Neopor®

Innovation in Insulation

BASF

The Chemical Company

Thinking About Tomorrow Already Today — Renewable Solutions Pay Off

“What could be more enjoyable than planning a house for your family? Our daughter already has a very clear notion of what it should look like. We spent a lot of time looking into the construction materials since they are the bedrock of quality. In this process, one thing became clear to us: the right insulation is the key. The insulation has to provide protection against heat and cold weather; it helps to save energy, thus cutting costs. Besides, the material should not pose a risk to the environment or health, and at the same time, it should be affordable.”

Insulating panels made of Neopor® are the solution for homeowners who are thinking ahead. Neopor is a high-tech material that sets new standards for efficient thermal insulation and environmental compatibility.

Good insulation ensures indoor comfort. No unhealthy drafts, no condensation on the walls. Poorly insulated walls can cause not only unpleasant and unhealthy mold formation but also severe structural damage.

Professionally installed insulation protects the building so that it retains its value over the long term, while keeping the ongoing operating costs in check.

Saving resources, protecting the environment. Neopor® helps to lower heating costs, contributing to greater energy efficiency. At the same time, it safeguards the environment and promotes climate protection.

Neopor®
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Warmth and Comfort in Your Home

“These silver-gray panels made of Neopor® are really something special. This material embodies a sophisticated invention that provides excellent insulation. These insulating panels are much thinner than other materials, and yet, they yield the same results. There are also Neopor solutions for the roof and the basement. As a result, we can save expensive energy year in, year out, so that the investment pays off very quickly. And we are making a major contribution toward protecting the environment since less energy consumption also translates into lower CO_2 emissions.”

Neopor® contains tiny graphite particles that reflect radiant heat and give the material its silver-gray shine. These infrared absorbers and reflectors lower the thermal conductivity so that insulating panels made of Neopor can be about 20% thinner than panels made of Styropor®. This is why the modern Neopor is far superior to other materials when it comes to its insulating capacity.

This is an advantage that also pays off in the environmental balance. The considerable raw material savings means that fewer resources are needed, while the insulation accounts for a reduction of CO_2 emissions, making a valuable contribution toward climate protection.

This also benefits contractors. They can work with panels that weigh considerably less. This lowers costs, not only during the installation but also along the entire logistics chain, extending all the way from the factory to the construction site. And every kilometer less driven takes a load off the environment.

From the Basement to the Roof—
An Insulating Material for All Seasons

"Insulating materials made from Neopor® effectively stop heat loss. Be it the exterior, the inner walls, or the roof, all critical areas are reliably protected with this material. The exterior surfaces of the highly efficient "three-liter houses" and even "zero-energy houses" are already being fitted with insulating materials made of Neopor. Could there be any better recommendation than this?"

Exterior insulation (ETICS)

