

150 years



News Release

BAU 2015: BASF presents materials for energy efficient and sustainable construction

- **Master Builders Solutions® for the first time at BAU in Munich**
- **Customized climate management: the high-performance insulation materials Slentite® and Slentex™**
- **New solutions for surfaces and coastal protection: Elastopave® and Elastocoast®**
- **Advances in insulation material and long-term monitoring: Styrodur® 3000 CS and Neopor®**

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BASF showcases chemistry's contribution at the BAU trade fair from 19th to 24th of January 2015 in Munich. In hall A6 booth 303 the company presents numerous solutions including products to raise the energy efficiency of buildings. Other exhibits include materials to make buildings more durable resulting in reduced maintenance and repair.

For journalists BASF offers a presscafé on 20th of January 2015. At 4 pm in hall A6 booth 303 journalists will receive a briefing on the exhibits from our in-house experts. At the same time BASF will be presented with the DGNB Navigator Label for our MasterTop flooring products by Prof. Alexander Rudolphi, President of DGNB.

Master Builders Solutions®

In 2015 BASF will be presenting the new Master Builders Solutions brand for the first time at the BAU trade fair. Visitors get an

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impression of the comprehensive portfolio encompassing concrete admixtures, cement additives, chemical solutions for underground construction, waterproofing solutions, sealants, repair and protection solutions, performance grouts, and performance flooring solutions.

One of the highlights is Green Sense[®] Concrete technology for the resource-efficient production and processing of concrete. Available from BASF in Europe since 2014, Green Sense Concrete is a package allowing manufacturers to optimize the cost of concrete as well as features such as load bearing capacity, processing properties, service life and environmental compatibility. The package includes three components: the optimization of the concrete formulation by BASF experts, the use of high-performance concrete admixtures from the Master Builders Solutions brand, such as MasterGlenium, and a life cycle analysis for the concrete formulation. For example, with the help of Green Sense Concrete technology, it was possible to save in the region of 15,800 tonnes of CO₂ equivalents in the construction of the new One World Trade Center in New York City, USA, compared with a conventional concrete formulation.

The Master Builders Solutions experts from BASF are also presenting sustainable waterproofing solutions for complex industrial buildings and plants at the trade fair. For example the MasterSeal traffic systems which are ideal for new projects, rehabilitation work and the rapid refurbishment of parking spaces. For concrete repair and surface protection, BASF is presenting the MasterEmaco repair mortars and levelling compounds. The comprehensive solutions in this range are suitable for concrete damaged by extreme weather conditions. The MasterProtect range includes a number of high-performance waterproof and chemical-resistant coatings that withstand difficult weather conditions, contaminated environments and corrosive substances.

In the field of flooring systems and wall coverings, BASF will be presenting products from its MasterTop and Ucrete series: The functional and decorative MasterTop system solutions are extremely

strong, attractive and durable. The liquid-applied systems cure without any seams, creating a homogeneous surface that is strong and easy to clean; for applications in medical facilities, care and educational establishments, office and administrative buildings, shops, hotels and industrial facilities.

For decades, the Ucrete polyurethane concrete system has been setting standards as a high-strength industrial floor that is at the same time resistant to chemical, mechanical and thermal stresses. As these systems are non-tainting, Ucrete is ideal for use in food and beverage production as well as in the chemical and pharmaceutical industries.

Customized climate management: The high-performance insulation materials Slentite[®] and Slentex[™]

Slentite is a unique high-capacity product based on an organic PU aerogel. It guarantees to provide insulation that is 25 to 50 percent slimmer, excellent moisture regulation, stable, robust panels and a flexible scope of design. With a lambda value of $< 17 \text{ mW}/(\text{m}\cdot\text{K})$, Slentite achieves the best insulation performance so far for a fabricated panel. Today's standard insulation boards are in the region of $21 \text{ mW}/(\text{m}\cdot\text{K})$ to $40 \text{ mW}/(\text{m}\cdot\text{K})$, which means that Slentite is also extremely space-saving. With a compact strength of $> 300 \text{ kPa}$ it is twice as robust as contemporary PU insulation panels. It is dust-free and can be very easily applied: sawing, milling, drilling and bonding are no problem. A pilot plant is being installed in order to produce sample quantities of the innovative material for special partners in 2015.

Slentex is easy to use and a non-flammable inorganic aerogel. It is a significant innovation delivering extremely slim and highly efficient heat insulation. With a value of $< 19 \text{ mW}/(\text{m}\cdot\text{K})$, Slentex has a considerably lower heat conductivity than conventional non-flammable insulation material.

