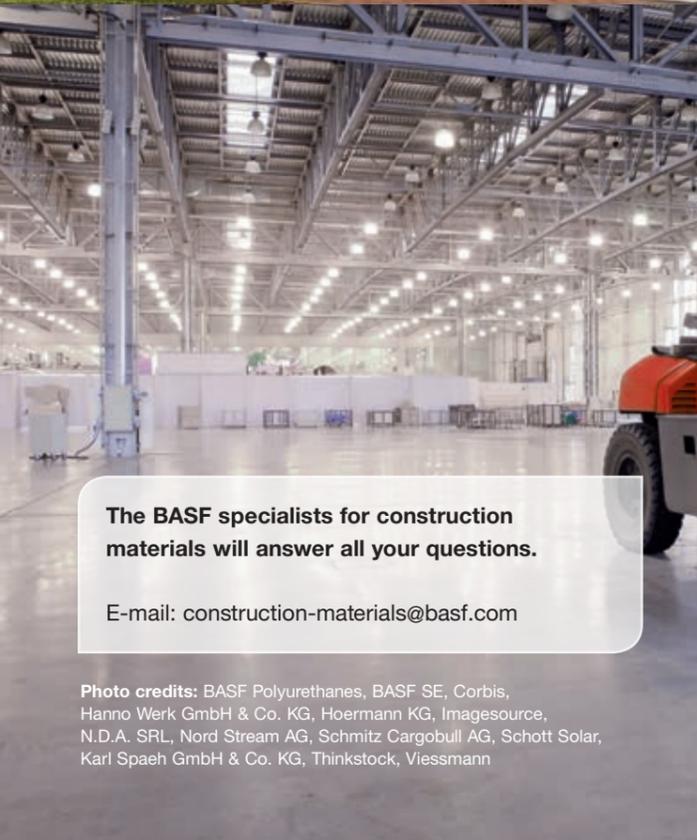




A solid basis.

BASF materials for the construction industry.
Your foundation for success.



The BASF specialists for construction materials will answer all your questions.
E-mail: construction-materials@basf.com

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Efficiency, sustainability and comfort with products for the construction industry and infrastructure.



BASF
We create chemistry



Efficiency, sustainability and comfort with products for the construction industry and infrastructure.



BASF
We create chemistry



Dr. Friedhelm Leirich, Vice President
BASF Performance Materials Europe,
Business Management Construction



PERFECTION TO THE LAST DETAIL.

Whether it's for new development, renovation or interior finish: today BASF's products play a decisive role in practically all planned construction in both the private and the industrial sectors. The economy and environmental characteristics of these products are vital for innovative and sustainable construction. In addition to the classic insulation products, we can offer applications for surface construction, coastal protection, acoustic insulation, district heating, cooling technology and lots more.

Performance materials are the foundation for efficient and sustainable construction.

The construction products in the range of BASF polyurethane, specialty foams and engineering plastics provide a broad spectrum ideally suited for housing and industrial construction, infrastructure development and interior finish. Our construction experts at BASF are able to develop optimal solutions from this comprehensive range for each client. The latest of these products are high-performance insulation materials which will ensure customized climate management, not only for slim construction but more scope for design.

The following pages will show you what you can build on!

COMMERCIAL & MORE

ELASTOPOR®, ELASTOPIR®	4–5	SANDWICH ELEMENTS industrial halls, cold stores and refrigerator rooms, climate and ventilation technology, refrigerated vehicles and containers
ELASTOPOR®, ELASTOPIR®	6	INDUSTRIAL GATES sliding gates and garage doors, sectional and industrial gates
POLYUREA: ELASTOCOAT®	7	SURFACE COATING AND SEALING parking levels, industrial floors, container ship floors, loading area coatings
ELASTOCOAT®	8	COATING facade coating, roof coating
BASOTECT®	9	ACOUSTIC AND THERMAL INSULATION construction and industry, room acoustics, solar collectors, air-conditioning and thermal technology
INFRASTRUCTURE		
ELASTOPOR®, ELASTOSHORE® GSPU	10	SURFACE COATING anti-corrosive protection for pipelines
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RESIDENTIAL

ELASTOPOR®, ELASTOPIR®, ELASTOSPRAY®, WALLTITE®	14–17	BUILDING INSULATION systems for roofs, walls and floors, insulating boards, spray foam, insulated brick slip systems (polyurethane)
STYRODUR®, NEOPOR®		outdoor and indoor insulation, core insulation, flat roof, pitched roof, attic, ICF systems (EPS and XPS)
ULTRADUR®, ELASTOPOR®	18	WINDOW PROFILES reinforced window profiles, foam filled window profiles
ELASTOCOAT®, ULTRAFORM®, ULTRADUR®, ULTRAMID®, ULTRASON®	19–20	SANITARY form components and decorative elements, toilet flushing systems, shower sprays, water meters, fittings
ULTRAMID®, ELASTOLIT®	21	CONSTRUCTION dowels, thermal break connections, roof applications/photovoltaic systems, imitation wood and stone
SLENTEX™, SLENTITE®	22–23	HIGH PERFORMANCE INSULATION MATERIALS customized climate management

IDEAS FOR THE FUTURE

ELASTOPOR[®], ELASTOPIR[®]

INTELLIGENT SANDWICH TECHNOLOGY FOR EFFICIENT COOLING, STORAGE AND TRANSPORT.

