FEEL
GOOD
INSIDE

RECTICEL insulation

FLAT ROOF

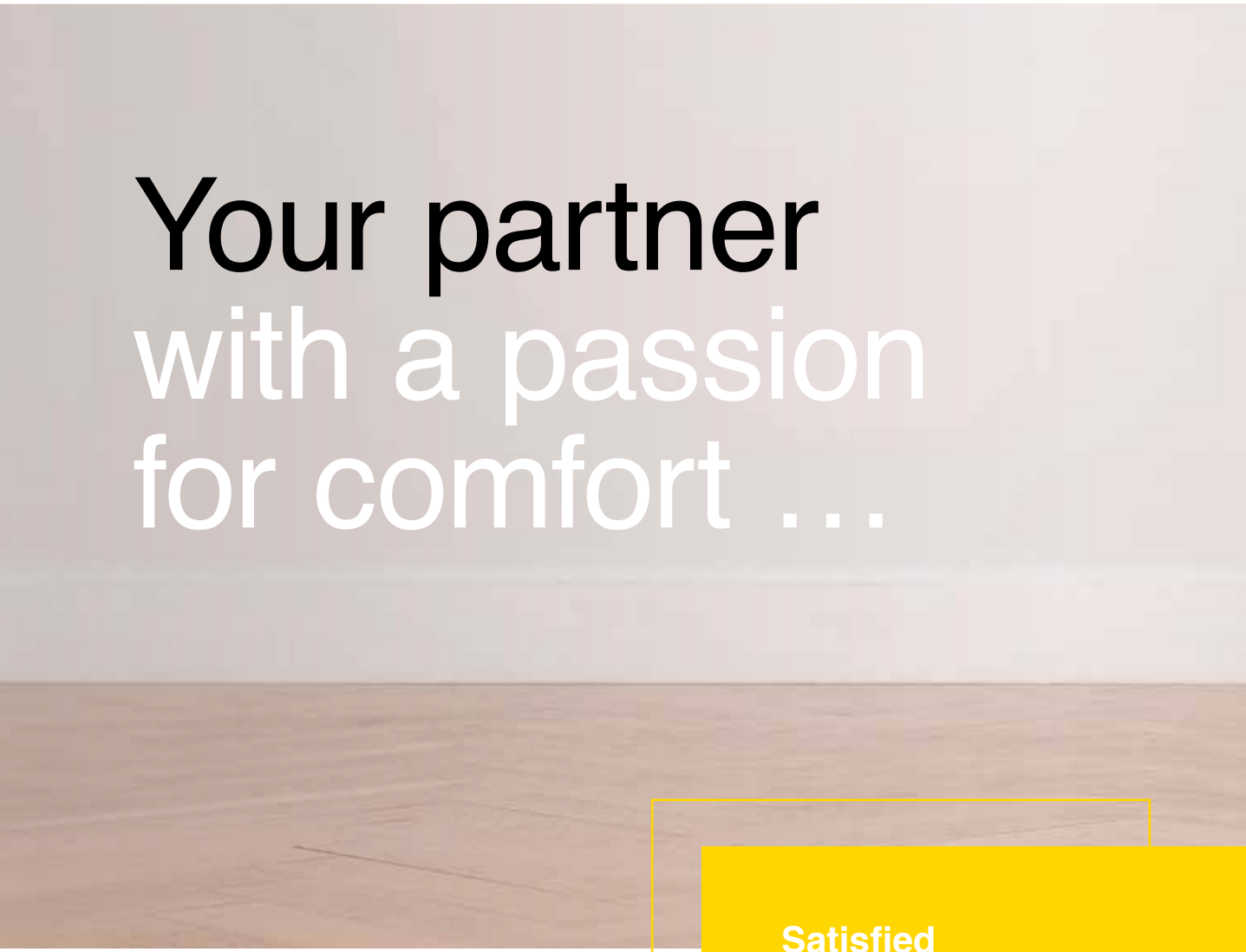

# The insulation guide
## for flat roofs

We want to create a “feel good inside” experience for ourselves and for future generations through excellent solutions and services.

That is what we go for.

FEEL
GOOD
INSIDE

RECTICEL insulation



# Your partner with a passion for comfort …

## What is our expertise?

- Recticel Insulation is the benchmark for using PIR.
- We have 60 years of experience in the construction sector, and we deliver on this promise every day.
- Thanks to our 7 ultra-modern production plants in Europe, we are able to quickly and flexibly respond to our clients' needs.