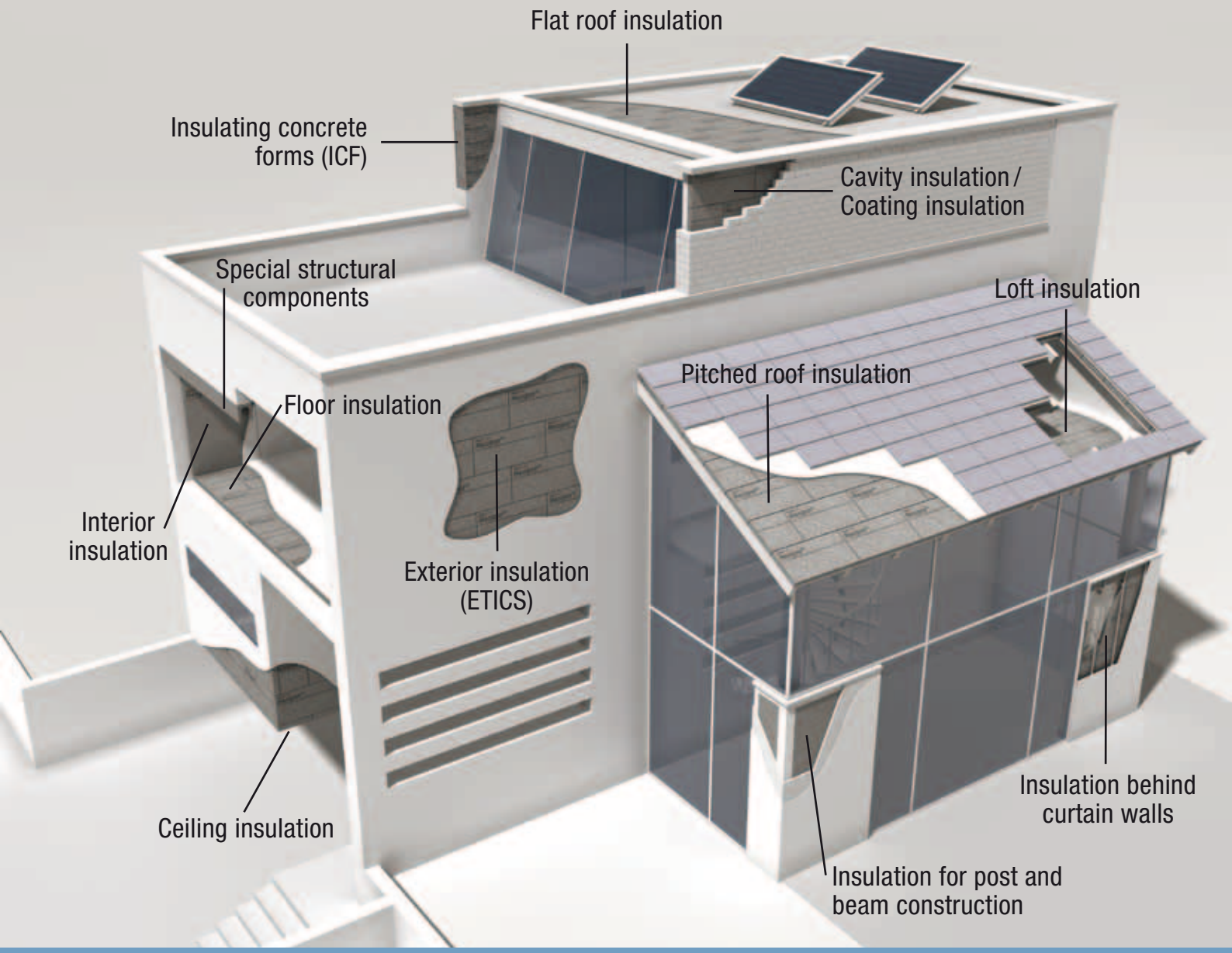
Exterior insulation with insulating panels made of Neopor creates a healthy and comfortable living climate. Such insulation not only saves energy but also avoids wide temperature fluctuations, effectively preventing the formation of cracks on the exterior surfaces.

Pitched roof insulation

Insulation is particularly important for roofs and this is where the insulating advantages of panels made of Neopor come to the fore: less weight on the roof structure, coupled with a high level of thermal protection in the cold of winter and in the heat of summer. The insulating material industry can also offer some clever solutions for the insulation between the rafters.

Flat roof insulation

Flat roofs are subjected to high thermal loads. Insulation made of Neopor shields the roof against these influences and provides a consistently high level of thermal protection. Insulating panels made of Neopor can be cut precisely to any required size.



Floor insulation

Panels made of Neopor® provide not only excellent thermal insulation, but also outstanding impact-sound insulation. Insulation of the ceiling of the top floor and insulation under the subflooring of the ground floor ensure a comfortable living climate.

Interior insulation

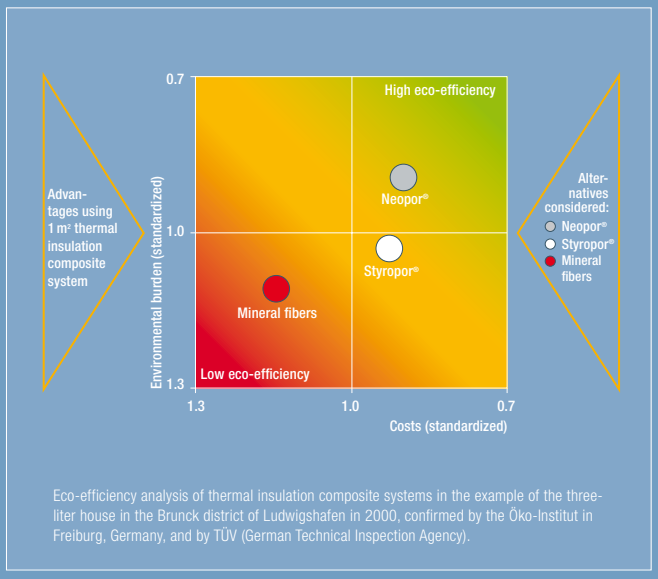
The interior is another area where Neopor ensures a high level of insulation and yields an excellent environmental balance. Solutions involving composite panels are used in such cases.