Industrial halls
Cold stores and refrigerator rooms
Climate and ventilation technology
Refrigerated vehicles and containers

COOL COST REDUCTION.

Integrating insulation and waterproofing panels made of Elastopor[®] and Elastopir[®] in sandwich technology ensures the optimal combination of thermal insulation and excellent mechanical and physical properties. A key advantage for manufacturers and consumers, as well as being an active

contribution towards climate protection. Elastopor and Elastopir are used as core material in sandwich elements with a metal top layer for wall and ceiling elements. Elastopir is mainly used for its fire performance properties.

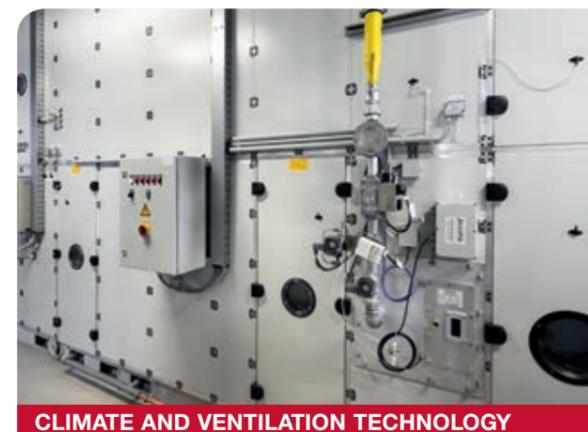
Cool. No break in the refrigeration supply chain with BASF sandwich elements.



The high load-bearing capacity of sandwich elements makes them ideal for the construction of large halls. They ensure optimal and complete thermal insulation without thermal gaps. The sandwich elements are a perfect construction material for facades and roofs through their Elastopor[®] and Elastopir[®] rigid foam core.



Wherever efficiency and safety in the refrigeration supply chain and resource-saving construction are required, the PU materials Elastopor and Elastopir ensure a considerable reduction of energy, raw materials and emissions through extremely low thermal conductivity for insulation in cold stores and refrigerator rooms.



In air-conditioning and ventilation systems, Elastopor satisfies the highest standards of hygiene and is insensitive to moisture. The PU used as core material in the panel yields an extra-low thermal conductivity, ensuring a very low heat loss via the housing wall.



Sandwich elements with PU core facilitate high density and outstanding thermal insulation which is continuous and free of thermal bridges. For refrigerated vehicles and containers as well as shipping containers it helps you save energy and prevents breaks in the refrigeration supply chain.

ELASTOPOR[®], ELASTOPIR[®]

With only two materials you can have the optimal solution for perfectly insulated doors and gates.



SLIDING DOORS AND GARAGE DOORS

Sliding doors: Robust strength, burglar-proof, plus a high degree of thermal insulation – all characteristics required for sliding doors, which is why today they are foamed with polyurethane rigid foams. The hot-dip galvanized double-walled segments ensure a result that can't be bettered with any other material: strength, soundproofing, noiseless

sliding, optimal insulation. Garage doors: The garage can further improve efficient insulation of the whole house by using Elastopor[®] or Elastopir[®] in the garage doors. An additional insulation improvement of up to 15 percent can be achieved by incorporating a thermo frame, which separates the casing from the structure.



SECTIONAL AND INDUSTRIAL GATES

Sectional gates: Modern sectional, vertically-opening gates also comprise a heat-insulating inner layer of PU material Elastopor or Elastopir. This guarantees better stability and burglary protection. Moreover, a thermo frame can improve insulation by up to a further 15 percent.

Industrial gates: Well-heated industrial halls need perfectly insulated gates to ensure warmth stays in the workplace and doesn't become an expensive loss. In addition, PU-reinforced sections are safer and take up less space than regular sliding doors.

POLYUREA: ELASTOCOAT[®]

Whatever might come – our coatings simply last longer than standard products.



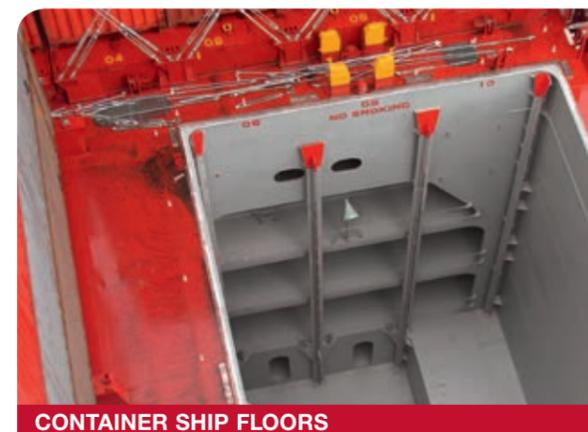
PARKING LEVELS

Parking levels, sewer shafts or tanks for chemicals – for the construction or restoration of heavy-duty surfaces, Elastocoat[®] Polyurea provides lasting protection. The spray system seals perfectly, curing in seconds, and suits all types of surfaces, providing fast, low-cost and durable sealing.



INDUSTRIAL FLOORS

BASF offers a wide variety of coating solutions for the individual requirements of various industrial sectors. Our coatings ensure a safe working environment through high resistance to chemicals, strong mechanical resistance, electric conductivity and various skid-proof levels.



