

**Innovative, lean, modular,  
recyclable, non-combustible –  
a modern facade can be all of that**



**CALOSTAT®**

 **EVONIK**  
Leading Beyond Chemistry

# WHEN DREES & SOMMER BUILDS A NEW OFFICE BUILDING FOR ITSELF, ONLY THE MOST PROMISING, FORWARD-LOOKING TECHNOLOGIES WILL DO.

Supported by the expertise of its customers and partners, the company is constructing a net-positive energy building in Stuttgart-Vaihingen using highly innovative materials. The facade shows what all is possible today.

.....

**Project:**

New office building, Obere Waldplätze 12, Stuttgart, Germany

**Construction firm:**

FKN Group

**Customer product:**

e-coFACE, with CALOSTAT® Pure as insulating material

**Builder:**

Drees & Sommer

**Architect:**

SCD Architekten Ingenieure GmbH

**Project duration:**

07/2017 – 12/2021

**Site:**

Stuttgart-Vaihingen

.....

The characteristics of the facade modules sound like they're straight out of a catalog of specifications for modern planners and architects: innovative, lean, high thermal insulation capacity, modular, recyclable, emission-free, non-combustible. But these – and more – are precisely the features of the facade of the new office building that consulting, planning and project management firm Drees & Sommer is building for itself at its headquarters. While that combination may not yet be a given everywhere, the facade experts at FKN already have a finished product that can be mass-produced: e-coFACE.

Highly energy-efficient buildings are a key element of Germany's energy transition, and e-coFACE is leading the way in exterior insulation development. Apart from fire safety and sustainability, the most important issue for builders and investors is the insulation performance of the facade. The use of CALOSTAT® Pure as an insulator in combination with vacuum insulation panels (VIPs) lends facades outstanding insulation values and excellent fire protection while remaining very thin. The panel area of the facade that was developed has an insulation depth of 9 cm, with which it achieves a U<sub>cw</sub> value of 0.4 to 0.5 W/m<sup>2</sup>K – a range corresponding to the insulating power of a traditional building exterior 40–50 cm thick made



*The facade modules are prefabricated, making it easy for site workers to incorporate them into the building*

Photo: Evonik/F. Gmach



*Franz Ebert of FKN points out the slim design – just 90 mm of the actual facade* Foto: Evonik/F. Gmach



*During normal operations, the positive energy building generates more energy than it consumes*

*Rendering; SCD Architekten Ingenieure GmbH*

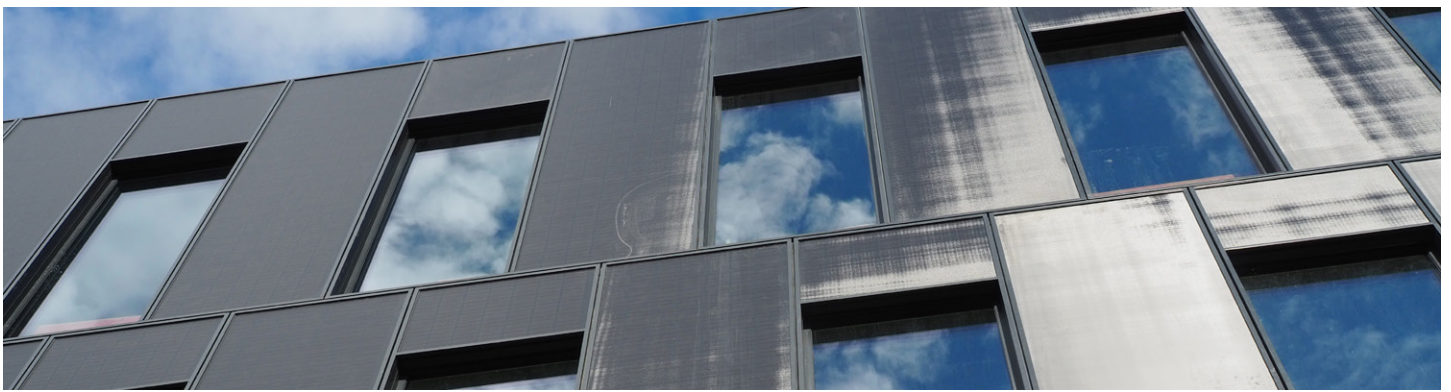
**MORE INFORMATION**

**Drees & Sommer project page**

<https://www.dreeso.com/de/projekte/details/neubau-buerogebaeude-obere-waldplaetze-12-stuttgart>

