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Heat-insulating filling for hot-water tanks

With an underground hot-water tank being brought to a temperature of 95ºC, the insulating material must fall in line with high requirements. "Poraver", a brand product from Dennert Poraver, meets these demands and offers good thermal insulation as well. Due to the fact that this expanded glass granulate is also particularly compression-stable, it protects the underground tank adequately moreover against loads on the surface. For these reasons, the professionals at the company of Kiechle Spenglerei Sanitaer Heizung in Pfronten decided on the insulating filling from Poraver. The in-house hot-water tank supplies all the heat required for the heating and drinking water for the residential building and business enterprise. A highly heat-insulating, loose "Poraver" filling all around the underground tank ensures there is only slight energy loss. Apart from heat insulation, "Poraver" is also used, because it can withstand considerable pressure, since the tank is located under a yard entrance and must put up with loads from suppliers' delivery lorries. This insulating filling comprises 2 – 3 mm large Poraver balls manufactured by Dennert Poraver. "The thermally highly-loadable filling material also enables the cost savings resultant from the self-generated heat for the business operation to be secured for the long haul," explains Bernd Kiechle, owner of the company of Kiechle Spenglerei Sanitaer Heizung. The high compression stability of "Poraver" is for Kiechle another reason for using Poraver. "Our suppliers can drive along the way leading over the tank in their lorries without causing any problems whatsoever – no other form of insulation can take care of that." The company's hot-water tank takes some 40 cubic metres of water that is ecologically heated by a 130 square metre thermal solar plant. "Poraver" is also environmentally viable, for it does not consume any raw materials in its production. "Poraver" is made entirely of scrap glass, only fine glass splitters being used which cannot be further processed by the glass industry for technical reasons. The glass is ground to a fine powder and expanded at 900º C in a cylin-drical rotating kiln. The upshot is a finely-pored round granulate in granular sizes from 0.04 to 16 mm ready for sorting. "Poraver" is not only an ideal material for fillings. It offers a host of application possibilities and is also used in building materials, for example, as an aggregate in monolithic wall systems and masonry plasters, as well as in the automotive and chemicals industries, and sewage engineering.

"Poraver" is made entirely of scrap glass

A highly heat-insulating filling with Poraver ensures there is hardly any energy loss in a hot-water tank installed underground in the yard of a trade business in Pfronten.

Photograph by courtesy: Dennert Poraver

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New young talent sports ground for Hertha BSC Berlin

Hertha BSC Berlin has built a new sports ground for its young talent close to the Olympic Stadium by the prefabricated construction method.
This sports ground handed over at the end of July was also constructed with the monolithic wall system "Poraform".

Hertha BSC Berlin has built a new sports ground that will take 4,500 spectators. The special aspect of this project that has not met with much appreciation by the public hitherto – "It is the first small stadium built completely by the prefabricated construction method," explains Dieter Hoeness, chairman of management at Bertha BSC Berlin. The building execution of the spectators' stand and the functional building was a matter for the Berlin branch of Otto Quast Fertigbau Sachsen. Integrated into the stand that was made with normal-weight concrete is a building which houses a total of eight changing rooms for the players, rooms for referees, trainers, security and management as well as technical and storage rooms for sports equipment on an area of some 1,100 square metres. A kiosk is added. The exterior walls of this building were made with the monolithic wall system "Poraform".

Football pros put their trust in "Poraver"

Decisive for the application of "Poraform" were the special heat-insulating properties of the prefabricated wall system combined with its short construction times – two factors that enabled the client Hertha BCS Berlin to cut down on costs. The "Poraform" walls used in a wall thickness of 31.5 cm have a U value of approx. 0.39 W/m2K, which facilitated observance of the low-energy standard without insulating agents. With "Poraform", the energy-saving potential is felt practically from the first day on, since the wall system is delivered to the construction site already largely in a dry condition. This does away with protracted drying-out periods, the optimum heat insulation value being attained after a short time. This is not a matter of course, for other materials, such as, for example, light-weight concrete, have a high moisture content to begin with that reduces the heat insulation. Optimum heat insulation of light-weight concrete is successively attained once the material has dried out in the course of several years. With "Poraform", you start saving on energy much earlier, thus going easy on the environment and on your wallet. What is more, the low water absorption and rapid release of the "Poraform" walls make for fast moisture exchange, condensation forming and perspiration water on the wall (laundry climate) being thus precluded. Swift construction progress is made by the "Poraform" walls together with well-fitting window and door recesses being industrially pre-fabricated and assembled.

Shuttering, slotting or mortising on site are a thing of the past, for the most important installations such as empty electrical ducts, recesses or breakthroughs are integrated ex works according to the plan. The pre-fabricated wall system being planned and prefabricated means the time for wage-intensive carcass building on the construction site is shortened. The "Poraform" wall system's beneficial properties emanate from the principal constituent – the expanded glass granulate "Poraver". For its production, recycled glass is ground to fine dust, prepared, granulated and at 900ºC expanded to form small, light-weight and cream-white balls. It is manufactured in a patented process by Dennert Poraver based in Schlüsselfeld in Franconia. The feather-light "Poraver" balls not only insulate outstandingly, they are also durable with a number of benefits for a healthy living environment: They are fungus and pest-resistant, non-allergic, non-combustible, frost-resistant and extremely sound-absorbing, thus being an ideal aggregate for the "Poraform" wall system. Due to the fact that "Poraform" comprises 100 % recycled glass, natural resources are also conserved. For Hertha BSC Berlin, this new stadium is one constituent to round off the terrain that the club was presented by the Berlin Senate for their use. And it will be a significant module for the football world championship in 2006. It is to serve as a training ground for the teams playing their games in the Olympic Stadium.

The first smaller stadium by the prefabricated construction method: Hertha BCS Berlin is building it on the throwers' training ground close to the Olympic Stadium for the club's young talent teams. For building the changing rooms integrated into the spectator stand, the Berlin branch of Otto Quast Fertigbau Sachsen utilised the monolithic wall system "Poraform".

Photograph by courtesy: Dennert Poraver