## Satisfied professionals

Whether you're a builder, contractor, architect or craftsman, you can count on Recticel Insulation. We offer the maximum day-to-day comfort with a reliable partnership, outstanding service provision and unrivalled expertise.

## Innovative solutions, every day

More specifically, we offer high-performance thermal and acoustic insulation solutions for both residential and non-residential buildings. As part of this, we do everything we can to meet the demand for energy efficient buildings.

# … and a passion for sustainability

### Commitment on every level

Sustainability is also deeply embedded in the Group's DNA. It's a distinct part of our company's core values. Recticel Insulation adheres to sustainable development by showing respect for its employees, its partners, the environment and legislation.

### PIR: the sustainable insulation material

Efficient insulation means that less energy is needed for heating and cooling. As a result, $CO_2$ emissions are reduced, which means that our insulation products contribute significantly to the fight against global warming. The PIR insulation boards have a lifespan exceeding 25 years.

### Our new products: driven by sustainable innovation

Sustainable innovation is one of the primary drivers of all Recticel's research and development efforts. This has led to the development of 'low lambda' insulation materials with a lambda value reduced from 0.022 to 0.019 for Xentro® and vacuum panels (0.006 W/mK for VIP product as such) to achieve a higher insulation performance.

Sustainability is a distinct part of our strategy and company values.

### Minimising our $CO_2$ footprint

We estimate that the $CO_2$ emissions prevented by our insulation solutions in 2017 totalled over 30 times our carbon impact throughout the value chain.

### Waste management and recycling

We seek out new ways to avoid waste during the production process, as well as possibilities to reuse or recycle production waste and products that have reached the End-Of-Life (EOL) phase.

# Keeping it light:

## how PIR is transforming insulation


- Today's insulation materials need to do much more than just help to keep building interiors warm or cool. The growing urgency of the fight against climate change means that emissions must be tackled not just through the energy efficiency of buildings but also by reducing the carbon footprint of the construction sector.
  To stay competitive, we also need materials that will help streamline processes and reduce costs.
  And with ever more discerning customers to please, a reliable long-term performance and guaranteed quality are essential.

- Roofing contractors are increasingly finding the solutions they need in Recticel Insulation's PIR (rigid foam) solutions. The high thermal performance of PIR means that only a thin layer of insulating material is needed, providing advantages when it comes to the roof design, material transport and installation. PIR boards also offer superior on site performance and durability, guaranteeing long-term customer satisfaction.

### Easier handling and installation

Not only does the slimness of the insulating layer affect transport volumes: it also makes PIR insulation boards extremely light (5 to 8 times lighter than other traditional insulation materials such as mineral wool). While enhancing its role in reducing transport emissions, this quality also makes them very easy to handle and install. Installation goes by result much faster and is cheaper. Thinner boards require shorter screws, creating more savings. Furthermore, as the boards contain no fibres, they do not cause irritation of the eyes, skin or lungs during installation.

## The insulation of the future: lightweight, convenient and pleasant to work with.

- By using lightweight insulation boards, you reduce the weight resting on the roof structure. This means that you can allow for a greater external load due to heavy snow or the addition of solar panels, for example. In addition to this, by decreasing the overall weight of the roof, you also save on construction costs.

# The insulation of the future

# Low lambda value, less thickness

The lower the lambda value (thermal conductivity) of the insulation, the thinner the layer needed to achieve the desired U-value. Compared to other insulation materials, PIR boards have a very low lambda value (typically between 0.022 and 0.026 W/mK), greatly reducing the thickness of material required. For example, a typical U-value target of 0.09 W/m²K can be achieved with layers as thin as 240 mm PIR (Eurothane Silver E). The slimness makes PIR boards extremely versatile to work with.

The volume of material to be transported is reduced by up to a third, significantly cutting $CO_2$ emissions caused by transport. This reduces the environmental impact of the project and offers considerable opportunities for the building sector to shrink its carbon footprint.

- Their thin profile makes PIR boards more versatile and compatible with existing roof structures.

## Strong, durable and future proof

High compressive strength means that PIR boards can be walked on, making installation and maintenance easier. They are also suitable for use if a green roof or solar panels is installed.

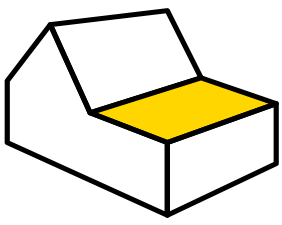
- PIR boards can be walked on, allowing installers to move around more easily.

