

Speaker:

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Title:

Mechanical Recycling Excellence: Circular PVC Window Profiles at Virgin Quality

Abstract:

In the current debate, “advanced recycling” is often primarily associated with chemical or thermochemical technologies. At Schüco, we take a broader view: advanced recycling also means continuously improving mechanical recycling systems to achieve higher quality, stronger circularity, and better environmental performance over time.

This presentation will show how the mechanical recycling of PVC window profiles has evolved into a highly sophisticated circular solution through more than 25 years of innovation. Using PVC window profiles as a best-practice example, we will demonstrate that high-quality closed-loop recycling can deliver virgin-quality performance while preserving material value and enabling true product-to-product applications. For durable building products with long service lives, predictable material composition, and dedicated return streams, mechanical recycling offers particular advantages in terms of efficiency, scalability, and carbon performance.

At Schüco, we therefore see PVC window profiles not only as a successful recycling application, but as a potential role model for other durable products designed for circularity. Their example shows that circularity does not start at end of life, but at the design stage: with choices that support long service life, repair, refurbishment, reuse, disassembly, clean material streams, and high-quality recovery. Real progress depends on the interaction of circular product design, traceability, reliable collection, high-quality sorting, and intelligent end-of-life management.

The presentation will also outline a holistic approach to window recycling that goes beyond PVC profiles and includes flat glass, seals, steel, and aluminium. Other advanced recycling technologies can play an important complementary role for specific boundary conditions, such as complex mixed waste streams or the management of substances of concern. However, wherever durable products are designed for circularity and material streams can be kept clean, mechanical recycling remains one of the most effective pathways towards a scalable, low-carbon circular economy.