**e-coFACE facade from FKN**

<https://www.fkn-gruppe.de/leistungen/e-coface.html>



*Because the insulation is so thin, it left room for easily integrating solar panels into the facade Photo: Drees & Sommer*

of masonry and mineral wool. FKN also has a comparable exterior panel with no VIP, which has already been given general approval as a qualified construction material (approval No. Z-23.11-2099).

That won over Thomas Berner, the OWP12 project manager for Drees & Sommer: "The e-coFACE facade gives builders up to 8% more floor space in projects like these. When they compare the cost of the facade to the extra square footage you gain, investors immediately see the benefit they stand to gain when they sell or rent the property. The economics are extremely favorable." Potential for the module with CALOSTAT® at its core is substantial, especially in metropolitan areas, where space is scarce and expensive.

The overall design and planning of the new office space is remarkable too, however: the hybrid energy supply system combines geothermal and air-sourced heat pumps with solar panels on the roof and in the facade elements. Cradle-to-cradle concepts were brought to bear for all components, while pre-modularized components, digitally planned with LCM and BIM, enable an efficient design. Frank Gmach, marketing manager for Thermal Insulation at Creavis, Evonik's strategic innovation unit,

made the following observation when visiting a construction site: "CALOSTAT®, a non-combustible, recyclable insulating material developed by Evonik, is a super-insulation material (SIM) as defined in Annex 65 of the Energy in Buildings and Communities program of the International Energy Agency. We make the product in Hanau and are poised to revolutionize the market."

Like the core of a VIP, CALOSTAT® primarily consists of silicon dioxide, which, in the microporous form used, is a very poor conductor of heat – it insulates very well, in other words. The lambda design value of CALOSTAT® Pure is just 0.020. Although it does not absorb liquid water, the material allows water vapor to diffuse. It is also non-combustible (A2-s1, d0).

As Gmach goes on to say, "In the e-coFACE facade element, this non-combustibility is what helps the VIP achieve the desired service life and plays a major role in fire safety. We're proud of the important contribution that CALOSTAT® makes in this one-of-a-kind project, which so forcefully demonstrates many technologies of the future." The facade modules are pre-fabricated, making it easy for site workers to incorporate them into the building.

#### **EVONIK OPERATIONS GMBH**

Thermal Insulation  
Rodenbacher Chaussee 4  
Building 885  
63457 Hanau-Wolfgang  
Germany  
Phone +49 6181 59-5200  
Fax +49 6181 59-75200  
[calostat@evonik.com](mailto:calostat@evonik.com)  
[www.calostat.com](http://www.calostat.com)

This information and any recommendations, technical or otherwise, are presented in good faith and believed to be correct as of the date prepared. Recipients of this information and recommendations must make their own determination as to its suitability for their purposes. In no event shall Evonik assume liability for damages or losses of any kind or nature that result from the use of or reliance upon this information and recommendations. EVONIK EXPRESSLY DISCLAIMS ANY REPRESENTATIONS AND WARRANTIES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS, NON-INFRINGEMENT, MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE (EVEN IF EVONIK IS AWARE OF SUCH PURPOSE) WITH RESPECT TO ANY INFORMATION AND RECOMMENDATIONS PROVIDED. Reference to any trade names used by other companies is neither a recommendation nor an endorsement of the corresponding product, and does not imply that similar products could not be used. Evonik reserves the right to make any changes to the information and/or recommendations at any time, without prior or subsequent notice.

CALOSTAT® is a registered trademark of **EVONIK INDUSTRIES AG** or one of its subsidiaries.

CAL-388-2-OCT21-RAU