

**pavatex**

**Build. Insulate. Relax.**

# *Insulating with wood*



# Editorial



As Europe's leading *manufacturer of woodfibre insulating materials*, PAVATEX is constantly setting new standards for modern building shells thanks to its comprehensive system solutions. For decades, PAVATEX has been using all its experience, expertise and innovative strength to optimize the performance of its products and has created multifunctional, customized insulating systems consisting of perfectly harmonized components that respond perfectly to the demands of the new-build and renovation sectors.

We are currently extending the capacity offered by our sites in Cham and Fribourg through the addition of an innovative new factory in Golbey in North-East France. Here, Europe's most productive and environmentally friendly woodfibre manufacturing plant will start operation in 2013 and permit the long-term expansion of our role as market leader. This will enable us to develop a range of completely new products for the future to complement our existing portfolio. The emphasis here is placed on the ease of use of our products. In this way, we will continue to be ideally positioned to meet the future demands of the constantly growing market for sustainable insulating and sealing systems and remain a proven, reliable partner for our customers.

Martin Brettenthaler,  
CEO PAVATEX Group





## Natural insulation with wood

Sustainable, **efficient building insulation** using PAVATEX multifunctional insulating and sealing systems not only provides effective protection against cold but also forms the basis for a pleasant comfortable indoor environment. Thus, PAVATEX's vapour-permeable wood-fibre insulating systems provide excellent protection against the cold of winter. In summer, by contrast, they keep the heat out so that the living space remains pleasantly cool for longer. What is more, every sustainable, renewable fibre of wood in the PAVATEX range of ecological insulating materials guarantees a particularly healthy as well as effective mode of insulation.

## Intelligent, guaranteed solutions

PAVATEX's insulating and sealing systems are **certified, tested quality products** whose comprehensive performance profile guarantees the highest level of reliability and protection to the structure while also ensuring a whole life improvement in the energy efficiency of buildings. At the same time, with its intelligent insulating and sealing products, PAVATEX is able to combine vapour-permeable insulation with airtight construction capabilities and act as a full-range supplier for integrated system solutions.

Whether roof, wall or floor, whether for new construction or renovation work, PAVATEX insulating and sealing systems guarantee complete, all-round protection for your house combined with an outstanding level of comfort.



# Unique properties

PAVATEX's vapour-permeable yet airtight insulating and sealing systems provide all-round **protection against cold, heat, noise and fire hazards**. At the same time, the ecological woodfibre insulating materials fulfil all requirements in terms of ecological responsibility and sustainability. They guarantee an outstandingly healthy indoor environment. Furthermore, the vapour-permeable structure of the insulating boards regulates interior humidity levels to ensure a pleasant, comfortable climate for building occupants.



## Thermal insulation in winter

Thanks to their low thermal conductivity, PAVATEX insulating materials prevent heat loss – for lower heating costs and a comfortable, warm atmosphere even during the cold months.



## Heat protection in summer

Due to their high heat storage capacity, PAVATEX insulating materials are able to capture heat – to keep buildings refreshingly cool even on hot days.



## Acoustic insulation

With their high weight per unit area and permeable surface, PAVATEX insulating materials provide effective noise protection – to keep interiors calm and quiet.



## Fire protection

PAVATEX insulating materials boast excellent burnout properties and a high level of fire resistance – so that buildings can resist fire for longer.





*Swiss Engineering.  
Made by PAVATEX.*



### Vapour permeable structure

Thanks to their low diffusion resistance, PAVATEX insulating materials store the ambient moisture to create a breathable building shell – and ensure a noticeably more comfortable and harmonious indoor climate.



### Airtight

Perfectly harmonized and tested sealing systems prevent heat losses and moisture damage – and create a healthier environment for building occupants.



### Excellent indoor climate

Carefully chosen natural materials ensure outstanding comfort and a healthy indoor climate.



### Sustainable and ecological

PAVATEX insulating materials made from the renewable raw material, wood, ensure the responsible use of natural resources, a positive CO<sub>2</sub> balance and simple disposal.



## Roof

PAVATEX provide the roof – the part of the building that is exposed to the most severe conditions – with effective protection against rain, cold, heat and intrusive noise.

### Roof renovation from the outside:

- 1 PAVAFLEX, flexible woodfibre insulating material for between-rafter insulation.
- 2 PAVATEX LDB 0.02, vapour-permeable airtight layer with integrated self-adhesive strips.
- 3 PAVATHERM-PLUS or ISOLAIR, insulating products used as sarking boards for roof and wall areas.

### Over-rafter insulating system:

- 6 PAVATEX DSB 2, airtight, vapour-permeable roof sheathing membrane.
- 7 PAVATHERM, versatile insulating fibreboard for roofs, walls and floors or PAVATHERM-FORTE, highly load-resistant insulating board for special requirements.
- 3 PAVATHERM-PLUS or ISOLAIR, insulating products used as sarking boards for roof and wall areas.
- 8 PAVATEX ADB, vapour-permeable roofing underlay with integrated self-adhesive strips.