CONTAINER SHIP FLOORS

Elastocoat Polyurea is applied seamlessly, preventing cracks and delamination while remaining resistant to abrasion, moisture, temperature variation, water and chemicals and is also available with conductive properties. Applying this material is an investment that will pay off for years.



LOADING AREA COATINGS

Elastocoat polyurethane spray systems easily transform slippery truck loading areas into long-lasting, skid-proof, wear-resistance surfaces. This material cures quickly, is scratch-resistant and reduces noise. Ultimately, the installation of a spray system saves time and money.

Behind the most attractive facade, there should be a BASF coating, just to be on the safe side.



FACADE COATING

A layer of Elastocoat® protects best against concrete corrosion, long-term static weakness and damp. A liquid film – this system adapts even to complicated surfaces like roof connections, domelights or shafts, ensures sealing without seams or joints.



ROOF COATING

Flat roofs in particular are prone to leaking. Sprayed-on BASF coating systems allow joint-free impervious protection even at temperatures as low as minus 50 degrees. An impressive example of this is the roof of the Astana Arena in Kazakhstan with a total area of 10,000 square metres and a capacity for 30,000 visitors.

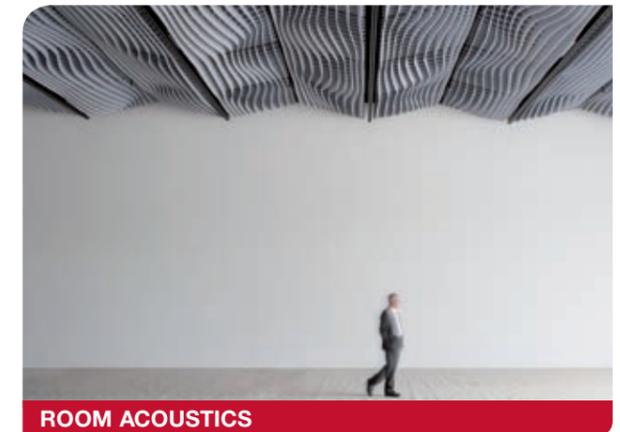


Today, only one single material is required to update acoustic and thermal insulation.



CONSTRUCTION AND INDUSTRY

Due to high sound absorption and fire protection, Basotect® is ideal for use in acoustic test rooms, engine test stands, wind tunnels and cinemas. Highly-developed composite slab absorbers made of Basotect are a modern form of resonance-type swinging systems which can be customized to meet clients' individual sound absorption requirements.



ROOM ACOUSTICS

Open-pore sound absorbers made of Basotect G+ ensure pleasant room acoustics, in new or retrofit applications. Additionally it offers a high degree of fire safety and versatile possibilities of design. The light weight of these absorbers allow large-scale, free-floating elements to be used, offering an attractive room design.



SOLAR COLLECTORS

Solar units should collect as much sun as possible, reflecting as little as possible. Basotect provides good heat insulation, even at high temperatures and over a long period of time. Practically no volatile substances are released which could hinder sunlight and reduce efficiency.



AIR-CONDITIONING AND THERMAL TECHNOLOGY

Excellent sound absorption, a high degree of fire safety and fibre-free structure – these are the main advantages of Basotect when used for sound absorption in air-conditioning and ventilation systems. The inside walls of ventilator casings may also be lined with Basotect to reduce noise.

ELASTOPOR[®], ELASTOSHORE[®] GSPU

WE PROVIDE MORE SAFETY WITH
THE LATEST COATING FOR PIPELINES –
BOTH OFFSHORE AND ONSHORE.

Anti-corrosive protection for pipelines

District heating and cooling pipelines
Insulation for industrial pipelines (for dairies,
breweries, chemical companies)
Insulation for oil and gas pipelines
Pipe solutions

PERFECT PROTECTION AGAINST DAMAGE TO YOUR PIPELINES.

Above all, pipelines need to be absolutely safe – far beyond the norm. For years, BASF has been providing a variety of highly-sophisticated, detailed solutions, all proven even under extremely harsh conditions. This gives you the confidence that they function all the time, problem-free.

The performance spectrum of the state-of-the-art polyurethane systems Elastopor[®] and Elastoshore[®] that BASF is now able to offer the industrial sector comprises flexibility, durability, load-ability, thermal insulation and impact resistance.

More safety – less wear and tear.



DISTRICT HEATING AND COOLING PIPELINES

Through an intelligent mix of materials and application possibilities, BASF can successfully provide excellent thermal protection for both hot and cold applications in pipelines. A variety of PU solutions are available – from rotating injection to continuous belt facilities and the traditional pipe-to-pipe procedure.



INSULATION FOR INDUSTRIAL PIPELINES

High temperature resistance, long working life, good insulation properties and simple application are characteristics of all our systems. They are suitable for both rigid and flexible pipes, providing specific fire resistance as prescribed for use in the chemical industry, for example.



INSULATION FOR OIL AND GAS PIPELINES

Elastopor[®] for example sets standards in terms of insulation properties, temperature stability and strength in water as deep as 250 metres. BASF offers glass syntactic Elastoshore[®] systems (GSPU) especially for the difficult conditions met in very deep water – naturally these comprise BASF hg-free technology.



PIPE SOLUTIONS

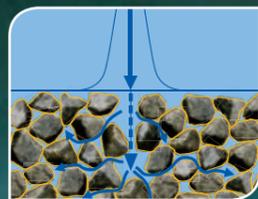
PU joint infill used for lay barges to protect welding seams in pipes, as well as elastomers for PIGS (pipeline inspection gauges), bend stiffeners or bend restrictors are further areas of application for BASF polyurethanes, which are safe and reliable even under extreme conditions.

