

# K-PROFI

international edition



### Our quality promise to plastics processors

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At Geberit, the European market leader for sanitary products, heavy granulators ensure minimal waste and low energy consumption. Felix Hug explains the various advantages:

## Saving 50 % energy during shredding

How **Polibak** gives mono-stretch films a barrier. How **Pöppelmann** integrates welding systems into production cells. How injection moulder **Novapax** centralises material supply. How **Umati** is driving digitalisation as the world language of production. And what trends **K 2022** revealed.



Felix Hug, process engineer at Geberit in Pfullendorf on Lake Constance, shows an extrusion blow-moulded cistern.

# Save up to 50 % energy in the production of ground material

Why the sanitary products manufacturer Geberit relies on granulators with intelligent controls


**“Simply a dream,” raves process engineer Felix Hug during a tour of the state-of-the-art Geberit Produktions GmbH plant in Pfullendorf. By dream, he means the granulators weighing up to five tonnes, which ensure minimal waste, high reuse rates and low energy consumption at the European market leader for sanitary products. “They are solidly built, robust, durable and at the same time quiet, easy to operate and flexible,” the process engineer concretises, and in conversation with K-PROFI explains Geberit’s fully automated production method as well as the functionality of the mills and their advantages for his company in more detail.**

*Text: Dipl.-Ing. (FH) Karin Regel, Editor K-PROFI*

The manufacturing capacities of the Geberit Group, which has its headquarters in Rapperswil-Jona, Switzerland, comprise 26 production plants, four of them overseas. With around 12,000 employees in 50 countries worldwide, the Group generated net sales of EUR 3.56 billion in 2021. The first Geberit site in Germany was founded in Pfullendorf on Lake Constance back in 1955. Today, in addition to the Group’s largest sales unit, the largest production plant and Logistik GmbH as the central distribution function for the whole of Europe are also located here. With around 1,900 employees, Geberit is also one of the largest employers in the region. The Pfullendorf plant specialises in concealed and exposed toilet cisterns and produces several thousand of these systems per day. To this end, Geberit operates extrusion blow moulding machines, injection moulding machines and several units at the



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In addition to blow moulding machines for cisterns, injection moulding machines produce accessories for the cistern systems at Geberit's largest production site.



A metal detector operates in front of each mill and a metal separator behind each mill. The result is pure and metal-free regrunulate.

German site that process EPS into sound insulation cladding for the cisterns and its accessories. Only completely assembled systems leave the factory and are delivered to wholesalers and DIY stores throughout Europe. "The market is booming," says Felix Hug, who reports that demand for cisterns remained high during the Corona pandemic. The reason was not only the construction of many new buildings, but also the renovation and modernisation of existing bathrooms.

#### Heavyweights are in the basement

All residues from production, such as start-up scrap and sprues, which are not crushed and returned immediately at the production machine, are pre-sorted and sent to the basement, where a total of four large granulators are located. They come from Roetgen and are called, among others, MDSi 650/450 and MDSi 410/260. The mill feeder, who makes sure that each of the four mills is only loaded with the material remnants for which it is intended, recognises immediately if a faulty part from a different polymer has got into a box.

He is also taken with the Hellweg mills and emphasises one of the main advantages, the noise level: "Even when the mill is running, we can talk next to it, as you notice. That's a great relief when you work here all the time."

And there is something else that is important to him: "You can get to the technology." By this he means that the grinding chamber is easily accessible and can be cleaned quickly and conveniently in the event of a product changeover. Because logically, material changes are commonplace when different polymers are processed. "All the waste we produce internally is ground up here and reprocessed," underlines Felix Hug, who is very proud of the low amount of waste at Geberit.

#### Significant energy savings during grinding

Despite careful work, it can happen that a metal part slips into the waste. "A screw is the most common," says Felix Hug. Even if metal is not a big problem for the mill, it must never be allowed back into the



Start-up scrap and sprues that are not crushed and returned directly in production are pre-sorted and sent to large granulators in the basement. The technology of the four mills is easily accessible. They operate so quietly that they protect the people feeding the material from excessive noise.

production process, which is why there is a metal detector in front of each mill that stops the conveyor belt as soon as a metal particle is detected, and a metal separator behind each mill that removes any metal particles.

The highlight of the mills is the intelligent Smart Control system introduced by Hellweg in 2019, with which some of the mills at Geberit are already equipped, including two of the large cutting mills in the grinding centre in the basement. On the MDSi models, power consumption, speed and temperatures are measured, analysed, and documented in real time. "In this way, direct conclusions are drawn about relevant service lives, and excesses are reported at an early stage, long before a malfunction can occur," explains Managing Director Mark Hellweg, who is also very positive about the long-standing and trusting cooperation with his customer Geberit.

All i-model granulators are equipped with a frequency converter, which is responsible for the significantly lower power consumption of these models in contrast to predecessor models. A granulator consumes a particularly large amount of power during start-up, which is why these models start up very gently. In addition, the smooth start-up and low vibrations have a positive effect on wear and tear and the service life of the entire mill mechanics.

Models with frequency converters can easily be operated only at the speed required for the respective size reduction task, which in turn saves energy and ensures a longer service life of the wearing parts. "According to our calculations, more than 50 per cent energy can be saved with our new models, which can reduce energy costs by 40,000



The Geberit site in Pfullendorf on Lake Constance produces concealed and exposed toilet cisterns as systems in numerous designs.

euros per year for a mill that is operated 24/7," promises Mark Hellweg. He is fully aware that with his 20-man team he is rather a small company that cannot convince on price alone. "We have to convince with the technology, and we obviously succeed very well, especially with large companies like Geberit is." ❏

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