic profiles for windows and doors as well as a notable supplier of shutter solutions and PVC sheets. The company was established in 2003, when HT TROPLAST consolidated its profile business activities (KBE, KÖMMERLING, TROCAL) under one roof.

profine has a total of 3,350 employees at 28 locations in 21 countries. Around 2,000 of these employees work in Germany.

The production sites are located in Germany, France, Italy, Spain, Russia, Ukraine, the United States and China. The company headquarters is in Troisdorf (North Rhine-Westphalia, Germany).

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