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Global Sieving & Filtration Specialists

German recycling firm vastly improves separation process for recycled PET plastics

Finex Separator™ increases capacity and improves separation accuracy in PFR Nord's pre-separation processing line

Founded in 2012, with production starting in 2013 PFR Nord GmbH (PFR standing for "PET Flaschen Recycling") deals with the recycling of PET from beverage bottles. With a warehouse and production area of 41,000sqm, PFR Nord prides itself on its process, and that its recycling plant has been designed to ensure product is recycled as efficiently and effectively as possible.

PFR Nord's products stem largely from local German returnable bottle systems, of which the company move and recycle more than 40,000 tons of drinking bottles every year. The plastic bottles are ground into flakes. Most of those flakes are used for producing drinking bottles again, optimizing the usage of raw materials and closing the cycle from bottle to bottle. The rest of those flakes are used for the production of foil, non-food-packaging, packing tapes and fibers.

Processing the PET recycled plastic

The pre-separation process begins with a bottle sorting line. The second stage is the bottle washing line, where the Finex Separator™ was installed as part of the final separation process. Here, the unit is used to recycle this PET plastic, done by washing the shredded plastic on the sieve mesh with cold wash water at around 20-30°C. The water is used to wash out the bottles and to remove contamination, which can range from paper, labels, foreign plastics, and organic material from inside of the bottle.

To ensure that they are washed effectively, the bottles are grinded which allows any contamination and plastic to be separated easily. Its removal enables the product to then be processed, so that the plastic can be further separated and turned into flakes.

Having previously used a competitors sieving machine to pre-separate the solids with the wash water, Russell Finex were contacted to supply a more suitable, reliable replacement for PFR Nord's processing line. With this previous machine, the company experienced inadequate throughput rates, and needed to utilize larger mesh sizes in order to meet the desired throughput of the process.

Figure 1. The Finex Separator™ is installed at PFR Nord to separate the solids from the wash water

- **High capacity** – Substantial improvements over conventional circular separators in terms of increased capacity and yield
- **Lower maintenance**– Housing design allows for standard motor to be used, reducing overall costs
- **Greater accuracy**– Allows for full material flow on 4 mesh screens providing accurate grading and separation

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An innovative screening solution

After consulting with the sales team to define the exact specifications needed by the company, Russell Finex were happy to provide an on-site trial of a 60" diameter Finex Separator™ unit for three weeks.

In order to achieve complete customer satisfaction, Russell Finex's sales team were also on site at times during this trial period to help with the machine installation and to find the optimum machine settings for the pre-separation process of contamination from the plastic.

Managing Director of PFR Nord, Mr Holger Mainka, said "We were very happy about how Russell Finex went above and beyond to give us a solution to our problems. The fact that they also provided us with a test unit to trial for the solution also proved incredibly helpful and we were very pleased with the partnership that was made."

Once it passed a successful trial, the Finex Separator™ proved to be the perfect solution to fit into PFR Nord's production line. Once installed on site, it provided the company with a considerably higher throughput rate than the previous unit, reaching the required throughput of 35m^3/h through a 200µm mesh aperture. With a design that allows for greater separation accuracy, mesh life was also increased resulting in higher productivity due to less frequent mesh screen changes being required.

Aftermarket service care provided

Furthermore, as part of this agreement, Russell Finex's aftermarket service team were also on hand to assist with providing replacement mesh screens. Product Manager, Mr. Hauke Bumann, comments: "We were very satisfied with the aftermarket contact provided by Russell Finex, and how it helped us whenever we needed a spare part or a mesh screen replaced."

Designed for accurate grading and sizing of materials such as plastic in one seamless operation, the Finex Separator™ is a versatile unit, capable of handling any required throughput and available in a range of different sizes from 30", 40", 48" and 60" diameter. It is easy to disassemble and maintain, allowing for a reduction in production downtime and with maintenance costs kept to a minimum.

With 85 years' experience Russell Finex is a global leader in the production and design of industrial separation equipment for the recycling industry. The company supplies a wide variety of filtration and separation machines to suit a range of different applications and industries and has a dedicated aftersales support team to ensure your machine always running smoothly. To find out more about how our machines can help suit your specific requirements, contact us today.

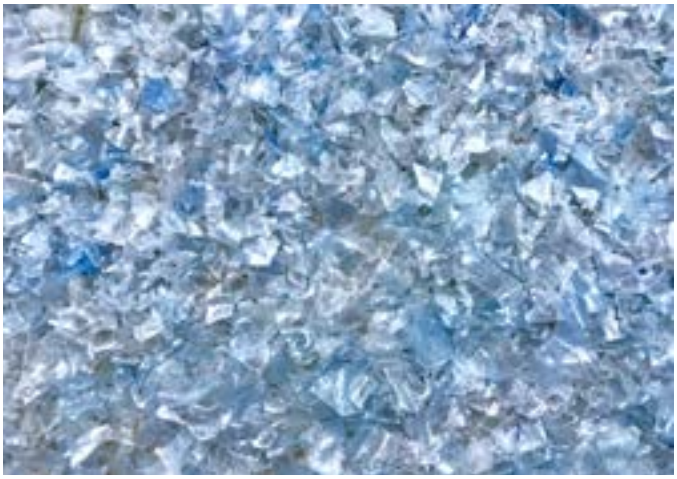

Figure 2. An example of the ground PET plastics PFR recycle and separate with the Finex Separator™

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