## Insulating with PIR, a conscious product selection

Recticel Insulation's products Eurothane® Silver E, Eurothane® Bi-4, Eurothane® Bi-4 A and Powerdeck® F are assessed and registered by BYGGVARUBEDÖMNINGEN and have reached the accepted level. These products are also registered in SundaHus Material Data and BASTA (with exception of Eurothane® Bi-4 A not in BASTA).

BASTA BYGGVARUBEDÖMNINGEN SundaHus


RECTICEL

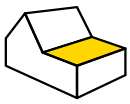


# Flat roof

# Eurothane® Silver E

Thermal insulation board for flat roofs compatible with mechanically fixed single-layer roofing films.

**Flat roof**



**Lambda ($\lambda_D$)**
0,022
W/mK


## Characteristics

- Lightweight
- Shiplap edge finishing
- Insulation board to be used in mechanically fixed bituminous and single-ply waterproofing systems

BASTA BYGGVARU BEDÖMNINGEN SundaHus

## Advantages

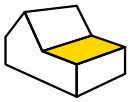
- High compressive strength (≥150 kPa) guarantees limited deformation of the surface..
- To be used in mechanically fixed bituminous and single-ply waterproofing systems.
- Easy handling and installation.
- Ideal for use in commercial, utility, industrial and residential buildings.

| | 1200 x 2400 mm |
|---|---|
| **Insulation thickness** (mm) | **$R_D$-value** ($m^2K/W$) | **#panels/pack** |
| 50 | 2.25 | 21 |
| 60 | 2.70 | 17 |
| 70 | 3.15 | 15 |
| 80 | 3.60 | 13 |
| 90 | 4.05 | 11 |
| 100 | 4.50 | 10 |
| 110 | 5.00 | 9 |
| 120 | 5.45 | 9 |
| 130 | 5.90 | 8 |
| 140 | 6.35 | 7 |
| 150 | 6.80 | 7 |
| 160 | 7.25 | 6 |
| 170 | 7.70 | 6 |
| 180 | 8.15 | 6 |
| 190 | 8.60 | 5 |
| 200 | 9.05 | 5 |

# Eurothane® Silver A

Tapered thermal insulation board for flat roofs compatible with mechanically fixed single-layer roofing films.

**Flat roof**



**Lambda ($\lambda_D$)**
0,022
W/mK


## Characteristics

- Tapered
- Lightweight
- Straight edge finishing
- Insulation board to be used in mechanically fixed bituminous and single-ply waterproofing systems

## Advantages

- Solution to drain away the water from the roof incorporating the slope in the insulation layer (without needing a screed).
- High compressive strength guarantees limited deformation of the surface.
- Ideal for a range of applications in commercial, utility, industrial and residential buildings.
- Compatibility with numerous waterproofing systems.

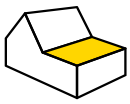
| | 1200 x 1200 mm | |
|---|---|---|
| **Insulation thicknes** (mm) | **Slope 1/60** | **#panels/pack** |
| 20 – 40 | 60A | 12 |
| 40 – 60 | 60B | 10 |
| 60 – 80 | 60C | 6 |
| 80 – 100 | 60D | 4 |
| 100 – 120 | 60E | 4 |
| **Insulation thicknes** (mm) | **Slope 1/80** | **#panels/pack** |
| 30 – 45 | 80A | 12 |
| 45 – 60 | 80B | 8 |
| 60 – 75 | 80C | 6 |
| 75 – 90 | 80D | 6 |
| 90 – 105 | 80E | 4 |
| 105 – 120 | 80F | 4 |

| | 1200 x 1200 mm | |
|---|---|---|
| **Insulation thicknes** (mm) | **Slope 1/120** | **#panels/pack** |
| 30 – 40 | 120A | 14 |
| 40 – 50 | 120B | 10 |
| 50 – 60 | 120C | 8 |
| 60 – 70 | 120D | 6 |
| 70 – 80 | 120E | 6 |
| 80 – 90 | 120F | 4 |
| 90 – 100 | 120G | 4 |
| 100 – 110 | 120H | 4 |
| 110 – 120 | 120I | 4 |

# Eurothane® Bi-4

Thermal insulation board compatible with bituminous waterproofing membrane.