### Insulating system with below-rafter insulating boards:

- 5 PAVATHERM-PROFIL, load-resistant, plaster-bearing insulating fibreboard for additional internal roof insulation.
- 4 PAVATEX DB 3.5, airtight vapour control layer for vapour-permeable roof and wall constructions.
- 9 PAVATEX DB 28, airtight vapour control layer for roof and wall constructions with reduced vapour penetration.
- 1 PAVAFLEX, flexible woodfibre insulating material for between-rafter insulation.
- 3 PAVATHERM-PLUS or ISOLAIR, insulating products used as sarking boards for roof and wall areas.

## External walls

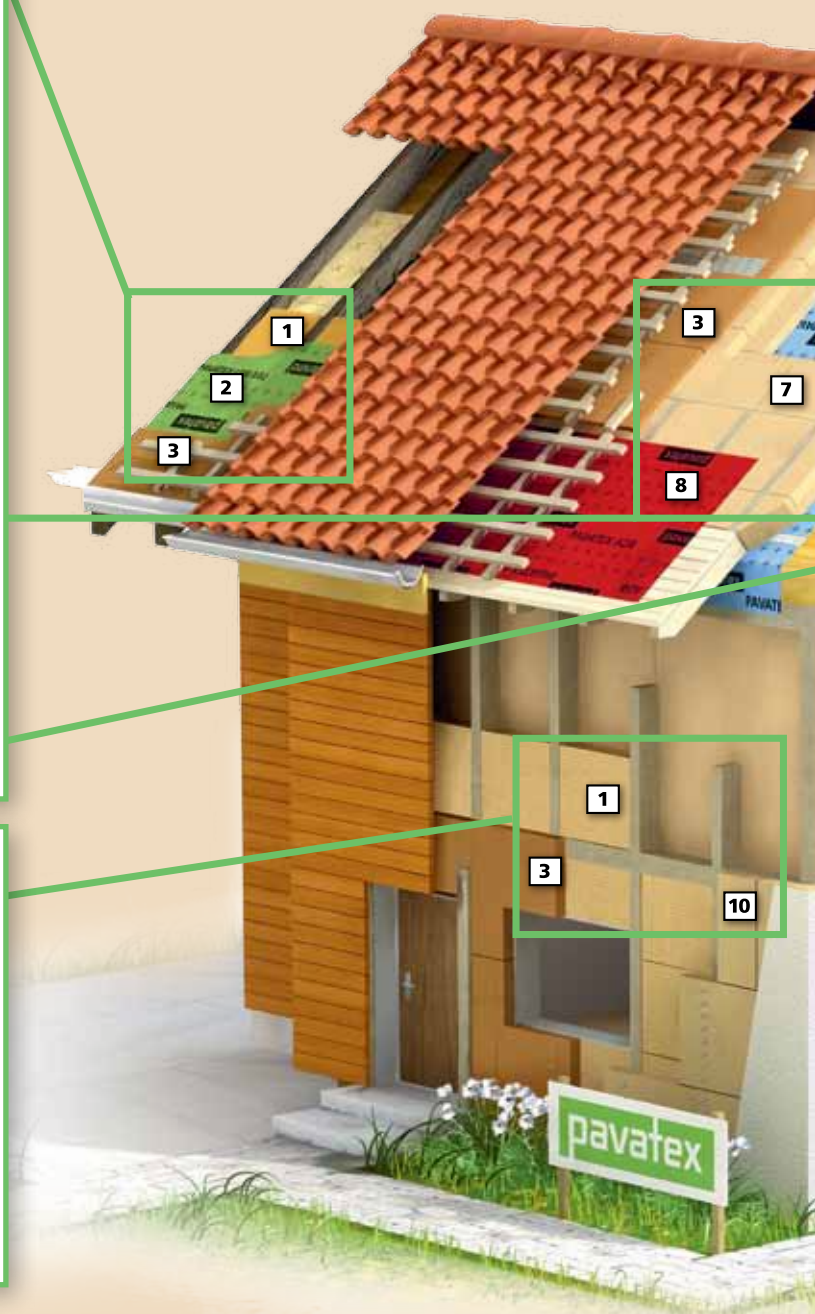
Whether used with rendered or clad finishes, PAVATEX's insulating and sealing systems not only provide optimum protection against noise, cold and the heat of summer but also have an outstanding heat and moisture storage capacity.