Only two components are needed for a unique degree of protection for coastal dykes, shores and other areas of crisis.



COASTAL PROTECTION

Elastocoast® makes our coastlines safer. This PU system for permeable coating of covering layers in coastal areas stands up even to the strongest waves. The open-pore structure reduces the destructive force of high tides right from the start and the ecological effect is so great that plants and wildlife start to return shortly after application of the material.



Elastocoast covering layers efficiently absorbing the breakers.

Elastocoast is proven to be safe. This is confirmed by studies carried out at various universities and independent test institutes. The latest study by the Hygiene Institut des Ruhrgebiets in Gelsenkirchen on 2014 confirms that this material can be used without any hazard for humans, plants or animals.



RIVER BEDS

Just one hour curing time, increased safety for humans, more living space for plants and animals. Protection against floods and nature conservation combined. That's how river bed solidification using Elastocoast works. This system shows its true strength in applications like these – a covering layer that can stand up to floods.



PROTECTION AGAINST AVALANCHE

Products which do so well along the coast and in river beds also have a lot to offer for use in mountain areas. Effective protection against avalanche and rock fall is provided through the Elastocoast system as this material helps to keep the forces of nature on track to avoid danger.

Open-pore, stable, water permeable – completely new possibilities for surface application.



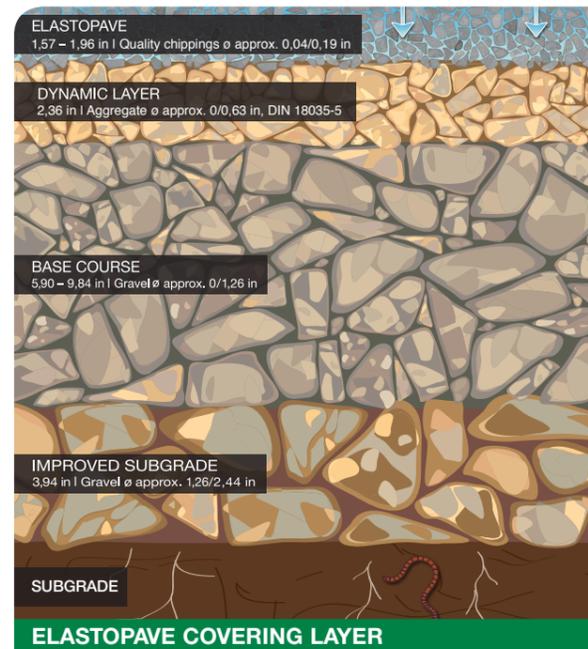
SQUARES AND PATHS

Elastopave® is a completely new concept for the construction of durable surfaces on squares and pathways. Aggregate is combined with a polyurethane binder, producing stable water and air permeable covering layers. Rain water seeps away easily without any additional drainage!



CAR PARKS

Stable and more environmentally compatible than conventional solutions, this material comprises integrated water management and optical flexibility. Wherever advantages in terms of cost, durability and sustainability are called for, Elastopave is the solution. It's easy to apply and offers a variety of design possibilities.



ELASTOPAVE COVERING LAYER



Applied as a covering layer, an aggregate mixture with polyurethane binder ensures that numerous cells are linked together so that rain water can seep through without any problem, thus contributing to ground water discharge. This covering is supported by several different aggregate layers to achieve optimal strength and drainage.

ELASTOPOR[®], ELASTOPIR[®], ELASTOSPRAY[®], WALLTITE[®], STYRODUR[®], NEOPOR[®]

WE CAN ENHANCE YOUR LIVING QUALITY THROUGH USING MULTIFUNCTIONAL INSULATION SYSTEMS.

Systems for roofs, walls and floors
Insulating boards, spray foam
Insulated brick slip systems (polyurethane)

Outdoor and indoor insulation, core insulation,
flat roof, pitched roof, attic,
ICF systems (EPS und XPS)

LIKE THIS, NEW AND OLD BUILDINGS CAN BE BROUGHT RIGHT UP-TO-DATE CONCERNING CLIMATE ASPECTS.

BASF provides a variety of intelligent products for perfect insulation. For various applications in the house building sector BASF offers, for example, the time-proven, super-functional allrounders Styrodur[®] und Neopor[®]. The Elastospray[®] system or insulating elements with flexible covering layers of Elastopor[®] and Elastopir[®] are especially suitable for pitched

roofs, flat roofs and floor insulation. The excellent mechanical properties of these systems also allow them to be applied in areas with heavy compressive stress such as parking levels, patios or green roofs. BASF sets standards wherever there's a need for durable, economical and at the same time efficient installation for insulation of walls, roofs and floors.



INSULATING BOARDS FOR WALLS AND FLOORS

PU insulating panels made of Elastopor[®] and Elastopir[®] are convincing due to their excellent thermal protection. They are compression-resistant, water-repellent and dimensionally stable and ideal for walls, floors and roofs, both for renovating older houses or building new ones. These materials leave no room for damp or mildew.



ROOF INSULATION

Elastopor H systems are a substantial component in multi-layer construction elements. In the house building sector, such insulating elements are particularly suitable in flexible sandwich layers for gap-free insulation of pitched or flat roofs. Advantage: Optimal insulation values for much thinner walls.



