

News Release

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BASF at BAU 2019 – Novel High-Performance Insulation Presented in First Carbon Concrete Composite Facade Elements

- **SLENTEX®: Non-combustible and flexible insulation mat**
- **SLENTITE®: Slim and heavy-duty insulation panel**

BASF is presenting its high-performance insulation materials in a new application at the world's flagship fair for architecture, materials and systems in Munich from January 14 to 19, 2019. The innovative high-performance products SLENTITE® and SLENTEX® are a new generation of super-slim aerogel-based insulation materials with outstanding material properties. BASF is presenting its first examples of applications in carbon concrete composite facade elements in a single-family house.

Slim concrete facades for residential cube using SLENTITE® and SLENTEX®

Combining new materials with renewable energy sources is the secret of success of housing of the future. Currently under construction in Leipzig is a modern, cube-shaped single-family house that puts this principle into practice. In a central location, the three-story building is being erected with a hybrid load-bearing structure of carbon concrete composite (C³) and reinforced concrete. The exterior exposed concrete shell is a highly durable precast C³ element 4 cm thick, while the inner shell, also of precast C³, is 6 cm thick. To achieve an extra-slim wall construction, the new SLENTITE® and SLENTEX® high-performance materials can be used for

the insulation between them, reducing the wall thickness in the non-load-bearing core by 50 percent over conventional insulation materials. For the overall facade element construction, this means a thickness of 18 centimeters for a KfW 55 standard wall with $0.21 \text{ W/m}^2 \cdot \text{K}$. Slimming down the exterior wall significantly facilitates not only new aesthetic approaches, but also a gain in space, which is becoming increasingly precious in inner-city building. In addition, the two high-performance insulation materials can be integrated in the automated production of the elements in the precast concrete plant without further system adjustments. This is a feature offered solely by these high-performance insulants, as confirmed by Alexander Kahnt, chief architect and research associate at Leipzig University of Applied Sciences (HTWK): “Owing to their outstanding insulation performance, SLENTITE and SLENTEX are ideal for the production of slim precast element walls.” Listen to the talk on this subject in the FORUM Zukunft Bau (Booth No. 202) on 14.01.19 at 5.20 pm.

High-performance insulation in flat roofs

Owing to its slim profile, SLENTITE® is excellently suited to applications where conventional insulation materials reveal their limitations. To create same-level transitions such as between an interior room and a roof terrace or in openings for windows or doors, SLENTITE panels are the only feasible choice. Around elements installed in exterior walls such as roller shutter boxes or in radiator recesses, the novel insulation material also prevents thermal bridges as it is only half as thick as conventional materials. Thresholds leading onto flat roofs can be executed without changes in levels, and projections in the insulation plane due to construction joints can be overcome without difficulty. In the single-family house in Leipzig, the roof terrace is being executed with a layer of SLENTITE® insulation. This permits a same-level transition without modification of the load-bearing structure – another milestone in the implementation of energy-efficient strategies in the construction sector.

SLENTITE® – the slim panel for all climates

SLENTITE® is the first purely polyurethane-based aerogel ever to be produced. The heavy-duty aerogel insulation panel, which consists of 90 percent air and is breathable, permits insulation up to 50 percent slimmer than conventional materials – for maximum efficiency combined with high aesthetics. As a pioneering high-

performance insulation material, its open-porous structure creates a pleasant interior climate and helps to cut energy costs. Its outstanding insulation performance ($\lambda = 18 \text{ mW/m} \cdot \text{K}$) is coupled with excellent processing qualities. The clean, dust-free panels can be easily cut to size on site and applied directly to walls or coated beforehand. “Thanks to this unparalleled combination of product features, SLENTITE® enables space-saving insulation solutions in both new builds and energy upgrades,” explains Dr. Marc Fricke, Project Management and Marketing SLENTITE® at BASF.

SLENTEX® – flexible and efficient insulation

SLENTEX® is an easy-to-process and non-combustible material based entirely on mineral raw materials. As a single-layer, flexible mat, it is now available for a variety of applications in the construction and modernization sectors.

SLENTEX® is a highly efficient and extra-slim insulation mat. With a λ_D value of $19 \text{ mW/m} \cdot \text{K}$, the material achieves much lower thermal conductivity than conventional mineral insulation materials and permits the construction of very slim wall constructions. Beneficially, the material is non-combustible, has an A2-s1, d0 fire class, and is ETA-certified. SLENTEX® permits the diffusion of water vapor ($\mu \sim 5$) while also being hydrophobic, thus making it ideal for facade applications. “Thanks to its flexibility, the insulation material adapts very well to different building geometries and meets high energy standards at the same time,” says Dr. Wibke Lölsberg, Project Management and Marketing High-Performance Insulation Materials at BASF.

Visit us at BAU 2019 at Booth 212, Hall B0; Research for the Future, Booth 210, Hall B0; talk at the FORUM Zukunft Bau, Booth No. 202, 14.01.2019 at 5:20 pm.

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About BASF's Performance Materials Division

BASF's Performance Materials division encompasses the entire materials knowhow of BASF regarding innovative, customized plastics under one roof. Globally active in four major industry sectors – transportation, construction, industrial applications and consumer goods – the division has a strong portfolio of products and services combined with a deep understanding of application-oriented system solutions. Key drivers of profitability and growth are our close collaboration with customers and a clear focus on solutions. Strong capabilities in R&D provide the basis to develop innovative products and applications. In 2017, the Performance Materials division achieved global sales of €7.7 bn.

About BASF

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. The more than 115,000 employees in the BASF Group work on contributing to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio is organized into six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. BASF generated sales of more than €60 billion in 2017. BASF shares are traded on the stock exchanges in Frankfurt (BAS), London (BFA) and Zurich (BAS). Further information at www.basf.com.