Building elements such as balconies, arbors, narrow entrances or even historical facades can be treated. As a flexible panel Slentex can be applied where other insulation materials reach their limits. This new high-performance insulation material opens up areas of application for building insulation as well as fulfilling high-energy and fire protection requirements. Slentex is currently in the last phase of development. The product launch is planned for 2015.

New solutions for surfaces and coastal protection: Elastopave® and Elastocoast®

Elastopave is a completely new concept for the construction of durable surfaces on squares and pathways. Mineral mixtures are combined with a polyurethane binder, producing stable water and air permeable covering layers. Rainwater seeps away easily without any additional drainage. Stable and more environmentally compatible than conventional solutions, easy to apply and offering a variety of design possibilities this material comprises integrated water management and a range of aesthetic options. Wherever the durability, cost and sustainable advantages of concrete are called for, Elastopave is the solution.

Revetments of Elastocoast provide a new, extremely effective coastal protection system. More precisely, they are formed from an aggregate (crushed rock) mechanically bonded with an environmentally compatible 2-component polyurethane plastic. This mixture is applied to previously prepared dikes, slopes, breakwaters and other sea- and freshwater shorelines. The outcome is a highly durable, strong and therefore secure bulwark against the waves and flooding.

Elastocoast makes our coastlines safer. This PU system stands up even to the strongest waves. Protection against floods and nature conservation combined – that is how river bed solidification using Elastocoast works. Products which perform 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 with the Elastocoast system as this material helps to keep the forces of nature on track to avoid danger.

**Advances in insulation material and long-term monitoring:
Styrodur® 3000 CS and Neopor®**

BASF is enlarging its portfolio of Styrodur branded extruded polystyrene rigid foam panels (XPS) with a new product: Styrodur 3000 CS has the same thermal conductivity of 33 mW/(m·K) across all panel thicknesses from 30 to 240 mm. The thermal conductivity of the insulation panels is up to 15 percent better than standard Styrodur grades.

The new production technology involves joining together several thinner panels with excellent technical properties. This now means panels with a thickness of more than 140 mm can be manufactured with improved thermal conductivity.

BASF's innovative expandable polystyrene (EPS) Neopor contains graphite. This results in insulation performance that is up to 20 percent better than conventional EPS. Insulation materials made from Neopor can be used in wall, roof and interior insulation. Neopor's high performance results in lower energy usage and lower CO₂ emissions. Insulation boards made of Neopor were used in the renovation of the Brunck Quarter in Ludwigshafen, Germany. The average fuel consumption of the buildings is now 5 l/m² a year. This has led to a 70 to 80 percent reduction in CO₂ emissions.

A study examining the renovation of the Brunck Quarter proves the profitability and short amortization of energy efficient measures as well as a very high satisfaction of residents. The thermal insulation system incorporating Neopor continues to provide excellent performance after more than ten years.

About BASF

At BASF, we create chemistry – and have been doing so for 150 years. Our portfolio ranges from chemicals, plastics, performance products and crop protection products to oil and gas. As the world's leading chemical company, we combine economic success with environmental protection and social responsibility. Through science and innovation, we enable our customers in nearly every industry to meet the current and future needs of society. Our products and solutions contribute to conserving resources, ensuring nutrition and improving quality of life. We have summed up this contribution in our corporate purpose: We create chemistry for a sustainable future. BASF had sales of about €74 billion in 2013 and over 112,000 employees as of the end of the year. BASF shares are traded on the stock exchanges in Frankfurt (BAS), London (BFA) and Zurich (AN). Further information on BASF is available on the Internet at www.basf.com.

About BASF and the construction industry

The construction industry is one of BASF's key customer industries. In 2013, BASF's sales to the construction industry totaled around €4.7 billion, representing approximately 6% of BASF Group sales. As a leading provider of raw materials, systems and finished products to the construction industry, BASF provides economically and ecologically sound solutions that facilitate high-quality construction. BASF materials and solutions increase resource and energy efficiency and improve building life expectancy, thus also lowering expenditure on maintenance and repairs. BASF offers a broad portfolio of building materials used directly on construction sites or integrated into other products. The product range includes for example insulation materials, concrete admixtures, products for the repair of concrete structures, sealants, flooring systems and decorative paints. Further information on BASF's solutions for the construction industry is available at www.construction.basf.com.