SPRAY FOAM

Spray foam systems like Elastospray[®] or Walltite[®] are applied directly to the substrate, forming an even, continuous insulation layer without joints or gaps to ensure the highest thermal performance free of heat buildup. This material is suitable for insulating floors and walls and for new or retrofit projects.



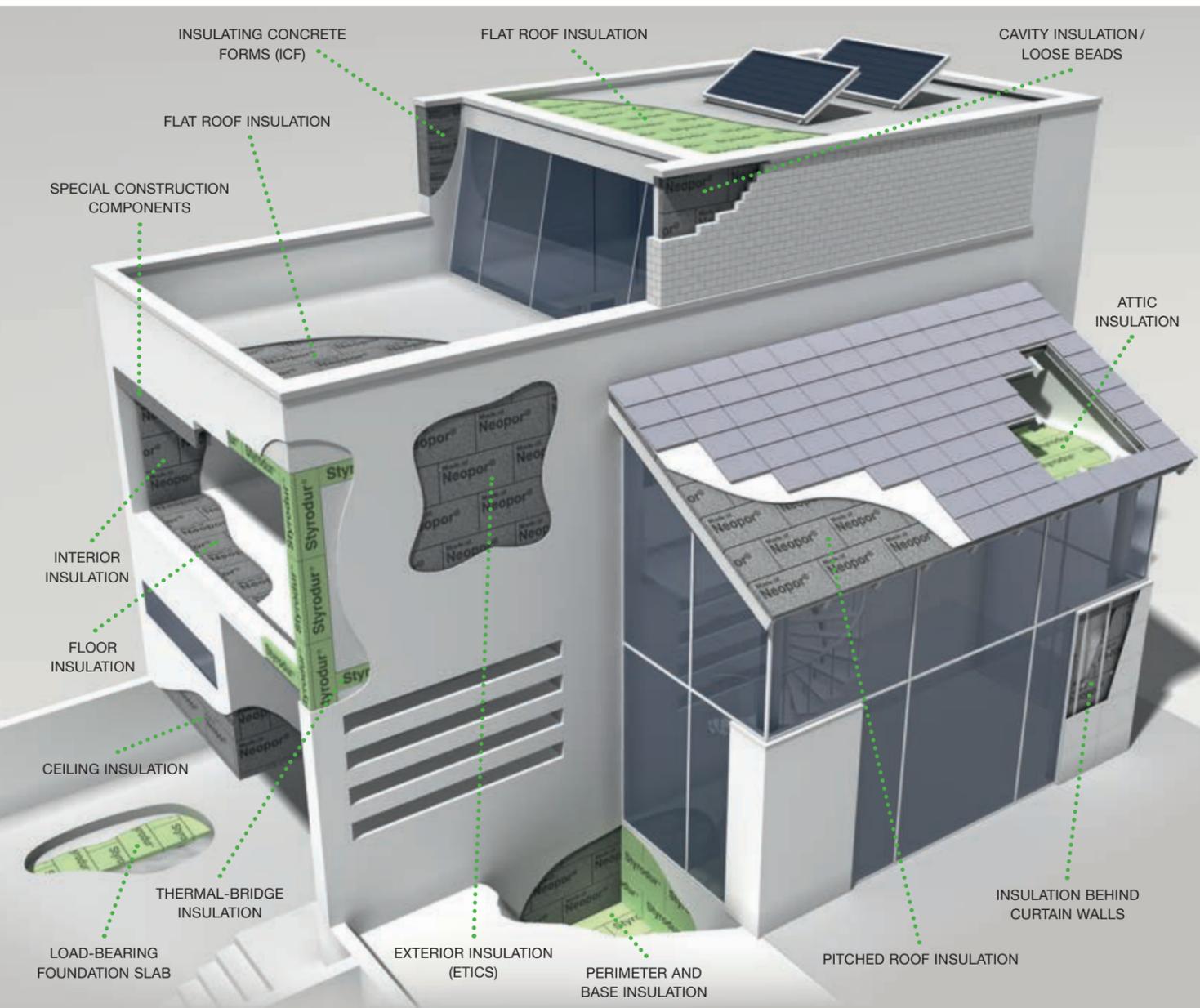
INSULATED BRICK SLIP SYSTEMS

Insulated brick slip boards are prefabricated assembly boards of genuine brick slip material with an Elastopor H rigid foam insulation layer. They are only a few centimetres thick, providing a very high insulation factor and can save up to 50 percent in heating costs. After mounting, there is no visible difference from a genuine brick facade.

Walltite currently available in limited regions only

STYRODUR®, NEOPOR®

High performance insulation for the entire building.



BASF has developed two proven insulating materials for eco-efficient solutions in new building construction and renovation of older buildings: Styrodur® and Neopor®.

These two foams are highly versatile in various insulation applications, contributing to energy savings in the building.

STYRODUR®, NEOPOR®



With Styrodur®, BASF are proud of the 50 years of experience in the XPS market (extruded polystyrene). This green insulation material excels through high quality, versatile uses and robust properties. Styrodur is the XPS product with the most approved and certified applications providing complete security for all planning processes.

Thanks to its extreme compressive strength and superior quality, Styrodur is the first insulation material to be approved by the DIBT (German Institute for Building Technology) for transferring horizontal stresses induced by seismic activity.

