



Basotect[®] solar collectors by Viessmann

Case Study

BASF specialty foam in solar collectors from the heating technology company Viessmann

The international heating systems manufacturer Viessmann, Germany, now uses Basotect[®] to insulate its solar collectors. The light, flame-retardant melamine resin foam produced by BASF is fitted to the side walls and the rear of flat-plate collectors. Flat-plate collectors capture solar radiation and convert it into heat. Basotect[®] shows good insulation properties over a long period, even when exposed to high temperatures. It positively influences the air exchange in the collector at different climatic conditions. And in contrast to conventional insulation materials, the BASF melamine resin foam can be cut into different forms. A Viessmann solar combi-system with flat-plate collector was pronounced test winner by the German consumer organization "Stiftung Warentest" in March 2009, with a rating of "good".

Long-term heat management

For collectors to absorb as much sunlight as possible throughout their entire service life, durable and heat-retardant materials are necessary. Basotect[®] releases practically no volatile substances that could obstruct solar radiation, e. g. as fogging behind the glass panels of the collectors, and hence reduce the efficiency of the solar system. Because of its good thermal conductivity of $< 0.035 \text{ W/m}\cdot\text{K}$ and the intelligent shaping of the insulating pieces, Basotect[®] is able to achieve the same insulating performance as mineral wool, but with less material usage. Basotect[®] makes collector installation easier: It is flexible, fiber-free, and can easily be cut to the contours required.

"With the BASF specialty foam, we have found a material that improves the quality of our flat-plate collectors and, at the same time, makes it easier for us to manufacture them", says Sigurd von Wenzler, project leader for solar technology at Viessmann. "Compared to the previous standards, we have further increased the efficiency of our new generation of collectors, thanks to Basotect[®]. This means that we are able to offer our customers systems that are of greater interest from an economic point of view."

Energy savings with flat-plate collectors

Flat-plate collectors consist principally of a safety glass panel, an absorber (usually a selectively coated metal sheet) and metal piping, through which an anti-freeze fluid flows. When sunlight shines through the glass panel onto the absorber, the absorber transforms the radiation into heat and delivers it to the fluid in the pipes. From there, the heat is transported into the hot water circuit of the house. If the solar collector system is complemented by a heating supplement, house owners can save up to 30% of the annual cost of conventional fuel for the heating of the house.