Insulating concrete forms (ICF)

Form elements and molded parts (ICF) made of Neopor have more than proven their worth. These elements, whose insulating properties are of paramount importance, attain very good values.

Good Insulation Cannot Be Seen — But It Can Be Felt

"It really is a great feeling when you know that you have opted for a sustainable solution. Day in, day out, our house helps us to consume less energy and to save valuable resources. We need to think about tomorrow today; after all, a family's home is much more than just a roof and four walls."



Eco-efficiency analysis of thermal insulation composite systems in the example of the three-liter house in the Brunck district of Ludwigshafen in 2000, confirmed by the Öko-Institut in Freiburg, Germany, and by TÜV (German Technical Inspection Agency).

Eco-efficiency means giving equal weight to costs and environmental burdens.

Material and energy consumption, costs, savings potential. Together, all of these aspects yield the eco-efficiency of a product.

The result is plotted on a four-quadrant system, with the costs on the x-axis and the environmental effects on the y-axis.

If the total costs are low, the product is situated in the right-hand section. In this context, all costs, ranging from the material and the installation all the way to logistics, are taken into account.

If the environmental impact of a product is low, the product is situated in the upper region of the diagram. At the bottom are the products that—seen as a whole—entail higher burdens.

The cost-efficient and environmentally sound products are those that are situated in the upper right-hand quadrant. They entail low environmental burdens as well as low costs: Neopor® is particularly eco-efficient.

Neopor®
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1930

Patent for the polymerization of monostyrene

1995 **Neopor®**

Patent for Neopor®

1920 1925 1930 1940 1950 1960 1970 1980 1990 2000 2005

1951 **Styropor®**

Patent for expandable polystyrene (EPS, Styropor®)

Quality Products from BASF — The Benchmark in Polystyrene For Over 50 years

Styropor® — Behind this name lies a success story that is everyone's goal. BASF discovered a classic over 50 years ago in expandable polystyrene (EPS). Under the tradename Styropor, EPS is now the solution for efficient insulation and safe packaging worldwide.

With Neopor®, BASF has taken the classic Styropor a step further. This new material for modern insulating materials is foamed just like Styropor and processed to boards and molded parts.

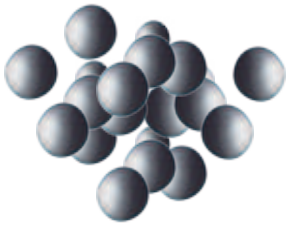
The vital difference can be seen with the naked eye in the silver-gray color. In Neopor, graphite is added to the material, absorbing and reflecting heat radiation and improving the insulating performance of EPS by up to 20 percent.

Products made from BASF's Neopor are an economic investment in the future and add to the value of a property.

Small, Round, Black—
One Material, Many Applications

Neopor® — Neopor is composed of small black beads of polystyrene (EPS) containing a blowing agent, which makes it expandable. BASF produces this unique material, which is processed by foam manufacturers, into insulating materials for a wide range of applications.

These black beads are foamed by converters on conventional EPS machines and processed to silver-gray foam blocks and molded parts with up to 20 percent better insulating performance than conventional EPS. The blocks are then cut to boards of different thicknesses.



Neopor insulating materials offer greater insulating performance and up to 50 percent lower use of raw materials than conventional EPS, helping environmental conservation and saving money. Environmentally-friendly Neopor insulating materials do not contain CFCs, HCFCs, HFCs, or other halogenated cell gases. They contain air as cell gas, which guarantees the preservation of the thermal conductivity throughout the life of the construction.

Neopor insulating materials therefore represent a modern, environmentally aware lifestyle. We call it: “Innovation in Insulation”.

Neopor®

Innovation in Insulation

Further information on Neopor®

- **Brochure: Neopor®—Innovation in Insulation**
- **Brochure: Building and Modernizing with Neopor**
- **Brochure: Fast & Easy Construction with Insulating Concrete Forms (ICF)**
- **Brochure: Wall Insulation**
- **Brochure: Roof Insulation**
- **Neopor film: Innovation in Insulation**
- **Website: www.neopor.de**
- **Neopor: Product sample folder**

Note

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed. (February 2010)

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KTFN 0802 BE – 02.2010 – GENERAL ENGLISH VERSION