### External wall systems

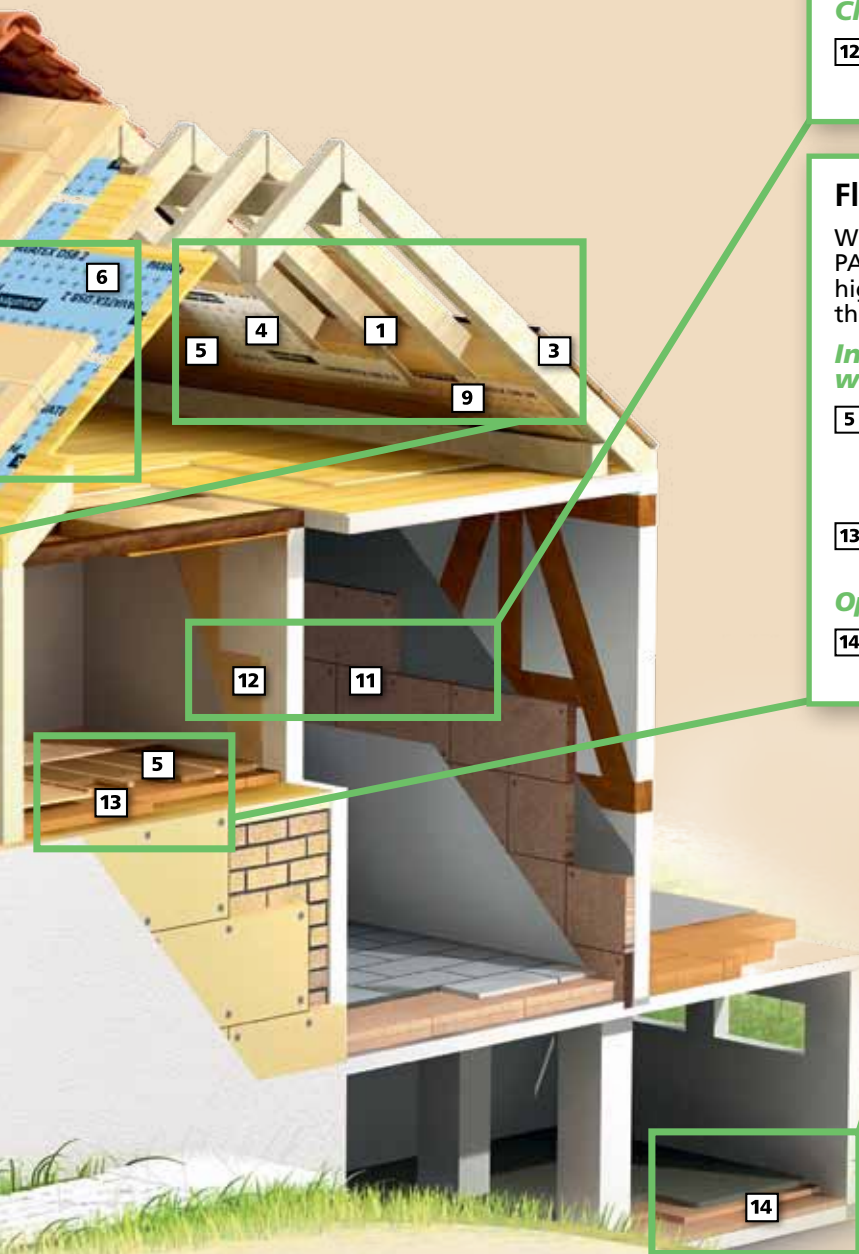
- 1 PAVAFLEX, flexible woodfibre insulating material.
- 3 PAVATHERM-PLUS or ISOLAIR, insulating products for roof and wall areas.
- 10 DIFFUTHERM, the woodfibre insulating board for composite thermal insulation systems.

# Systems for

The easy-to-use PAVATEX insulating and sealing systems combine vapour-permeable insulation with airtight construction to form an integrated system solution *available from a single supplier*. Forming a multifunctional building



shell, they meet all the challenges facing insulating materials used for roofs, walls, facades and floors and offer outstanding structural security and reliability.



## Internal wall

Natural, vapour-permeable PAVATEX woodfibre insulating materials create a noticeably more agreeable and healthy indoor climate.

### Internal insulation of external walls:

- 11** PAVADENTRO, insulating fibreboard with a mineral functional layer.

### Cladding for walls and pitched roofs

- 12** PAVACLAY, moisture-regulating dry-construction boards made from woodfibre and clay.

## Floor

With its insulating systems designed for floor use, PAVATEX can provide a range of solutions even for high-load areas as well as reliable protection against the transmission of airborne or impact noise.

### Insulating system for solid wooden flooring:

- 5** PAVATHERM-PROFIL, load-resistant, plaster-bearing insulating fibreboard for floor construction (with joint laths) as well as for additional internal roof insulation.

- 13** PAVABOARD, highly load-resistant insulating fibreboards for floor construction.

### Optimum protection against impact noise:

- 14** PAVAPOR, highly load-resistant impact sound insulation board for all-round use.

PAVATEX woodfibre insulating materials are tested, certified high-quality materials.