**Flat roof**



**Lambda ($\lambda_D$)**
0,026
W/mK

## Characteristics

- Lightweight
- Bituminous glass fleece facing
- Adhered, partially torched, ballasted or mechanically fixed roofing systems

## Advantages

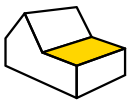
- Quick and easy installation.
- High compressive strength (≥150 kPa) guarantees limited deformation of the surface.
- Compatible with bituminous waterproofing membranes.

| | | 600 x 1200 mm |
|---|---|---|
| **Insulation thickness (mm)** | **$R_D$-value** ($m^2K/W$) | **#panels/pack** |
| 30 | 1.15 | 16 |
| 40 | 1.50 | 12 |
| 50 | 1.90 | 10 |
| 60 | 2.30 | 8 |
| 70 | 2.65 | 7 |
| 80 | 3.05 | 6 |
| 91 | 3.50 | 5 |
| 100 | 3.80 | 5 |
| 120 | 4.60 | 4 |
| 140 | 5.35 | 3 |
| 160 | 6.15 | 2 |

# Eurothane® Bi-4A

Tapered thermal insulation board compatible with bituminous waterproofing membrane.

**Flat roof**



**Lambda ($\lambda_D$)**
0,026
W/mK

## Characteristics

- Tapered
- Lightweight
- Bituminous glass fleece facing
- Adhered, partially torched, ballasted or mechanically fixed roofing systems

BYGGVARU BEDÖMNINGEN SundaHus

## Advantages

- Custom-made solution to drain away the water from the roof without screed.
- Quick and easy installation.
- High compressive strength (≥150 kPa) guarantees limited deformation of the surface.
- Compatible with bituminous waterproofing membranes.

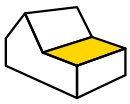
| | | 600 x 1200 mm |
|---|---|---|
| **Insulation thickness** (mm) | **Slope 1/60** | **#panels/pack** |
| 20 – 40 | 60A | 12 |
| 40 – 60 | 60B | 8 |
| 60 – 80 | 60C | 6 |
| 80 – 100 | 60D | 4 |

| **Insulation thickness** (mm) | **Slope 1/80** | **#panels/pack** |
|---|---|---|
| 30 – 45 | 80A | 10 |
| 45 – 60 | 80B | 8 |
| 60 – 75 | 80C | 6 |
| 75 – 90 | 80D | 4 |
| 90 – 105 | 80E | 4 |

# Powerdeck® F

Thermal insulation board for adhered systems.

**Flat roof**



**Lambda ($\lambda_D$)**
0,026
W/mK

## Characteristics

- Lightweight
- Reaction to fire classification: Euroclass E (≥40mm)

## Advantages

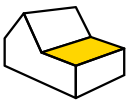
- High compressive strength ensures walkability.
- Compatibility with numerous waterproofing systems.
- Adhered, loosely laid and ballasted waterproofing systems.

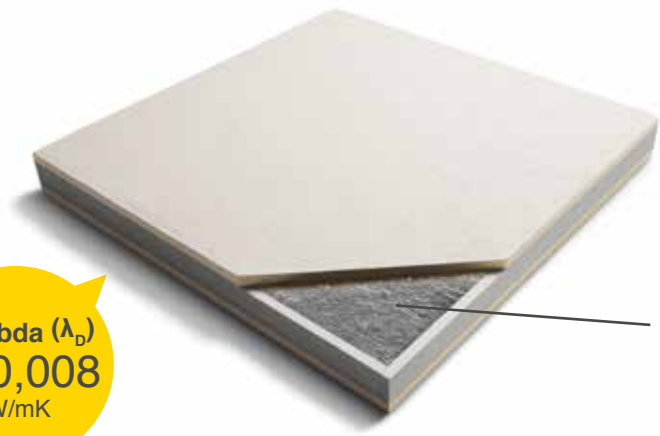
| | | 600 x 1200 mm |
|---|---|---|
| **Insulation thickness (mm)** | **$R_D$-value** ($m^2K/W$) | **#panels/pack** |
| 30 | 1,15 | 16 |
| 40 | 1,50 | 12 |
| 50 | 1,90 | 10 |
| 60 | 2,30 | 8 |
| 70 | 2,65 | 7 |
| 80 | 3,05 | 6 |
| 91 | 3,50 | 5 |
| 100 | 3,80 | 5 |
| 110 | 4,20 | 4 |
| 120 | 4,60 | 4 |
| 140 | 5,35 | 3 |
| 160 | 6,15 | 3 |
| 180 | 6,90 | 2 |

# Deck-VQ®

Ultra-high performance encapsulated VIP insulation for flat roofs and terraces.

**Flat roof**





**Lambda ($\lambda_D$):**
0,006 W/mK
for the VIP core*

**Lambda ($\lambda_D$)**
from 0,008
W/mK

*The lambda value of Deck-VQ depends on thickness and dimensions

## Characteristics

- Consists of a VIP core with a thermal performance of 0.006 W/mK
- Encapsulated with a high density PIR protection board on all sides
- Only adhered systems

## Advantages

- The ultimate solution for limited spaces.
- Ultra-high thermal performance.
- Easy installation combined with design service.