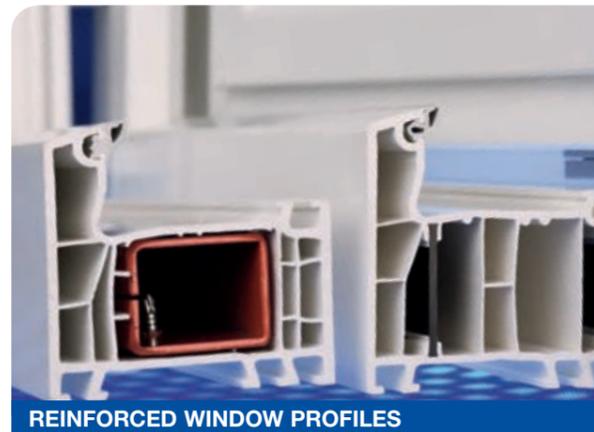


Neopor® is the innovative enhancement of the classic insulation material Styropor® and has already been a strong brand since 1998, with all the advantages of the original. Versatility in use, water-repellent, resistant to aging and rot, dimensionally stable – Neopor insulation materials provide improved insulation of up to 20 percent compared

to conventional EPS (expandable polystyrene) when compared to same thickness boards. So Neopor offers a strong contribution to sustainable construction which can be confirmed by a number of eco-efficiency analyses. Neopor is environmentally compatible, at the same time ensuring high-performance insulation.

ULTRADUR[®], ELASTOPOR[®]

Our materials are the premium choice for functional windows and roller shutters.



REINFORCED WINDOW PROFILES

By replacing classic steel reinforcements with well-positioned Ultradur[®] strips, the profiles achieve a reduction in heat loss of approximately 20 percent while maintaining all the mechanical characteristics. A 60 percent weight reduction promotes ease of assembly and construction.

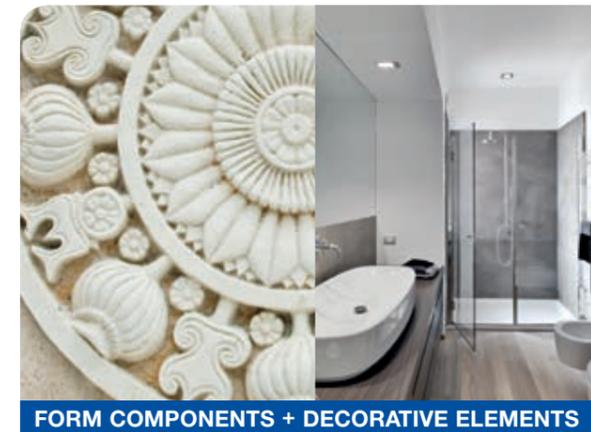


FOAM FILLED WINDOW PROFILES

Window profiles can be the sore point in the perfect insulation of buildings. In using Elastopor[®], thermal bridges and damp are a thing of the past. The insulation value increases without affecting the weight of the profile. The simple application of Elastopor allows a variety of foaming procedures for roller shutters and window profiles. Sealed frames outside with complete factory filled insulation on the inside. Shutter profiles and boxes with an interior like this make the insulation of buildings complete.

ELASTOCOAT[®], ULTRAFORM[®], ULTRADUR[®]

We have also developed materials for the sanitary sector that can stand up to anything.



