![sesotec logo]

Recycling

Steinbeis Polyvert –
Plastics recycling at its best

Steinbeis Polyvert GmbH
Product:
VARISORT+
FLAKE PURIFIER+
FLAKE SCAN

For more than 30 years, Steinbeis Polyvert GmbH (formerly Kruschitz GmbH) has been committed to providing the right solutions for recycling valuable secondary raw materials. Founded in 1956 and with production facilities in Austria and Germany, Steinbeis Polyvert is one of Europe's leading plastics recyclers. Steinbeis Polyvert is continuously developing and optimizing its recycling solutions for PET, HDPE and PP plastics.

The result is plastic pellets of the highest quality and grade, which can be used in a wide range of product applications. Thanks to a large international network and many years of experience as specialists in the field of plastics recycling, Steinbeis Polyvert is able to offer its customers an optimum product portfolio.

The main aim is to recycle different material flows sustainably in order to provide high-quality recyclates. In this way, Steinbeis Polyvert strengthens the circular economy, conserves resources and contributes to environmental protection.

The problem: different materials have to be sorted

If you want to sort a wide variety of materials, you need flexibly adaptable and high-precision sorting technology - coordinated with upstream and downstream processes.

Sesotec was involved in the planning of the new sorting line right from the start. After extensive sorting tests with different material compositions at the Sesotec technical center in Schönberg/Bavaria, the sorting processes were jointly developed and successfully implemented.

The solution: sorting and analysis systems from Sesotec

Material processing at Steinbeis Polyvert begins with bale breaking. After FE separation, air separation and a ballistic separator, the actual sorting of the material into single-variety fractions begins.

The latest Sesotec VARISORT+ UNITY sorting systems take over the pre-sorting and final cleaning of the good material. They also carry out material recovery from the previously generated reject fractions.

Picture: Sesotec VARISORT+ FLEX

Depending on the incoming material, different sorting programs are selected, which were optimized during commissioning. Of particular interest here is the option of using the Sesotec VARISORT+ FLEX measuring bridge solution to carry out an online analysis of the material arriving from the upstream processes. This takes place parallel to the running sorting program and provides an evaluation of the incoming material with regard to its material and colour composition in real time. In addition to the statistical process data that can be generated, it is possible to react quickly to changes in the composition of the input material in order to make optimum use of the running sorting program.

The good material fractions obtained from pre-sorting are ground and washed in the next step. After further separation stages, the flakes are passed to the final optical sorting stage, in which Sesotec FLAKE PURIFIER+ sorting systems are used. These remove off-colors and foreign plastics as well as residual metals from the material stream in order to finally obtain pure PP and HDPE flakes.

In order to meet the high quality requirements of processors, Steinbeis Polyvert uses the FLAKE SCAN analysis system from Sesotec before extrusion and at other points in the sorting process. This allows the quality of the plastic flakes to be determined within a few minutes. A quick and reliable decision on the usability of the material is possible within a very short time. Material samples are analyzed precisely and within minutes for foreign plastics, incorrect colors and metals and the result is output.

In the final step, the plastic flakes are extruded directly on site and processed into plastic granulate. This high-purity recycled granulate is used by the plastics processing companies to produce new goods. The recycling loop is closed.

The customer benefit: highest quality requirements are met

A special feature of the application is that the latest Sesotec multi-sensor sorting systems in combination with artificial intelligence (AI) are being used for the first time at Steinbeis Polyvert's Austrian site. These VARISORT+ UNITY multi-sensor sorting systems with measuring bridge offer the latest technology in combination with AI, which raises the sorting possibilities to a new level.

Sesotec sorting systems with AI enable the detection of black objects on a black conveyor belt or the detection of objects that would be very difficult or impossible to distinguish from other material using conventional color evaluation.

Outstanding results can also be achieved with the three-shaft device in combination with a particularly fine blowing nozzle grid. This device enables sorting into three material fractions on a single sorting device for particularly small material grain sizes.

André Aßmann, Managing Director of Steinbeis PolyVert GmbH: "With Sesotec, we have a reliable technology partner that supports our recycling processes with flexible and precise sorting and analysis systems that are suitable for meeting the highest quality requirements of our customers."

Metal detection systems

X-ray inspection systems

Sorting systems

Magnet systems