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 yet, 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 house 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.

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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 roofs and basements. As a result, we can save expensive energy year in year out, so that the investments pay off very quickly. And we are making a major contribution towards protecting the environment since less energy consumption also translates into lower CO_2 emissions."

NEOPOR® CONTAINS TINY GRAPHITE PARTICLES that reflect heat radiation 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 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 at the same time, the insulation accounts for a reduction of CO_2 emissions, making a valuable contribution towards climate protection.

THIS ALSO BENEFITS CONTRACTORS. They can work with panels that weigh considerably less, which 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

"Neopor® efficiently puts an end to thermal losses. Be it the exterior, the inner walls or the roof, all of the critical areas are reliably protected with this insulating 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 WALL INSULATION

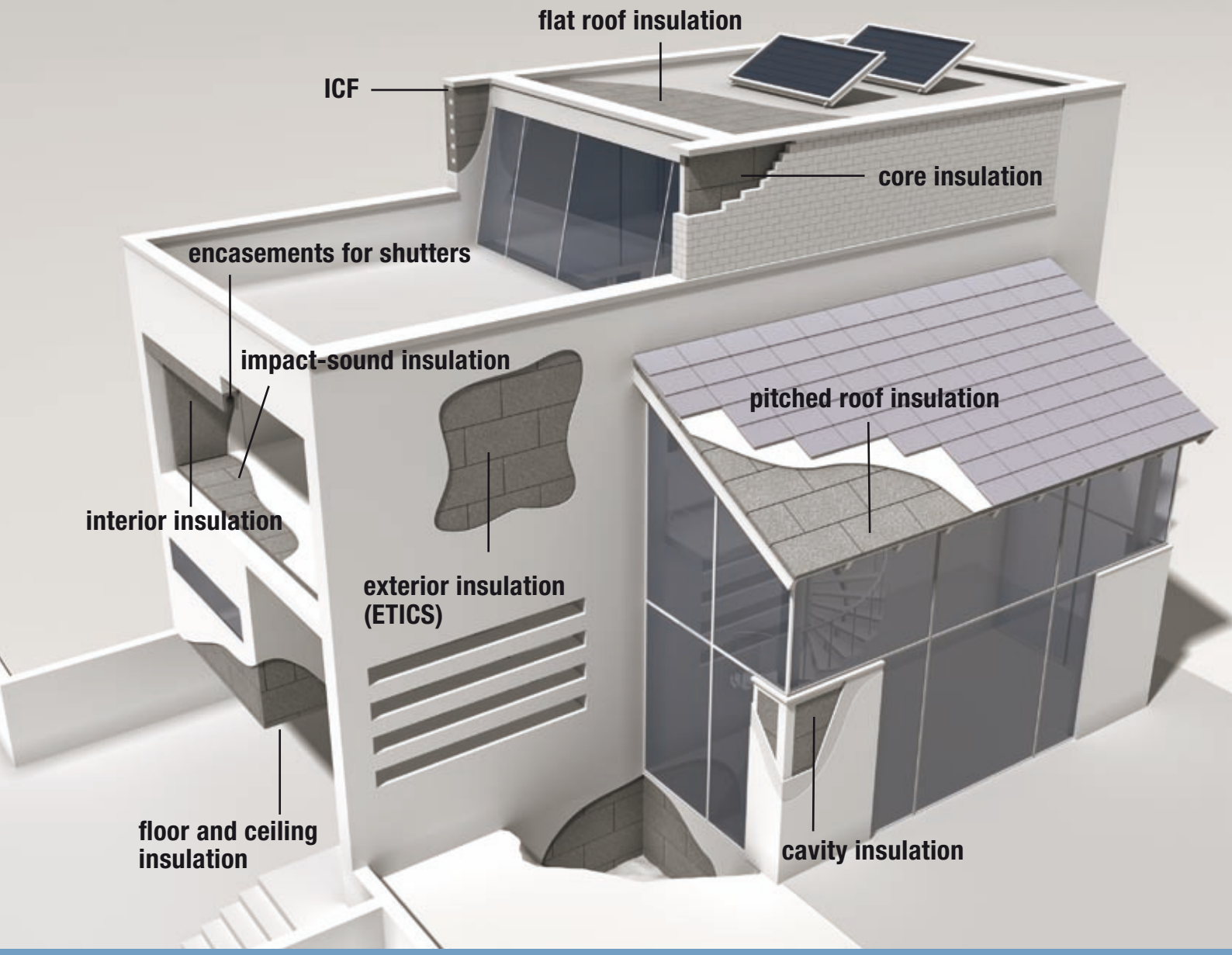
Exterior insulation with insulating panels made of Neopor® creates a healthy and comfortable living climate. Such insulation not only saves energy but also avoids wide temperature fluctuations, effectively preventing the formation of cracks on the exterior surfaces.