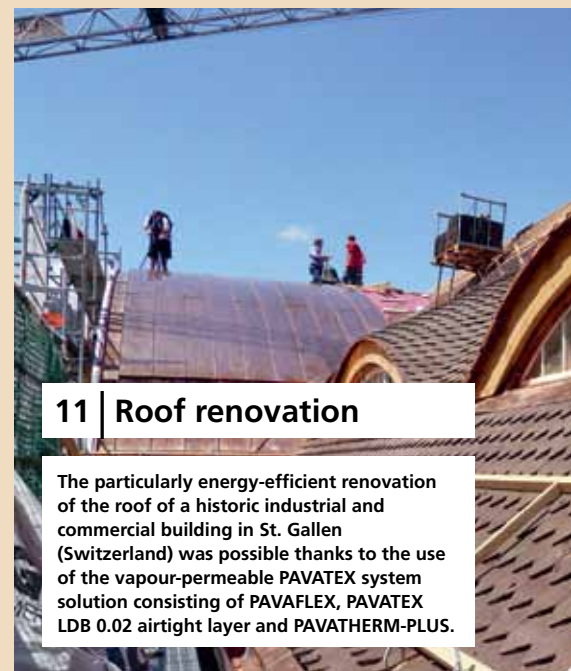
# Proven in practical use

## PAVATEX system solutions for new-build and renovation



### 10 | Roof for new build

During the construction of two new multi-family houses in Willerzhofen (Germany), PAVATHERM insulating fibreboards were used to install high-performance over-rafter insulation.



### 11 | Roof renovation

The particularly energy-efficient renovation of the roof of a historic industrial and commercial building in St. Gallen (Switzerland) was possible thanks to the use of the vapour-permeable PAVATEX system solution consisting of PAVAFLEX, PAVATEX LDB 0.02 airtight layer and PAVATHERM-PLUS.



### 13 | External wall renovation

Thanks to the use of PAVATEX solutions for roof and wall renovations during the energy-saving restoration of a multi-family building in Penzberg (Germany), it was possible to construct a high-performance, multifunctional building shell which has reduced heating costs by more than 50 percent.





Whether in the new-build or renovation sectors, there are countless practical examples of the successful use of PAVATEX insulating and sealing systems. And the requirements placed on the materials are as varied as the buildings themselves. In the new-build sector, in particular, **low energy consumption, maximized comfort for occupants and ecological considerations** are of great importance. PAVATEX insulating and sealing products outstandingly fulfil all the requirements that are now placed on new buildings and guarantee tailor-made system solutions from a single supplier.

In the case of renovations, the task is to ensure that existing buildings are properly equipped for the future. And PAVATEX is able to meet this challenge with a product portfolio that covers every requirement. Contemporary, state-of-the-art renovation work using PAVATEX insulating and sealing systems not only protects the building shell but also improves the **energy efficiency** of buildings and ensures they **retain their value**.



## 12 | External wall for new build

The residential project "Le Toit Vosgien" in the commune of Saint Dié des Vosges in eastern France achieved an outstanding level of energy efficiency and was awarded the low energy quality certificate "Bâtiment Basse Consommation Effinergie" (BBC-Effinergie) thanks to the use of DIFFUTHERM and ISOLAIR insulation boards.



## 14 | Internal wall insulation

Following the renovation of the historic Heinlinscher Hof in Marbach (Germany), PAVADENTRO internal wall insulation ensures the controlled transfer of moisture through the existing building and reduces the formation of condensation to a minimum.



## 15 | Floor insulation

The load-resistant PAVATEX floor insulation solutions used during the renovation of the parish building in Herlazhofen (Germany) not only ensure optimum thermal insulation but also mean that the construction is insulated against airborne and impact noise.

# PAVATEX roofs with all-round

The thermal insulation and heat storage capabilities of PAVATHERM, coupled with the easy-to-use format, make this the ideal product for use in a wide range of constructions.



**“PAVATHERM insulating fibreboards are suitable for many different applications. Both vapour-permeable and hygroscopic, they form the basis for reliable construction work.”**

Johannes Weizenegger,  
Marketing Team Manager  
for Switzerland, France  
& Benelux



Roofs that have been insulated and sealed with PAVATEX provide all-round protection against cold, heat, noise and fire hazards. For **new buildings**, PAVATEX over-rafter insulation represents the best possible quality roof insulation solution. The uninterrupted, high density insulation above the rafters results in a high-performance insulating layer which can be laid quickly and easily across the entire area to be insulated. This minimizes thermal bridges and increases the overall performance of the insulation. In contrast, in the case of between-rafter insulation, the areas between the rafters are flexibly insulated with PAVAFLEX. This increases the overall performance of the insulation. The system is rounded off by internal insulation using PAVATHERM-PROFIL wood fibre boards.



#### Over-rafter insulation

PAVATHERM insulating boards laid over the entire area of the rafters provide a continuous, high-performance insulating layer below the roof tiles and supporting battens.

The PAVATEX roof renovation system, consisting of PAVAFLEX, PAVATEX LDB 0.02 airtight layer and PAVATHERM-PLUS or ISOLAIR insulating fibreboards, ensures a U-value of less than 0.2 W/m<sup>2</sup>K at this building in St. Gallen.



During **roof renovations** in existing buildings, one of the main objectives is to reduce energy consumption through more efficient insulation. Using PAVATEX roof renovation systems, any roof can be upgraded to a new-build level without difficulty. In addition, it is possible to install the insulation from inside without modifying the existing roofing. Alternatively, in cases where the roof area serves as living space, the renovation work can be performed from the outside using the flexible between-rafter insulation solution, vapour-permeable airtight layer and sarking boards. Thanks to the PAVATEX system warranty, the system is guaranteed to be permanently and reliably sealed across the entire construction area – both in the case of new buildings and renovations.



