



Lucite International Ltd maximizes output of its new drying plant for polymer bead production

A high-performance Russell Finex Separator™ replaces a traditional separator machine to increase production rates by 20% and improve separation accuracy

Lucite International Group Ltd., commonly known as Lucite, is part of the Mitsubishi Chemical Corporation and is a world leader in the design, development and manufacture of acrylic-based products. The company has many manufacturing plants around the world, producing polymers, monomers, composites and resins for various applications including dental, medical, coatings, adhesives and glass.

At its Newton Aycliffe, UK, production site, Lucite produces a number of speciality polymers and resins, specifically designed and developed for the unique needs of its customers. Lucite's vast experience in the industry allows the company to develop high-quality acrylic products at this site, each with the unique properties to satisfy the needs of its customers in highly-specialized areas. When looking to upgrade a traditional spring-mounted separator with a modern alternative for processing polymer beads, Lucite contacted Russell Finex – global leader of industrial separation equipment – for a solution.

Lucite had recently installed a new drying plant in one of its polymer bead production lines and sought an upgrade to its sieving process. The previous equipment, a traditional spring-mounted separator unit, could no longer fulfil the production capacity required on the upgraded line. Therefore, a high-performance solution was essential to meet the required throughput rates, as well as guarantee the sizing accuracy and consistency of the polymer beads.

John Allen, Manufacturing Development Engineer at Lucite's Newton Aycliffe plant, said, "Having previously relied upon Russell equipment for several applications across our polymer beads processing lines, we chose to contact Russell Finex once again for a solution that would meet our needs."

Polymer beads act as additives in the manufacture of a variety of products including coatings, plastics, cosmetics, ceramics and adhesives and can be processed with various material properties and particle sizes. As with all Lucite products, the quality and consistency of the polymer beads is of the highest importance, and the company required a high-performance

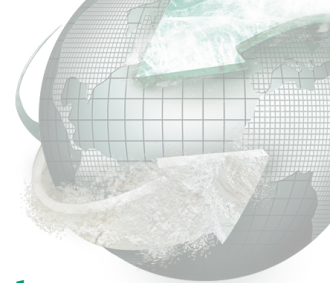


Figure 1. The Finex Separator™ with Russell Vibrasonic® Deblinding System installed at Lucite International Group Ltd to ensure accurate sizing of polymer beads

- **Increase productivity** – Innovative design delivers significant improvements in terms of capacity over traditional spring-mounted separators
- **Reduce production downtime** – Quick and easy tool-free assembly and disassembly, meaning easy maintenance and reduced downtime
- **Increased separation accuracy and capacity** – Ultrasonic sieving technology optimizes the separation of powders and granules on fine meshes

solution to accurately grade 200-micron polymer beads at 300kg per hour.

After consultation with Russell Finex, it was decided a 48" Finex Separator™ fitted with a Russell Vibrasonic® Deblinding System would be the ideal solution for grading the polymer beads. This revolutionary vibratory separator is designed to deliver high-capacity, accurate grading of up to five fractions of powders and granules in one operation, and comfortably met Lucite's required production capacity.



The Finex Separator™ benefits from major advances in separation technology to deliver significant improvements in sieving accuracy, capacity, noise levels and upgradeability compared with traditional spring-mounted separators. Full material flow on up to four mesh screens provides accurate grading and separation of up to five fractions of material, and with its patented rubber suspension instead of springs, higher capacities can be achieved as well as reduced noise levels – as low as 69 dBA. These **vibratory separators** have been designed to be quick and easy to dismantle and clean, reducing production downtime and potential product cross-contamination. The units are available in a range of sizes for easy installation into existing production lines, whilst meeting the required production capacities of modern-day manufacturers.

Upgrading the Finex Separator™ with the patented Russell Vibrasonic® Deblinding System further increases production capacities by ensuring mesh apertures remain clear when screening powders and granules on fine mesh. The system applies an ultrasonic frequency directly to the mesh screen, effectively reducing friction and eliminating the blinding and blocking of the mesh apertures. Ultrasonic sieving technology can improve sieving capacities by up to 10 times, as well as enabling sieving on finer meshes to obtain a higher quality final product.

Allen concluded, “The Finex Separator has significantly improved the output of this area of our production line. This new unit has increased capacity by 20% compared to the previous machine, and the accuracy of separation is excellent. As with all our Russell Finex equipment, one of its great strengths is its reliability – our production operators can continue with other valuable tasks whilst the machine is in operation, and it requires minimal maintenance.”

At Lucite’s Newton Aycliffe site, the company also operates additional Russell Finex separation equipment, including several **self-cleaning liquid filters** to ensure the quality and consistency of liquid adhesive resins on a separate production line.

Global leaders in separation equipment, Russell Finex has a range of vibratory separators, check-screeners and filtration systems to protect the quality of powders and liquids. From grading and sizing materials at various stages of production, to screening final products and protecting downstream equipment, Russell Finex Ltd supplies solutions to manufacturers across **various industries** including coatings, chemicals, food, pharmaceutical, metal powders and many more.



Figure 2. The Finex Separator™ has significantly enhanced the sieving capacity of the polymer beads production line