Highly efficient in Detail
How an over 60 years old house in Augsburg became an energy pioneer
At first glance, it is difficult to see what makes this semi-detached house special. But yet it has something entirely new inside: renovating and insulating the attic made this residential home the first to have dormers insulated with CALOSTAT®. “There’s no better or more modern way of insulating a dormer,” says a satisfied Armin Haas, the architect and energy consultant who advised the owners during this extensive renovation.

The one-and-a-half story house was built in the 1950s and has been renovated and expanded again and again over time. But now it was time to renovate the entire home. The electrical system was redone, as were the plumbing and bathroom, and the roof was retiled and insulated. A new, efficient furnace and a ventilation system with a heat-recovery feature also help save energy. As energy expert Haas explains, “We worked with an eye to quality and ecology. We insulated the roof with wood-fiber insulation boards and mineral wool between the rafters.” The sides of the dormer did not leave much room, so the team was initially planning to use polyurethane as the insulating material, as that would deliver the KfW’s required U-value of at least 0.2 W/m²K. That’s when Andreas Haas—like-wise an architect and employed in his father’s firm—came across CALOSTAT® from Evonik. Thanks to its outstanding insulating properties, two layers of CALOSTAT® Sandwich MW-F 50 are enough to achieve the required U-value.

**Property description:**
One-and-a-half story, semidetached home in an Augsburg residential area

**Year built:** 1954

**Renovated:** 2019

**Updates:** Dormer walls insulated with CALOSTAT® Sandwich MW-F 50 to meet KfW bank requirements

**Construction firm:**
Holzbau Hillebrand, Gersthofen, Germany

**Architects and energy consultants:**
Architecture office Haas, Gersthofen, Germany
According to Andreas Haas, “In terms of the insulation value, that put us in an even better position than PU boards would have. We especially liked how efficient the material is, and how sustainable it is too. A mineral-based insulating material that can be recycled—that’s awesome.”

The multiple award-winning material is delivered on pallets, and a single pallet with 19 100 x 60 cm insulating boards was all that was needed for the two dormers of the semidetached house. The Holzbau Hillebrand team from Gersthofen, Germany, processed the boards at the construction site, cutting them using just a jigsaw with a serrated blade. The boards are easy to handle. “If you’re careful about the seam between the CALOSTAT® and the top layer of mineral wool, you could pretty easily make smaller cuts too,” observed Hubert Zerrle, carpenter at Hillebrand. “It’s really ideal for spots that are hard to insulate.”

In many cases, dormers tend to be a part of a building that poses a particular challenge for insulation, with architects finding themselves facing a dilemma: if you use good insulation with the same insulation value as the roof, you lose a lot of space—space that the dormer was meant to create in the first place. Thick insulation would also significantly reduce the amount of light coming in, making dormers the perfect place for high-performance insulating materials.

CALOSTAT® delivers another advantage as well: unlike those of other insulating materials, the insulating properties of CALOSTAT® are not temperature-dependent—and that can go a long way toward protecting against summer heat, especially in an attic that receives considerable direct sunlight and heats up accordingly.

For the owners of the home in Germany’s sunny southwest, that was another argument in favor of CALOSTAT®. They are pleased with the trim, sustainable insulation in their dormer—and with their lovely, energy-saving home, whose external appearance could be maintained without sacrificing any space inside.
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