#### Roof renovations from the outside

The combination of PAVATHERM-PLUS or ISOLAIR, the PAVATEX LDB 0.02 airtight layer and PAVAFLEX represents the perfect solution for roof renovation projects.



**“PAVAFLEX is the flexible woodfibre insulating material for wall and roof insulation. It can be installed quickly, easily and without gaps between construction elements.”**

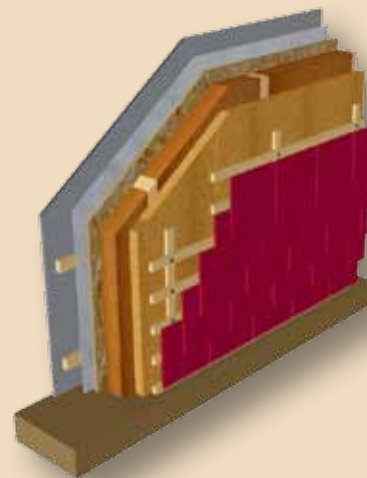
Stefan Huber,  
PAVATEX Sales  
and Application  
Advisor





In the "Le Toit Vosgien" residential project in France, insulation of the external walls using PAVATEX insulating boards ensures that these timber houses are exceptionally energy-efficient and environmentally friendly.

Whether used with a rendered or timber facade, solid wall or ventilated cavity – PAVATEX's insulating systems for **external walls and facades** meet all performance requirements. The slimline wall construction not only gives the building a modern, contemporary appearance but also protects it against cold, the heat of summer and disruptive noise. In addition, the vapour-permeable structure of PAVATEX external wall solutions ensures a pleasant, harmonious indoor climate. To meet these requirements, the DIFFUTHERM render carrier board or PAVATHERM-PLUS for back-ventilated facades are the first-choice solutions in the new-build sector.



#### External wall insulation for timber-frame construction:

When used to insulate external walls in timber-frame constructions, PAVATHERM PLUS insulating boards installed behind the external cladding achieve excellent insulation values. Between the rafters, the wall construction is rounded off by an insulating layer of PAVAFLEX or mineral wool.



**"PAVATHERM PLUS insulating boards guarantee exceptional protection against cold, heat, noise and fire hazards. The new profile geometry of PAVATEX insulating fibreboards ensures an even better fit and sealing properties."**

Jérémie Boucher, Technical Manager France and Benelux

# ditional building shell

With its DIFFUTHERM and PAVATHERM PLUS insulating boards, PAVATEX also possesses a high-performance, energy-efficient solution for external wall renovations. The boards, which possess outstanding thermal insulation properties, are mounted on a timber frame construction fixed to the existing wall which is itself filled with PAVAFLEX, a flexible woodfibre insulating material from PAVATEX. This system provides protection against heat, cold, noise and fire hazards and can be applied quickly and easily. In this way, it is possible to insulate all types of external wall in a way that complies with current **low energy standards** for new constructions – a solution that soon pays for itself thanks to the permanent reduction in heating bills.

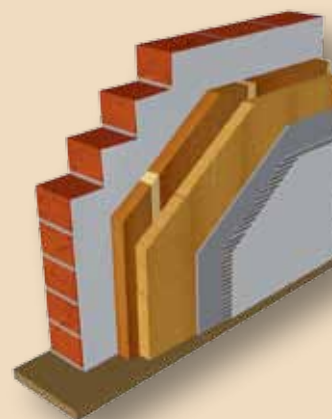


**“DIFFUTHERM is the insulating fibreboard for composite thermal insulation systems. It forms the perfect basis for a variety of rendering systems. Since DIFFUTHERM is a combination of different board qualities, it is extremely stable and can balance out stresses.”**

Christoph Zürcher,  
Technical Manager for New Markets



In the PAVATEX renovation system for external walls, the timber-frame construction is filled with PAVAFLEX before being covered with DIFFUTHERM insulating boards.



