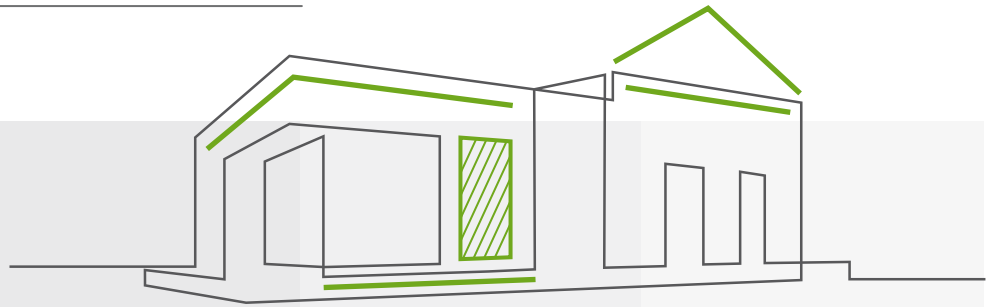


## THE GREEN INSULATION **PET**therm 50

*The recycled and recyclable insulation material  
with versatile application possibilities*



Made from  
100% recycled  
PET bottles

According to a patented  
manufacturing process

Closed cell  
structure

The choice of insulation material **PET**therm 50 helps to significantly improve the environmental performance of your building project while meeting sustainability criteria.

# THE GREEN INSULATION PETtherm 50

The green insulation material that combines high strength with good insulating properties. It supports the creation of buildings with higher energy efficiency and reduced environmental impact over their entire lifespan.



$\lambda$ -Value  
0,030

## The advantages *at a glance*

Made from 100% PET recyclate

Lower CO<sub>2</sub> - Footprint than comparable insulation materials

Insulation boards and their processing residues are 100% recyclable

Reliable insulation performance over the entire service life

No loss of quality due to moisture, rodents and insects

Closed-cell structure prevents moisture penetration

Dimensionally stable and high compressive

Panel thicknesses up to 200 mm and flexible dimensions facilitate assembly and ensure a wide range of application options

Excellent compatibility with organic and mineral adhesives as well as with plasters

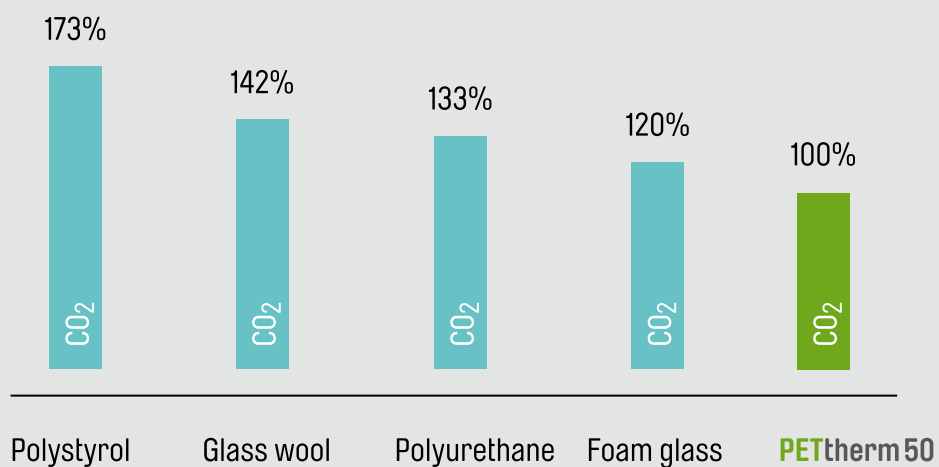
Solvent resistant

Supports the achievement of sustainability targets from environmental and funding guidelines

## Up to 40% lower CO<sub>2</sub> Footprint

(than comparable insulation materials)

The use of 100% recycled PET plastic as a raw material base for **PETtherm 50** leads to a significantly lower emission level than with other insulation materials:



CO<sub>2</sub>-Emissions from **PETtherm 50**-products compared to competitive materials.

The emission level of **PETtherm 50** in the life cycle analysis corresponds to 100% in the representation (cradle-to-gate approach).



## A sustainable cycle

**PETtherm 50** is the first solution for the insulation market whose raw materials are made from 100% recyclable PET.

**PETtherm 50** contributes to a sensible use of plastic waste and helps to save energy and reduce CO<sub>2</sub> emissions. At the end of the life cycle, the insulation material can be returned to the material cycle without any loss of quality.

- 1 Collection of used PET bottles
- 2 Sorting and crushing into flakes
- 3 Granulation process
- 4 Production of the **PETtherm 50** foam sheets
- 5 Disposable plastic bottles become a sustainable building material
- 6 After its decades of use, can **PETtherm 50** be fully recycled again



**Sustainable in production as well as in use.**

Here: High compressive strength enables extensive superimposed loads when used as flat roof insulation

## Technical data

Density	EN 1602	kg/m <sup>3</sup>	48 +/- 10
Compressive Stress	EN 826	kPa	>165
Compressive Stress after freeze-thaw (wet) <sup>(1)</sup>	EN 12091 EN 826	kPa	>165
Compressive Stress after freeze-thaw (dry) <sup>(1)</sup>	EN 12091 EN 826	kPa	>165
Compressive Creep (122 days, 40 kPa) <sup>(1)</sup>	EN 13164	%	≤1
Freeze-Thaw Resistance: Compressive Stress (wet/dry)	EN 12091	%	3.8
Tensile Strength perpendicular to the faces <sup>(1)</sup>	EN 1607	kPa	50 mm: 400 100 mm: 250
Tensile Strength perpendicular to the faces after freeze-thaw <sup>(1)</sup>	EN 12091 EN 1607	kPa	280
Bending Strength	EN 12089 method B	kPa	50 mm: >500 100-200 mm: <400
Deformation at 40-kPa load and 70°C for 168 hours	EN 1605	%	≤5
Water Vapour Transmission	EN 12086	μ	>1000
Water Absorption 24h partial immersion	EN 1609 method A	kg/m <sup>2</sup>	≤0.2
Water Absorption long-term, total immersion	EN 12087 method 2A	vol%	≤3
Coefficient of Linear Thermal Expansion	ASTM E228-17	°C <sup>-1</sup>	50·10 <sup>-6</sup>
Dimensional Stability at 70°C and 90% RH	EN 1604	%	<5
Service Temperature		°C	-40 to 150°C
Reaction to fire	EN 13501-1	Class	E

