Upper Franconian company supplies material for drinking water wells

Glass Beads instead of gravel

Many threats and dangers for the drinking water supply of the future have been identified in the past decades. Among these, both climate change and extreme weather events, as well as the progressive aging of the infrastructure have a negative impact. The dwindling availability of natural sands and gravel in sufficient quality as bulk material represents an additional challenge for water well construction. The basic principles of water supply in Germany are:

- local and regional supply
- sustainable and near-natural production and treatment of drinking water
- safe operation and maintenance of the water suppliers and the operators of the building installation on the basis of the DVGW regulations.

In order to secure the highest good - drinking water - in the long term, there are means to make wells more durable: glass beads as annular space fill in drinking water and mineral wells instead of sands and gravel. Since 2009, glass beads have been used regularly and with increasing success as annular space fill. They are installed in the annulus (between the borehole wall and the filter tubes) as a supporting layer in the well. Glass beads offer the following advantages over mineral gravel:

- glass beads are microbiologically pure
- high roundness
- higher chemical resistance
- 4 to 16 times higher breaking strength than gravel
- longer operating and service life of the well with lower operating and maintenance costs
- smooth surface of the glass beads
- lower settlement behaviour

Due to the rising demand for water and the ever increasing sealing of the ground, it is becoming more and more difficult to build new wells.

Here, glass beads are filled into the annular space of a well.

Therefore, new and existing wells and wells to be reconstructed must become more and more efficient. The glass beads with their excellent hydraulic properties offer great advantages for the long-term survival of our wells. The uniform pore space and the very smooth surface, which delays the adhesion of ferrite or manganese for a much longer time, cause a significant extension of the useful life span and provide for savings in the double-digit percentage range in the life of a well. As a high-quality link in this structure, the glass beads also support the technical progress of other components in the well (e.g. high-quality pumps, stainless steel continuous slot screens, high-tech software for monitoring, etc.). Glass bead wells are now very common in Germany; in each federal state there are already several wells equipped with glass beads. Also in the European neighbouring countries Austria, Switzerland, France, the Netherlands, Italy and Poland glass beads are increasingly used. The great leap across the Atlantic to the USA was made about 5 years ago. Here the glass beads are a highlight in the well building community. More and more countries in the USA are using glass beads, since the increasing drought during the summer months exposes the wells to higher demands. In the United States, ASR wells are used for withdrawing water in dry months, which was introduced into the earth in rainy months. Glass beads are always a topic of interest at regional specialist conferences for the water and waste water industry, at well conferences of the training center for well builders, as well as at large international trade fairs (e.g. IFAT, Aquatech). A renowned supplier of such glass beads for wells is the Siegmund Lindner GmbH from Warmensteinach (County Bayreuth). >BSZ