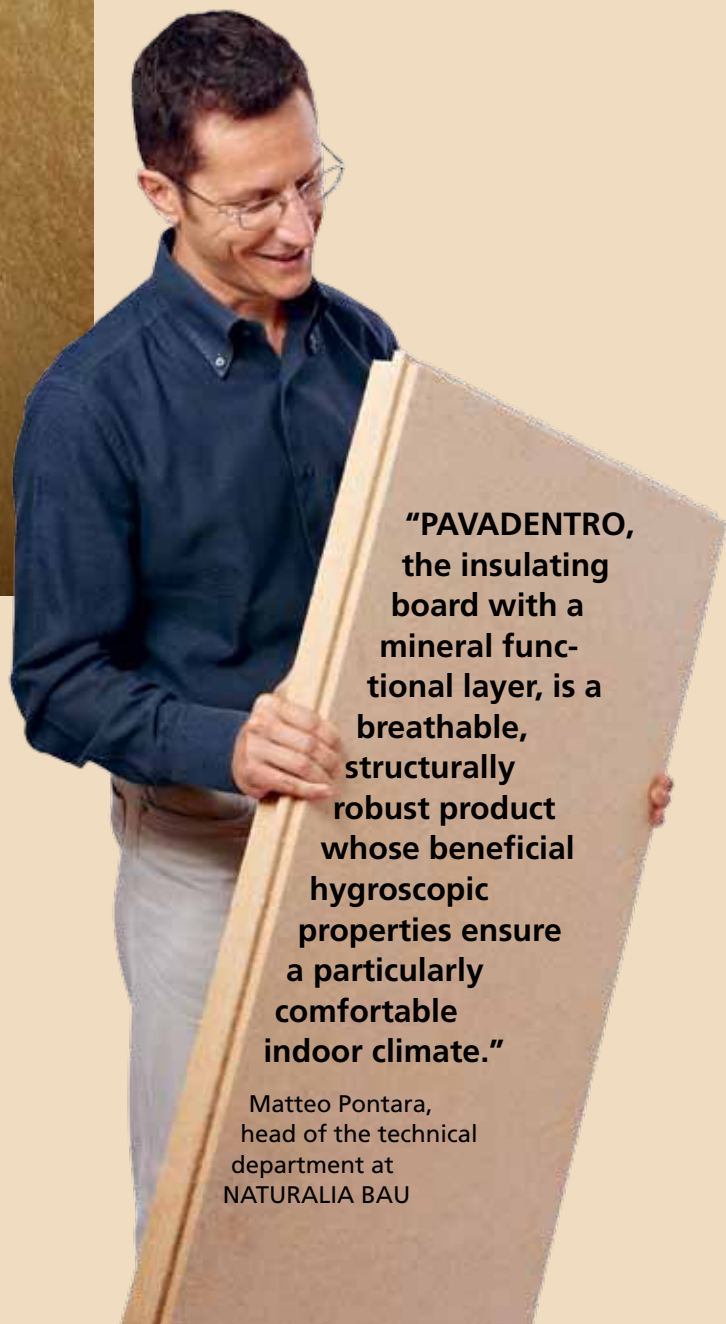
**External wall insulation for solid constructions:**  
PAVATEX's render-carrying thermal insulation board for external walls is mounted directly on the existing render of the existing wall construction. The gaps in the timber-frame construction can be insulated with PAVAFLEX or mineral wool. The DIFFUTHERM render carrier board completes the installation.

# Innovative internal insula



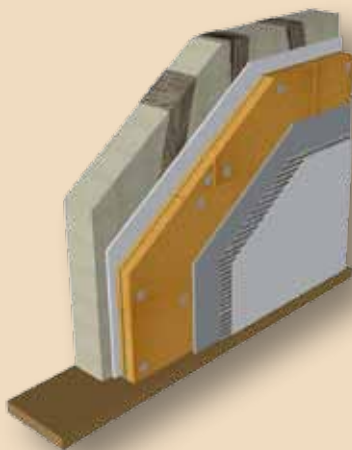
Because PAVADENTRO insulates from the inside, the unique appearance of historical facades such as that of the former manor house in Marbach can be preserved.

Whenever the facade has to remain visible as, for example, in the case of historic buildings, then the **walls have to be insulated internally**. However, conventional internal insulating systems which act as vapour barriers often allow moisture to penetrate and their susceptibility to faults may make them a risky or unsuitable choice, in particular for use in historic buildings. That is why PAVATEX developed the PAVADENTRO insulating board for internal walls. This, in combination with the integrated mineral functional layer, actively uses the capillary and hygroscopic properties of woodfibres to transport moisture and thus prevent the destructive effect of condensation. In this way, the capillary action of the PAVADENTRO internal wall insulating board maintains the drying capabilities of the existing components and ensures a noticeably better and more harmonious indoor climate.



**“PAVADENTRO, the insulating board with a mineral functional layer, is a breathable, structurally robust product whose beneficial hygroscopic properties ensure a particularly comfortable indoor climate.”**

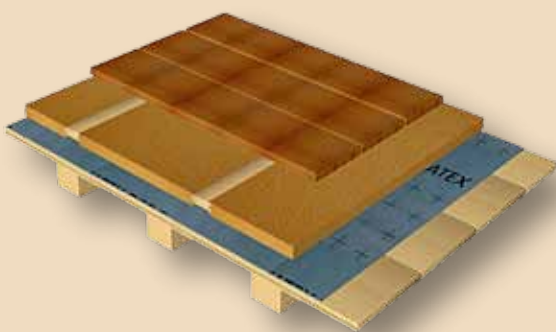
Matteo Pontara,  
head of the technical  
department at  
NATURALIA BAU



#### Internal wall insulation:

For internal insulation, PAVADENTRO is simply mounted on the existing plastered wall (solid construction or wood) before being plastered. PAVADENTRO actively uses the hygroscopic properties of woodfibres to prevent condensation from forming and also ensures the controlled transfer of moisture.

