



RUSSELL FINEX

Global Sieving & Filtration Specialists

Russell Compact Sieve® helps improve product quality at Profel Extrusion & Finishing Belgium

Incorporating the Russell Compact Sieve® in a powder coating line reduces waste and maximizes productivity at Profel Extrusion & Finishing

Profel Extrusion & Finishing is part of the Profel Group, a family run Belgian company formed in 1948 employing more than 1,000 people globally and one of the largest manufacturers in Europe of windows and doors using plastic, aluminium and wood material.

Profel Extrusion & Finishing specializes in the extrusion of aluminium and processes around 14,000 tons of aluminium per year, with 200 employees at their site in Overpelt, Belgium.

The company only uses 20% of the processed aluminium extrusion for the production of its windows and doors. The other 80% is sold to customers in Europe mainly within the construction industry.

Production Process

To ensure only high quality frame products are supplied, the aluminium profiles must have an even coating without any irregularities, which can be caused by oversize contamination in the powder paint. If the profile does not meet the quality standards it is rejected. To prevent this, the powder paint is screened before it is applied to eliminate any oversize particles.

The powder coating is then sprayed evenly onto the aluminium profiles using spray nozzles and any excess powder paint which does not attach to the aluminium profiles is reclaimed and rescreened ready for reuse. After the profiles have been through the coating process, they are baked in an infrared oven and dry oven. They are then cut to size and packed for shipment. Profel Extrusion & Finishing manufacture their own powder paint which is available in different colors and provides an anti-corrosive layer to their aluminium profiles.

The Problem

Profel Extrusion & Finishing were initially used small vibratory sieves, fitted with deblinding discs with an under pressure vacuum pulling the powder paint through the sieve mesh.



Figure 1. Installation of the Russell Compact Sieve® at Profel Extrusion & Finishing

- Ensure product quality - Screen your product to eliminate any oversize contamination
- Enclosed screening - Eliminates dusts and fumes, safeguarding operators
- Compact design - Easy to install in existing or new production lines

However the sieves could not meet capacity requirements. Patrick Follon, Production Manager at Profel Extrusion & Finishing comments "We had to reject a lot of aluminium profiles which had irregularities as the sieves were unable to screen at the required 150 microns. Furthermore, mesh breakages would occur frequently due to mesh blockages resulting in high levels of downtime."

Russell Finex Ltd.
Feltham, England.
Tel: +44 (0) 20 8818 2000
Fax: +44 (0) 20 8818 2060
E-mail: sales@russellfinex.com

Russell Finex N.V.
Mechelen, Belgium.
Tel: +32 (0) 15 27 59 19
Fax: +32 (0) 15 21 93 35
E-mail: sales.nv@russellfinex.com

Russell Finex Inc.
Pineville, N.C. USA.
Tel: +1 704 588 9808
Fax: +1 704 588 0738
E-mail: sales.inc@russellfinex.com

Russell Finex Pvt. Ltd.
New Delhi, India
Tel: +91 (11) 43589870
Fax: +91 (11) 43589800
E-mail: sales.rfsf@russellfinex.com

RUSSELL
www.russellfinex.com



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The Solution

Profel Extrusion & Finishing approached Russell Finex for a solution to their processing problems. With 80 years of experience within the powder coatings industry, Russell Finex was confident that they could meet the quality standards and capacity that Profel Extrusion & Finishing required. Following consultations, a **Russell Compact Sieve®** fitted with a **Vibrasonic® Deblinding System** was provided promptly for testing at the Profel Extrusion & Finishing factory to ensure the company's high quality standards could be met.



Figure 2. Example of a Profel window

After successful trials, Profel Extrusion & Finishing purchased four Russell Compact Sieves each fitted with a Vibrasonic® Deblinding System. Two sieves were installed at the end of the powder paint manufacturing line while the other two were installed within the powder coating line to sieve the reclaimed powder paint.

Follon adds: "By testing the Compact Sieve and the Vibrasonic system at our production site we were certain the equipment could meet our requirements. We were more than satisfied with this service offered by Russell Finex as it assured us we were making the right investment."

By combining the Russell Compact Sieve® and Vibrasonic® Deblinding System, Profel Extrusion & Finishing were able to achieve high capacity accurate screening at 150 microns and eliminated the quality problems immediately.

The low profile, 'straight through' in-line design of the Russell Compact Sieve® offers higher production rates compared to other vibratory sieves with a larger diameter. With its easy clean design the sieve can be cleaned between color batches to prevent cross contamination with minimal effort. Easily adjustable clamps make the Russell Compact Sieve® easier to dismantle than the previous static sieves, reducing downtime.

To ensure the flow of the powder through the sieves mesh is upheld, Vibrasonic® Deblinding Systems are fitted to the sieves. The Vibrasonic® system combines conventional vibration with ultrasonics. An ultrasonic frequency is applied directly to the mesh, breaking down surface tension and effectively making the wires friction free. This eliminates mesh blinding and maintains product consistency without needing to continuously stop the machine to clean the mesh. Follon comments "Our internal quality assurance department at Profel Extrusion & Finishing report that the coated profiles are now of better quality and have found that fewer profiles are rejected since the installation of the Russell Compact Sieves."

For over 80 years Russell Finex have manufactured and supplied filters, sieves and separators to improve product quality, enhance productivity, safeguard worker health, and ensure liquids and powders are contamination-free. Throughout the world, Russell Finex serve a variety of industries with applications including **food, pharmaceuticals, chemicals, paint, coatings, metal powders** and **ceramics**.

Russell Finex Ltd.
Feltham, England.
Tel: +44 (0) 20 8818 2000
Fax: +44 (0) 20 8818 2060
E-mail: sales@russellfinex.com

Russell Finex N.V.
Mechelen, Belgium.
Tel: +32 (0) 15 27 59 19
Fax: +32 (0) 15 21 93 35
E-mail: sales.nv@russellfinex.com

Russell Finex Inc.
Pineville, N.C. USA.
Tel: +1 704 588 9808
Fax: +1 704 588 0738
E-mail: sales.inc@russellfinex.com

Russell Finex Pvt. Ltd.
New Delhi, India
Tel: +91 (11) 43589870
Fax: +91 (11) 43589800
E-mail: sales.rfsf@russellfinex.com