<sup>(1)</sup> Preliminary values based on 50 mm extrusion thickness.

### BOARD DIMENSIONS at room temperature

**Length** 600 mm  
2448 mm

**Width** 1000 mm

**Thickness** 40-200 mm

Other dimensions  
on request

## THERMAL CONDUCTIVITY & RESISTANCE

**MEASURED** according to EN 12667:

$\lambda = W/m \cdot K$	50-200 mm	$R = (m^2 \cdot K)/W$	50 mm	100 mm	150 mm	200 mm
$\lambda$ at 10 °C	0.030	R at 10 °C	1.67	3.33	5.0	6.67
$\lambda$ at 23 °C	0.029	R at 23 °C	1.72	3.45	5.17	6.9
$\lambda$ at 40 °C	0.028	R at 40 °C	1.78	3.57	5.36	7.14

**DECLARED** according to EN 13164 and EN 12667:

$\lambda_D = W/m \cdot K$	50-200 mm	$R_D = (m^2 \cdot K)/W$	50 mm	100 mm	150 mm	200 mm
$\lambda_D$ at 10 °C	0.035	$R_D$ at 10 °C	1.40 <sup>(3)</sup>	2.85 <sup>(3)</sup>	4.25 <sup>(3)</sup>	5.70 <sup>(3)</sup>










<sup>(3)</sup> Rounded downwards to the nearest of 0.05 (m<sup>2</sup>•K)/W.

## Application

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**PETtherm 50** is designed for structural insulation of building envelopes, roofs, floors and interior walls. **PETtherm 50** can be used stand-alone or as part of a prefabricated system in new build and renovation projects.

**PETtherm 50** is approved for the following areas of application according to DIN 4108-10. The rated value of the thermal conductivity is set at 0.036 W/m\*K due to a current lack of standardization of the insulation material.

	<b>DAD</b> External insulation of roof or ceiling Protected from the weather Insulation under covers		<b>WZ</b> Insulation of double skin walls, core insulation
	<b>DAA</b> External insulation of roof or ceiling Protected from the weather Insulation under waterproofing		<b>WH</b> Insulation of wooden frames, wooden panels construction and comparable compartments
	<b>DEO</b> Interior insulation of the ceiling or floor plate (upper side) under screed without soundproofing requirements		<b>DZ</b> Between rafter insulation, double-shell Roof, not walkable but accessible top floors
	<b>WAA</b> External insulation of the wall behind sealing		<b>DI</b> Interior insulation of the ceiling (underside) or of the roof, insulation under the rafters/ supporting structure, suspended ceiling, etc.
	<b>WAB</b> External insulation of the wall behind clothing	<b>+ Other approvals in preparation</b>	

**Other areas of application:** Door panels | Profile inserts | Reveal panels

We are eager to hear your ideas.

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**With PETtherm 50 we offer the world's first insulation material based on 100% recycled PET with CE certification and environmental product declaration (EPD).**

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# Flat roof insulation



## Pflüger TOB as partner for your sustainable building project:

### 1 - Consulting

From the first considerations for a more sustainable construction of your buildings, to the basics of building fundamentals to the detailed planning of any kind, you will receive extensive support from us.



When selecting suitable sealing systems to our insulation material we will be happy to advise you and recommend experienced installers for these products.

### 2 - Taper plan creation

We create comprehensive taper plans taking into account the required U-values and the structural conditions.



### 3 - Assembling



#### Tapered insulation

Everything from a single source: You will receive the complete kit for insulating your roof or other parts of the building, ready-made and delivered ready for installation.



#### Full or trapezoidal wedges and other project-related components

We manufacture special components to order and at reasonable prices to suit your building project.

### 4 - Logistics

We deliver the insulation material you need to your construction site on the exact day - gladly also in several construction phases.

## 5 - System components Flat roof

### **TOBfix roof 01** Mounting adhesive

**TOBfix roof 01** offers easy processing combined with fast initial adhesion and very good wind-suction values.



### **ATKtherm** Attic insulation and sealing

With **ATKtherm**, you form the attic screed with a screwable, pressure- and water-resistant insulation material. It can also be designed as a wedge with any slant.



## Manufacturing possibilities

In addition to cutting, profiling, drilling and milling, we offer further interesting processing options.

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Sandwich production

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2 D- Block cutting

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Thermal welding

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Plaster application

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We invest continuously in order to also be able to implement your ideas

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## **PETtherm**

**THE GREEN INSULATION** A product of Pflüger TOB GmbH

We develop and produce sustainable systems for thermal separation, construction, sealing and insulation. Our complete programme includes the following products:

**basistherm**  
Window Base Junction Profile

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**UDPtherm**  
Substructure Insulating Profile

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**LPtherm**  
Reveal Panel

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**vowatherm**  
Front Wall Installation System

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**FDKtherm**  
Windowsill Insulating and Sealing Wedge

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As of april 2023