PAVATEX also provides proven, high-performance solutions for internal floor insulation. These include load-resistant, rigid PAVATHERM PROFIL insulating board, multipurpose PAVAPOR impact sound insulation board and highly load-resistant, rigid PAVABOARD insulating fibreboard. All the products can be used for different type of floor construction such as floating and dry screeds, wooden floors or fills and ensure tranquillity and comfort thanks to their optimized **thermal and acoustic insulation**.



Apartment partitioning and intermediate floor insulation:

A load-resistant fill is poured on the wood shuttering of an existing floor construction to equalize any differences in level. This then acts as the basis for the subsequent PAVAPOR or PAVATHERM-PROFIL layer which is covered in turn by wooden boards.

PAVATHERM-PROFIL is a load-bearing insulating fibreboard with outstanding thermal and acoustic insulating properties for floor constructions.



**“With PAVATHERM-PROFIL, PAVATEX is able to supply a high-performance sound absorption system that has been specially designed for floor use. It absorbs sound waves in the relevant frequencies and protects against airborne and impact noise.”**

Nadja Riedweg,  
PAVATEX Project Manager

# In harmony with the enviro



Made from **renewable natural materials**, PAVATEX's insulating systems are particularly ecological and sustainable building components. The raw material, supplied in the form of slabs, splinters and chippings, comes from sustainably stewarded domestic woodland and represents a by-product from the manufacture of timber for furniture or construction use. The wood, which comes from fir and spruce trees, is FSC-certified (Forest Stewardship Council). Due to their great ecological value and positive influence on the health of building occupants, PAVATEX products are also certified as complying with the international natureplus standard and are specially recommended by healthy living specialists such as the renowned Sentinel-Haus institute. For many years, the ÖKOTEST foundation has also awarded PAVATEX products the classification "Very Good".

The use of PAVATEX insulating systems makes an important contribution to ecology and sustainable resource utilization. The reduction in energy consumption in buildings insulated using PAVATEX products helps achieve considerable long-term **energy savings**. This preserves resources, reduces CO<sub>2</sub> emissions and improves the global climate balance. Last but not least, PAVATEX insulating materials, unlike oil-based products for instance, can be used to provide energy or be composted to form earth at the end of their lifecycle. Together, all these factors mean that PAVATEX insulating systems are genuinely natural, ecologically valuable building materials that are ready to meet the challenges of the future.

PAVATEX woodfibre insulating materials are made from wood from sustainably stewarded forests. They contribute in many ways to improving the carbon balance and consequently help protect our climate.







# A production process to be



From the raw material through fibre manufacture and on to the finished product, PAVATEX, as a leading supplier of top-quality woodfibre insulating systems for modern building shells, always places great emphasis on the responsible, efficient use of **raw materials and resources**.

PAVATEX manufactures its products at Cham and Fribourg in Switzerland which will be joined in early 2013 by the new Golbey site in France. All the factories use **state-of-the-art equipment and technology, energy-efficient production processes and environmentally responsible process technologies**. Alongside its legal obligations, PAVATEX also meets additional environmental objectives such as the reduction of fossil fuel consumption or the use of renewable energy sources, for example through the installation of a biomass boiler which converts waste wood from production into heat.

Recently cut leftover wood in the form of sawmill slabs, splinters and chippings form the starting point for PAVATEX's wood fibre insulating materials. No old wood is used. No pesticides or flame retardants are added during manufacture.

**"In everything it produces, PAVATEX thinks about ecology. And we are constantly developing innovative new processes and procedures, for instance in order to cut energy requirements – as exemplified by our new factory in France that will set new standards in terms of ecology and sustainability."**