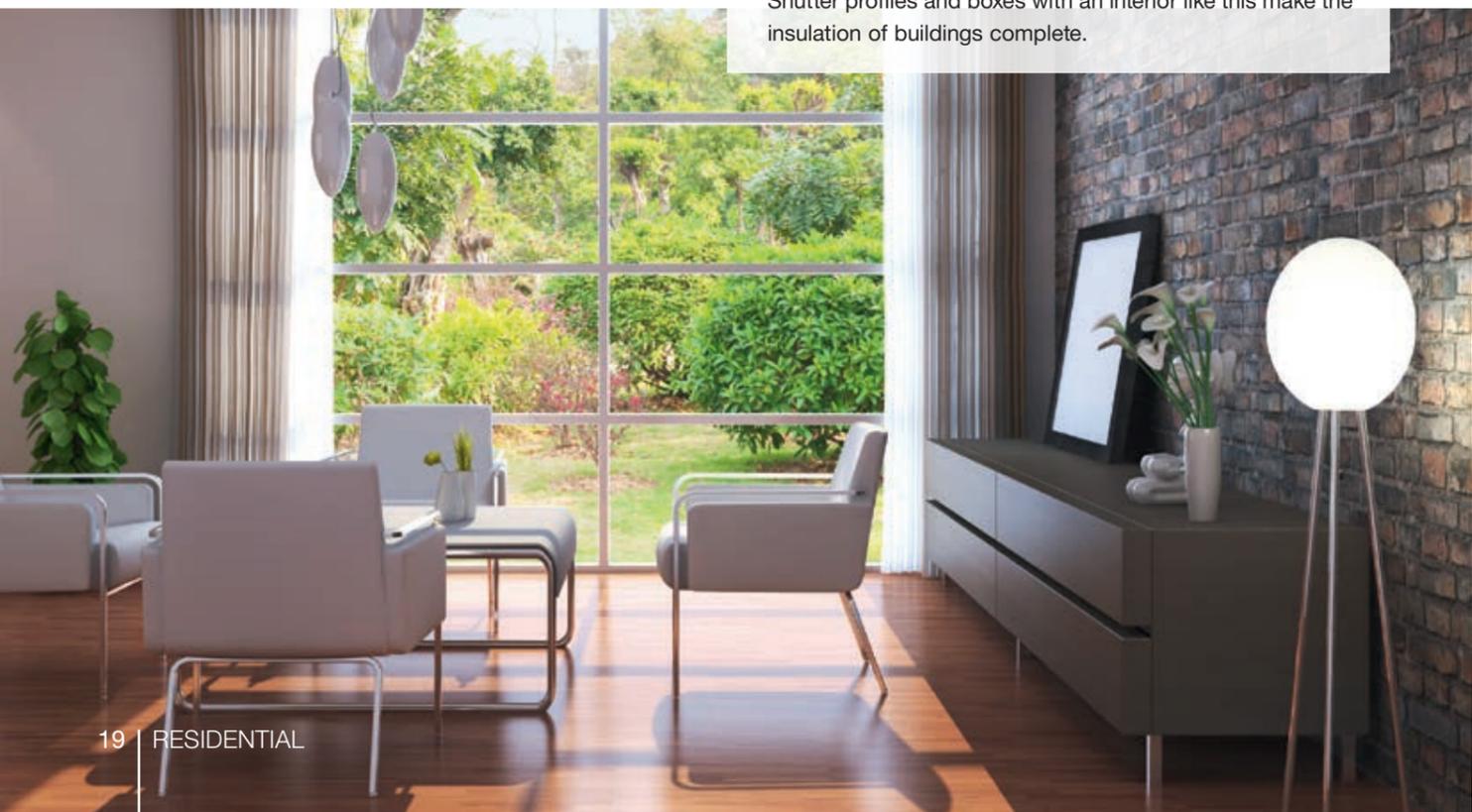
FORM COMPONENTS + DECORATIVE ELEMENTS

Elastocoat[®] is ideal for coating and reinforcing high-quality form components. The PU foam sprayed on the underside of these components can be applied very economically and offers optimal mechanical properties, perfect adhesion and flexibility of design.



TOILET FLUSHING SYSTEMS

Ultraform[®] comprises a high degree of strength and rigidity, good resilience properties, plus chemical stability and a long product life – ideal for the most varied areas of use. From water management in coffee machines to heavily-used components in the sanitary sector, such as toilets.



SHOWER SPRAYS

BASF is an important partner regarding household and leisure appliances, such as shower sprays. Whereas Ultraform invisibly ensures separated water flow on the inside, the spray jets on the outside are held in place with Ultradur[®], fulfilling the need for both a particularly low and a particularly high degree of adhesion.



ULTRAMID[®], ULTRASON[®]

You'll certainly find us wherever we can't be seen at first sight.



WATER METERS

Ultramid[®] is the perfect alternative to classic solutions for areas with high mechanical demands. Its toughness and durability and above all broad spectrum of possibilities to adapt to the complexity of an individual product makes this material a preferred choice for water meter covers.



FITTINGS

Ultrason[®] is an amorphous high-temperature thermoplast used for fittings with very high product life requirements. Ultrason S provides excellent hydrolytic stability even at high temperatures. In addition, Ultrason P has exceptionally high impact and stress crack resistance.

ULTRAMID[®], ELASTOLIT[®]

We can assure intelligent detail solutions through toughness, stability and simple application.



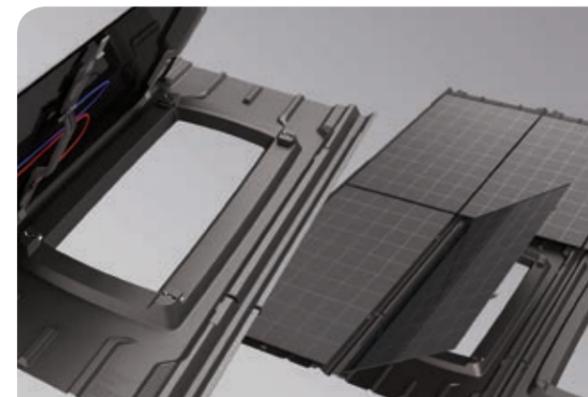
DOWELS

A newly-developed dowel made of Ultramid[®] is the first to be approved for use in cracked concrete, thus entering sectors previously reserved for steel anchors. Awnings, railings, gate systems or large facade elements will function safely when secured using Ultramid.



THERMAL BREAK CONNECTIONS

Thermal breaks made of Ultramid can replace metal components, which conduct far more heat or cold from the exterior directly into the building. This new system doesn't only save money for heating and cooling, it's also much easier to apply and therefore more cost-efficient.



ROOF APPLICATIONS/PHOTOVOLTAIC SYSTEMS

BASF can also offer their technical synthetics for solutions in photovoltaic and solar systems. They can be used for structure components, fixing elements, frames and sub-constructions, ensuring long product life, weather-resistance and first-class mechanical properties for the most varied applications.



IMITATION WOOD AND STONE

The hard integral PU system Elastolit[®] is excellent for form components indoors and outdoors. Through an optical appearance of wood or stone, it replaces conventional materials and excels through strength, hardness and dimensional stability. It's suitable for decorative elements, structural components, furniture elements or casings for technical equipment.

Customized climate management for the most sophisticated demands – with SLENTEX™ und SLENTITE®.

