Insulation of hot water tanks with Basotect®

Case Study

Hot water tanks can benefit from the energy-efficient potential of BASF's versatile foam Basotect®. The melamine resin foam is increasingly being used as external insulation for tanks made of stainless steel holding up to 500 l of water. A key factor for this application is the foam's low thermal conductivity of less than 0.035 W / (m·K) and the resulting excellent thermal insulation. So energy losses can be reduced in the production of hot process water. Another advantage over conventional insulation materials is the BASF material's excellent resistance to temperatures of up to 240 °C and its flame retardance (in Germany: B1 according to DIN 4102).

The lightweight Basotect® material is cut into wedges and clad with a polystyrene jacket. Thus, flexible insulation shells with all the necessary connection details are produced. With this new system technology the insulation panels completely rest on the wall of the water tank, reducing the chimney effects typical of conventional half-shell insulation and lowering energy losses. Since the thickness of the flexible foam panels can vary between 50 and 115 mm, the material offers considerable design freedom for fitting different water tanks. It also gives the option of subsequent assembly. In addition, Basotect® makes processing and installation easier: it is flexible, fiber-free and can be cut with dimensional accuracy to fit the shape of the tank.

With this combination of properties, Basotect® shows its advantages particularly if the hot water tank is part of a solar thermal system. Because the foam is also suitable for insulating the solar collectors on the roof and the heat transfer pipes, it can considerably increase the efficiency of solar thermal systems.