Herbert Christen,  
Production and Technology Director



***proud of***

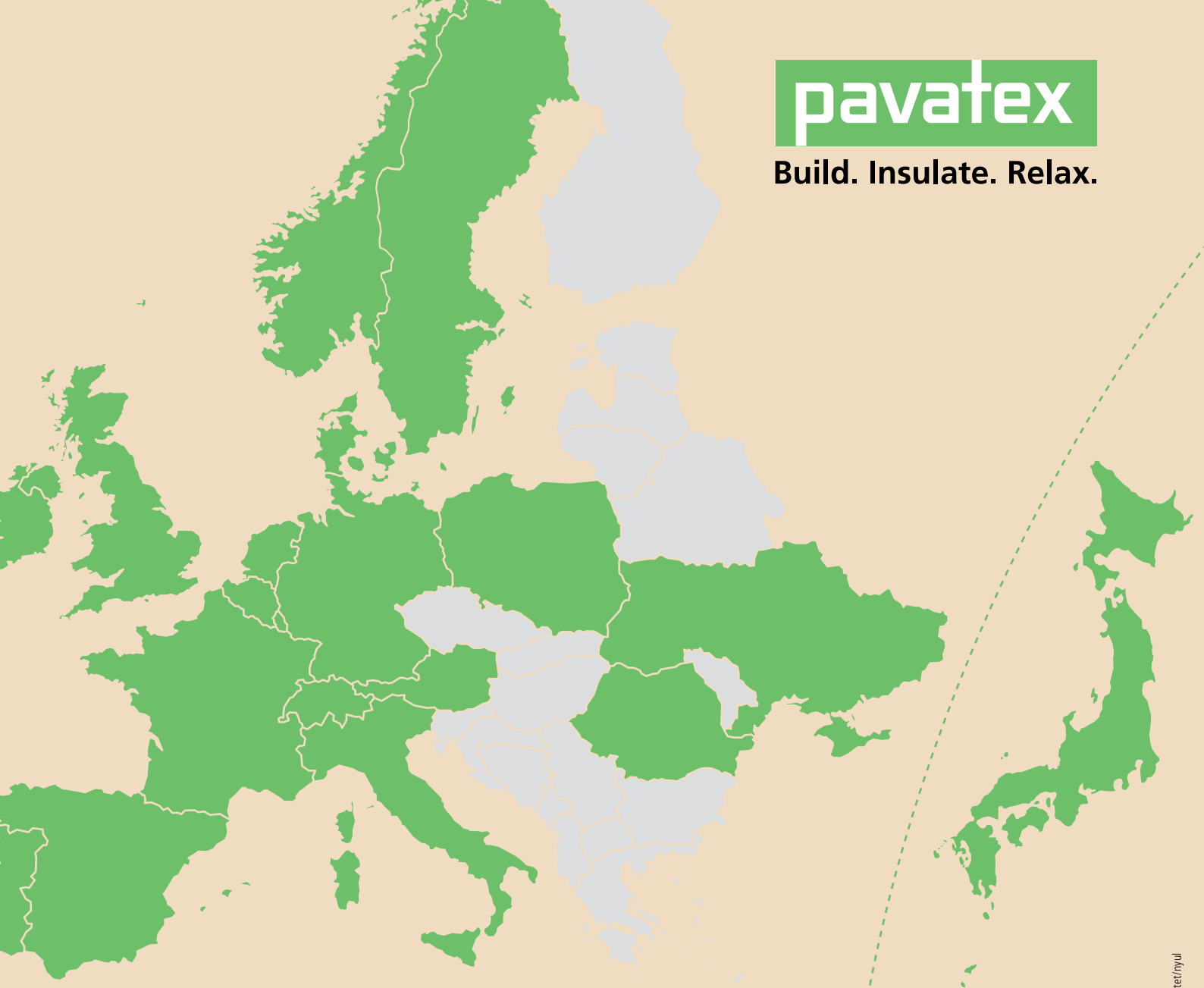


Environmental protection and energy efficiency are also crucial to PAVATEX's production activities. Here, state-of-the-art machine technology ensures that the impact on the environment is kept to an absolute minimum.



# pavatex

Build. Insulate. Relax.



**PAVATEX SA**

Site Fribourg  
Rte de la Pisciculture 37  
CH-1701 Fribourg  
Site Cham  
Knounerstrasse 51-53  
CH-6330 Cham  
[www.pavatex.com](http://www.pavatex.com)



**PAVATEX France**

Site Golbey  
Rte Jean-Charles Pellerin  
Zone Industrielle III,  
F-88190 Golbey  
[www.pavatex.fr](http://www.pavatex.fr)



**PAVATEX Germany**

[www.pavatex.de](http://www.pavatex.de)



**PAVATEX Austria**

[www.pavatex.at](http://www.pavatex.at)



**PAVATEX Benelux**

[www.pavatex.nl](http://www.pavatex.nl)  
[www.pavatex.be](http://www.pavatex.be)  
[www.pavatex.lu](http://www.pavatex.lu)



**PAVATEX Japan**

[www.pavatex.jp](http://www.pavatex.jp)



**Naturalia-BAU**

[www.pavatex.it](http://www.pavatex.it)



**Natural Building Technologies Ltd**

[www.pavatex.co.uk](http://www.pavatex.co.uk)



**Skandinaviska Miljöbyggssystem AB**

[www.pavatex.se](http://www.pavatex.se)



**TACODAN A/S**

[www.pavatex.dk](http://www.pavatex.dk)



**ECOSPAI**

[www.pavatex.es](http://www.pavatex.es)



**BUILDgreen**

[www.pavatex.pl](http://www.pavatex.pl)



**T&S Data Construct**

[www.pavatex.com](http://www.pavatex.com)



**Euroizol**

[www.pavatex.ua](http://www.pavatex.ua)

Your specialist dealer will be delighted to assist you with comprehensive, expert advice:

Acara Concepts Ltd - Distributor  
Killosery  
Kilsallaghan, Swords  
Co. Dublin, Ireland  
[www.acaraconcepts.com](http://www.acaraconcepts.com)  
[info@acaraconcepts.com](mailto:info@acaraconcepts.com)  
Tel Irl: +353 (0)1 8409 286  
Tel UK: +44 (0)20 7998 1690

Deliveries will be made  
and invoices issued  
solely by PAVATEX SA,  
Rte de la Pisciculture 37,  
CH-1701 Fribourg