A high-performance insulation material for new construction and renovation of older buildings.

IN THE FUTURE OUR HIGH-PERFORMANCE INSULATION MATERIALS WILL SET COMPLETELY NEW STANDARDS.



This easy to use, non-combustible anorganic aerogel material is an innovation for extremely thin and highly efficient thermal insulation. With a lambda value of $<19 \text{ mW/m}\cdot\text{K}$, Slentex has a considerably lower heat conductivity than conventional insulation materials.

Historical facades, building elements like balconies, arbours or narrow entrances – Slentex can be applied flexibly where other insulation materials reach their limits. This high-performance insulation material opens up whole new areas of application for interior and exterior insulation as well as fulfilling high-energy requirements.

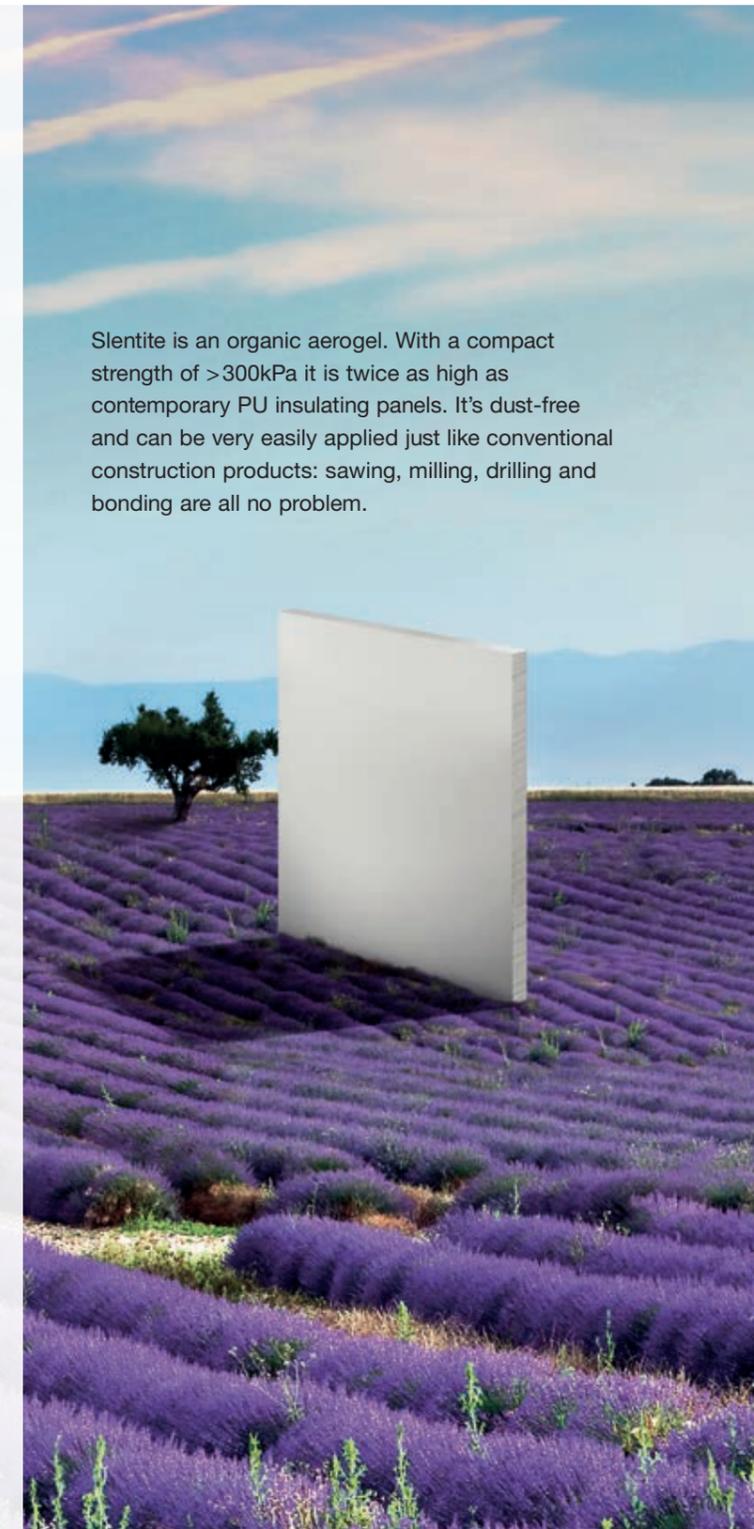


SLENTITE® SHOWS HOW THINGS WILL CONTINUE: A TOP-PERFORMANCE INSULATING BOARD FOR ALL CLIMATES.



Slentite is a unique high-capacity product which is coming onto the market in a few years. It will guarantee 25 to 50 percent slimmer insulation and excellent moisture control. The stable and robust panel offers a flexible scope of design.

With a lambda value of $<17 \text{ mW/m}\cdot\text{K}$, Slentite will achieve the best insulation performance for a ready-to-use panel. Today's standard insulation boards are in the area of $21 \text{ mW/m}\cdot\text{K}$ to $40 \text{ mW/m}\cdot\text{K}$ so Slentite is also extremely space-saving.



Slentite is an organic aerogel. With a compact strength of $>300\text{kPa}$ it is twice as high as contemporary PU insulating panels. It's dust-free and can be very easily applied just like conventional construction products: sawing, milling, drilling and bonding are all no problem.