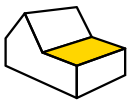
| | | 600 x 300 mm | 600 x 600 mm | 1200 x 300 mm | 1200 x 600 mm |
|---|---|---|---|---|---|
| **Insulation thickness** (mm) | $\lambda_D$ (W/mK) | $R_D$-value (m²K/W) | $R_D$-value (m²K/W) | $R_D$-value (m²K/W) | $R_D$-value (m²K/W) |
| 45 | 0,009 | 5,00 | 5,00 | 5,00 | 5,00 |
| 60 | 0,008 | 7,50 | 7,50 | 7,50 | 7,50 |

The envelope of the vacuum insulation panel must not be damaged by sawing, drilling, milling or nailing. Deck-VQ® must be handled with care.

# Topcover

Ultra-thin insulation board with high compressive strength.

**Flat roof**



**High compressive strength**
≥ 500
kPa

## Characteristics

- Ultra thin
- Lightweight
- Lambda 0,034 W/mK
- Reaction to fire classification: Euroclass E

## Advantages

- High compressive strength.
- Excellent dimensional stability.

| | | 1200 x 600 mm | 2440 x 1205 mm |
|---|---|---|---|
| **Insulation thickness** (mm) | **$R_D$-value** ($m^2K/W$) | **#panels/pack** | **#panels/pack** |
| 10 | 0,25 | — | 50 |
| 15 | 0,40 | 35 | — |

# Case




## Tripla

# A new 24h city centre in Helsinki

"Three urban city blocks in Pasila, Helsinki are pulsating at the same pace with the metropolis. Tripla is a city area full of possibilities for modern living, working and experiences. Eurothane® Silver E was chosen for the roof due to its excellent technical features."

**Location**
Pasila, Helsinki

**Contractor**
YIT Suomi Oy

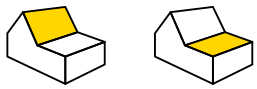
**Architect**
Sweco

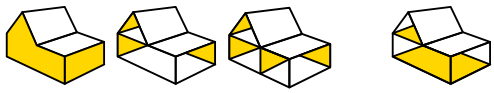
**Type**
Flat roof

**Product**
Eurothane Silver E
80 x 1200 x 2400

# Our added value in every application

## Thermal PIR insulation





### Roof insulation

A wide range of insulation solutions for pitched and flat roofs.

**Insulation for pitched roofs**
- for new-build, renovation and conversion projects
- easy installation of the insulation panels on the roof.

**Insulation for flat roofs**
- on concrete, wood or steel constructions
- with or without slope
- in a mechanically fastened, adhered or loosely laid and ballasted waterproofing system.

### Wall insulation

Specific solutions for exterior and interior walls.

**Insulation for cavity walls**
- for cavity wall in new build and renovation projects
- with tongue-and-groove click system: ensure high level of wind tightness avoiding thermal bridges.

**Exterior wall insulation**
- façade insulation for new-build and renovation projects
- ensures efficient, uninterrupted insulation layer around the building
- combination possible with a broad range of exterior finishings.

**Insulation for interior walls**
- insulation with insulation board and plasterboard in one
- to (re)insulate interior walls for applications where aesthetics and use of space are important considerations
- examples: houses, flats, urban projects and historic or cultural heritage sites.

### Floor insulation

Recticel Insulation offers floor insulation for application on:
- ground floors
- attic floors.

Insulation installation: on or under the construction floor.

## Acoustic insulation

- for maximum comfort and noise reduction between two adjacent living areas
- smooth installation: adhered to the separation wall.

Go to **www.recticelinsulation.com** to discover our wide range of products for pitched roofs, flat roofs, tapered roofing systems, loft spaces, ceilings, external walls, cavity walls, internal walls, floors, basements and many industry-related applications.

The insulation guide for flat roofs is published by Recticel. Contact info: Recticel Insulation, Gneissitie 2, 04600 Mäntsälä, ALV-numero: 2816195-7, nordic.insulation@recticel.com

Recticel Insulation is part of the listed **Recticel Group**, a leading European market player in **polyurethane solutions**.

The Recticel Group employs around **8,400 people** in **28 countries** across the world. It serves diverse markets, primarily in Europe, which accounts for around 93% of its net sales. The Group is also active in the USA and Asia.


FEEL
GOOD
INSIDE

RECTICEL insulation

www.recticelinsulation.com