

Pflüger TOB - Sustainable base profiles for windows and doors

Building & Construction > Window profile

Target

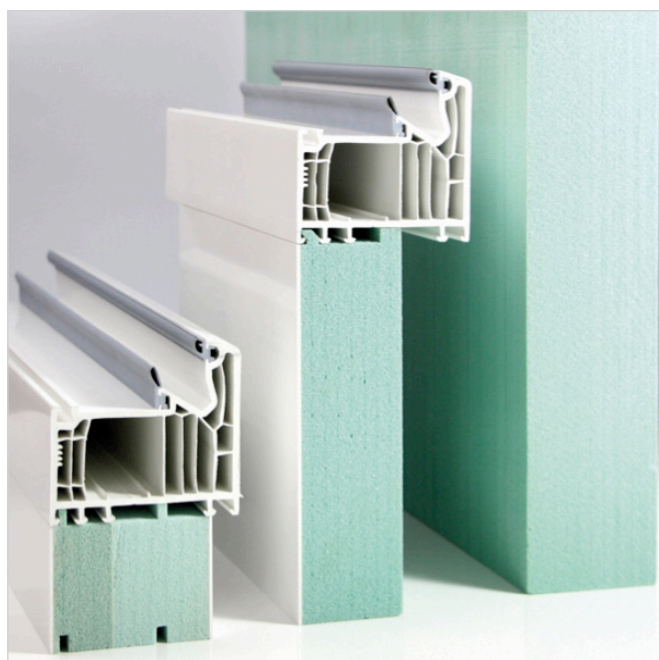
Sustainable, thermally optimised and durable base junctions for windows and doors

Solution

Kerdyn™ Green FR window and door base junction profiles by Pflüger TOB. Their modular systems provide flexibility and precision for all types of installations

Benefits

Kerdyn™ Green FR is made from up to 100% recycled PET, sourced from recycled plastic



Pflüger base profile cross-sections with Kerdyne™ Green

Windows, doors, and the surrounding frames and profiles are instrumental in the energy efficiency of buildings.

When considering which material to use for bridging the spaces between the building construction and door and window frames, the list of material properties is considerable: strength, durability, insulating capability and fire retardancy to name just a few. One manufacturer of these parts, Pflüger TOB, has gone one step further and added sustainability to this list.

The need for a sustainable material led Pflüger TOB to select Gurit Kerdyne™ Green FR as the material of choice for their window and door base junctions. Kerdyne™ Green FR is a structural core material, made from up to 100% recycled PET, sourced from used plastic bottles. As well as having high sustainability credentials, other benefits of Gurit Kerdyne™ Green FR include:

- High compression strength
- Excellent screw retention
- Able to withstand high temperatures
- Water resistant
- Recyclable
- Creates outstanding stability and sealing
- Good insulation properties

In 2020, Pflüger's use of recycled materials has eliminated the waste of 10 million bottles

Using the latest production equipment and concepts, Pflüger TOB convert sheets of Kerdyn™ Green FR into a number of profiles for thermal separation, construction, sealing, and insulation applications:

Window Applications for Kerdyn™ Green FR

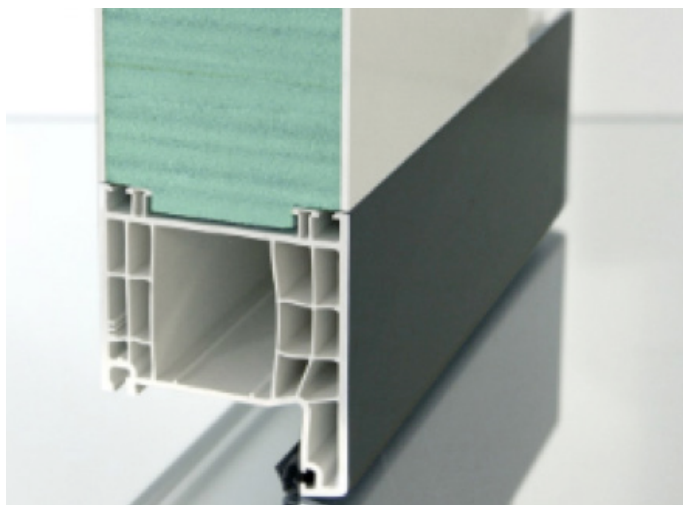
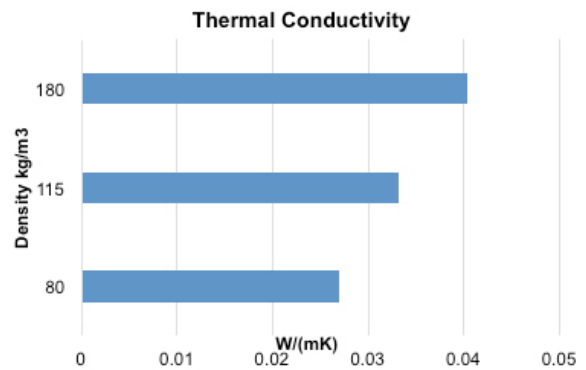
Using Kerdyn™ Green FR for window base junctions enables significant improvements in the installation of the window, due to the higher screw retention values. Particularly with windows made of wood, using a base made from Kerdyn™ Green FR can reduce the likelihood of deterioration and rotting in the junction area.

Improved thermal properties

Significant improvements can be seen in thermal properties when using Kerdyn™ Green FR in window bases. In the graph (right), Kerdyn™ Green thermal conductivity value is reported at each density. The thermal conductivity of Kerdyn™ Green reaches 0.027 at 80kg/m³ density.