PITCHED ROOF INSULATION

Insulation is particularly important for roofs and this 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 desired size.



IMPACT-SOUND 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

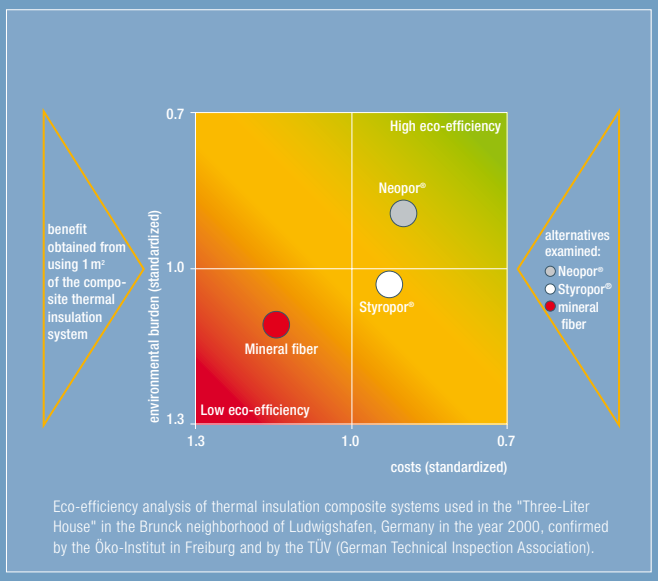
The interior is another area where Neopor® also ensures a high level of insulation and yields an excellent environmental balance. Solutions involving composite panels are used in such cases.

ICF

Formwork blocks 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 is really 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 used in the "Three-Liter House" in the Brunck neighborhood of Ludwigshafen, Germany in the year 2000, confirmed by the Öko-Institut in Freiburg and by the TÜV (German Technical Inspection Association).

ECOEFFICIENCY MEANS giving equal weight to costs and environmental burdens.

MATERIAL AND ENERGY CONSUMPTION, costs, savings potential. Together, all of these aspects yield the ecoefficiency 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 the 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 ecoefficient.

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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®)

A LONG TRADITION AS LEADERS IN SOLUTIONS FOR EFFICIENT THERMAL PROTECTION: BASF INSULATING MATERIAL

STYROPOR® – this name stands for an unmatched success story. With its invention of expandable polystyrene, abbreviated EPS, BASF introduced a classic to the world more than 50 years ago. Even today, under its brand name Styropor®, EPS is a worldwide concept when it comes to efficient insulation in housing construction as well as to secure packaging.

BASF DEVELOPED NOT ONLY STYROPOR® but also the innovative Neopor®. Like Styropor®, this modern insulating material is expanded and is processed into foam blocks, panels and molded parts.

THE CRUCIAL DIFFERENCE lies in the silver-gray color, which can actually be seen with the naked eye: in the case of Neopor®, graphite has been mixed in with the raw material. The graphite reflects heat radiation and considerably improves the insulation capacity. This translates into an advantage that is both simple and crucial: far fewer resources are needed in order to achieve the same insulating effect.

SMALL, ROUND, BLACK – ONE RAW MATERIAL; MANY APPLICATIONS

NEOPOR®: small black beads in the form of polystyrene granules that contain blowing agents and consequently can be expanded. BASF produces this unique raw material, which foam manufacturers then turn into insulating materials for a wide array of applications.

THESE BLACK BEADS are expanded by processors on conventional EPS machines and made into silver-gray foam blocks, panels and molded parts. The blocks are then cut into panels of different thicknesses.

INSULATING MATERIALS MADE OF NEOPOR® offer a higher insulating capacity using less raw material. They are gentle on the environment and on the wallet. Neopor® insulating materials symbolize a modern, ecologically sound life style. And this is what we call “Innovation in Insulation”.

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Additional information about Neopor®

- **Brochure: Neopor® – Innovation in Insulation**
- **Application brochure: Wall insulation**
- **Neopor® film: Innovation in Insulation**
- **Website: www.neopor.de**
- **Neopor®: product sample binder**

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 processor from carrying out own investigations and tests neither do these data imply any guarantee for certain properties nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographies, data, proportions, weights etc. given herein may change without prior information and does 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. (January 2008)

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