Polybutene
Piping Systems Association

Case Study

Finkenstein Solar Village, AT

Thermaflex I Flexalen

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The innovative solar village in Finkenstein Austria represents a milestone in ecological housing development. The solar village is one of the first examples of a total design concept for semi-detached domestic housing to be built around maximizing the benefits of solar energy. PBPSA member Thermaflex-Flexalen supplied pre-insulated Polybutene-1 piping for the hot and cold water supply for 6 housing units.

Ground breaking design built specifically for solar energy

In keeping with the building design options to optimize the structures for best utilzation of solar energy infrastructure the roof design is no longer a standard flat angled roof design with panels attached. Instead, the roof dimensions, aspect and aesthetics were predicated around each solar panel matrix as the primary integrated roof surface showing the way for future solar roof design in a broad array of building types.

The solar roofs in the village structures generate their own CO_2-free energy, which means that the owners of a house in the solar village take an important step towards zero energy living.

Finkenstein Solar Village, AT

Maximum use is made of the potential solar energy available and energy losses are reduced to a minimum. Apart from having a significant effect on lowering running costs, this also protects the environment with a lower carbon footprint. That's something that everyone can agree with.

In mid-June of 2012 at the commencement of the Finkenstein construction, the Solar Village builders used the project as an eco-apprenticeship site. The site became a receptive platform for apprentices from all participating trades to introduce themselves and demonstrate their skills to the industry and public while experiencing a sustainable building trend that is expected to be the catalyst for many similar developments in the years to come. The structural work on the first four apprentice houses was completed by the end of October 2012.

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Energy efficient hot and cold water supply

In connection with the eco-apprenticeship site, PBPSA member Thermaflex-Flexalen supplied technical insulation and pre-insulated Polybutene-1 piping for the hot and cold water supply for 6 housing units. Pre-insulated PB-1 piping systems are specified for heating and cooling networks because of their flexibility, thermal efficiency and life expectancy at high temperatures of up to 95°C.

Increased energy efficiency and improved sustainability is a key part of the Thermaflex product innovation over recent years with insulated PB-1 piping products for high efficiency district energy programs from solar energy and industrial sources which would otherwise be untapped. The thermal characteristics of Polybutene-1 (also known as Polybutylene and PB-1) ensure the minimum loss of heat through the network compared to other materials to deliver the heat where it counts.

The Thermaflex corporate vision is "To minimize energy losses and maximize the use of renewable energies." It states "Existing and developing societies are in need of sustainable solutions for energy and water. Together with our stakeholders, we help build systems for future generations. In everything we do, we are inspired by nature. As it is always systemic, smart and efficient in its solutions." This operating philosophy is perfectly aligned with the know-how of modern housing construction and has been demonstrated to full effect in Austria's Finkenstein Solar Village.

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