Above: Examples of a window base junction profiles made from Kerdyn™ Green FR. **Below:** Thermal Conductivity of Kerdyn™ Green FR across density range.



Window frame extensions

The high strength, water resistance and good mechanical properties of Kerdyn™ Green FR make it an ideal material choice for window frame extensions, such as mountings for roller shades or blinds. It is compatible with a wide range of adhesives, making it easy to produce customised window frame extensions, with improved longevity when compared to clipped-on extensions.

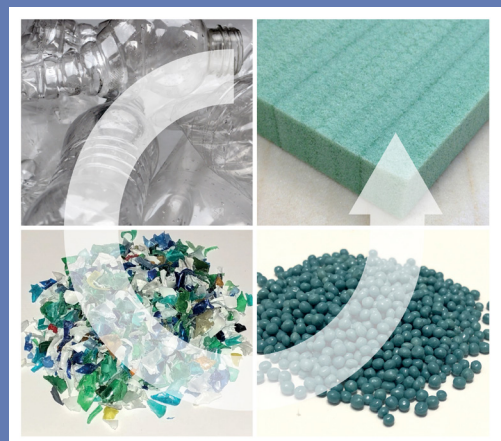
Insulation and Sealing Wedges

Another ideal application for Kerdyn™ Green FR is for insulating and sealing wedges, bridging the gap between the external window sill and the building construction. Using Kerdyn™ Green FR in this area can considerably reduce condensation and water ingress.

How is Kerdyn™ Green FR made?

- Used plastic bottles are collected and crushed into flakes
- Gurit's in house granulator converts the flakes into pellets
- PET pellets are extruded into blocks of Kerdyn™ Green FR
- Blocks can be cut into sheets and various shapes/ profiles
- Any waste Kerdyn™ Green FR recovered from Gurit's production or customers can be recycled into new blocks

Right: Kerdyn™ Green FR manufacture process from bottle to sheet

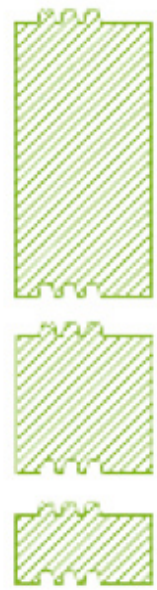
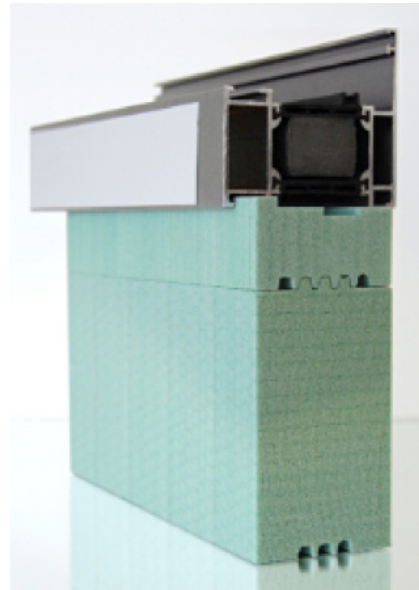
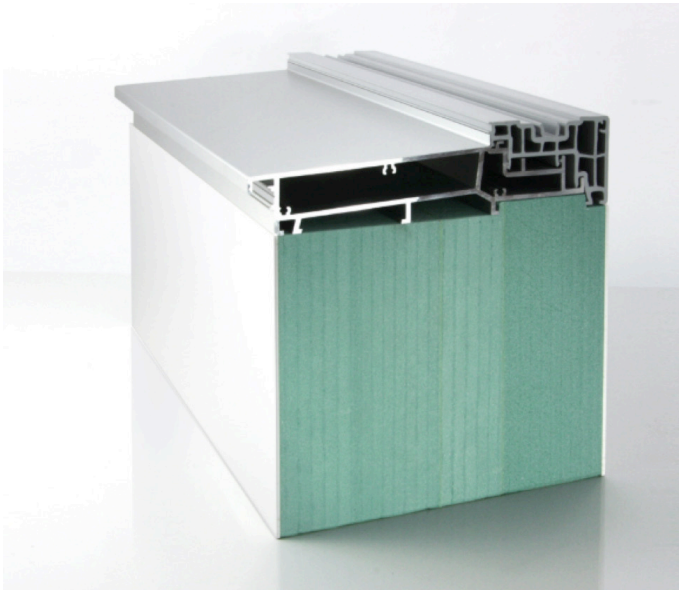


Kerdyn™ Green FR for door sub-structures

The easy machining and shaping of the Gurit Kerdyn™ Green FR makes it well suited to the application of door sub-structures, creating a strong, water-resistant and insulating base for doors and thresholds. The modular construction possible through using the TOB module means it is easy to level and mount the substructure before fitting a sliding door. The result is a system that provides a quiet and even motion of sliding door and a highly insulated substructure.

Flexibility and precision possible through TOB module

Custom heights for door sub-structures can be achieved by combining several standard-height Kerdyn™ Green FR profiles. The individual modules are grooved, then glued and screwed together, giving a monolithic system without joints. Kerdyn™ Green FR is available in a range of densities from 80–180kg/m³, each with different mechanical properties. In addition to tailoring the height of the TOB modules, it is also possible to combine densities. This results in bespoke modules with mechanical properties adapted to the construction, ensuring the highest properties in areas of high stress.



Custom heights achieved through TOB modular system



“Pflüger have been working in partnership with Gurit and using Kerdyn™ Green FR for 6 years. The easy machining and optimal thermal properties combined with water resistance makes it a perfect fit in our window solutions.”

Ulli Pflüger, Managing Director Pflüger TOB GmbH
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