"Recycled PVC meets the highest quality requirements"

The PVC that Deceuninck uses for the production of windows and doors, among other things, can be recycled at least ten times without losing its mechanical properties. "Thanks to this high recyclability, we can extend the lifespan of PVC from 35 to 350 years," says Sandrino Vierstraete, Production Director Europe at Deceuninck.

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Deceuninck (founded in 1937) is mainly known for its window and door systems in PVC and aluminium, but it also produces ventilation and wall vents, structural sun blinds, louvres, wall cladding and all kinds of building profiles. The listed group, with its headquarters in Hooglede (Belgium), has production sites in twelve countries and employs more than 3,600 people worldwide. Sandrino Vierstraete is the Operational Director for all plants in Europe. "This involves seven countries and nine locations with more than 1,200 employees," he explains. "I regularly monitor the operational KPIs of the local plants, as well as the improvement projects and optimisations. I help my colleagues to set goals on different levels. Therefore, a financial, statistical assignment linked to operational performance often brings me to the various sites."

What is Deceuninck's role in the circular economy?

Sandrino Vierstraete: "For quite some time, we have been grinding our internal (post-industrial) PVC waste into reusable PVC pellets in all our plants. These pellets are then re-injected as raw materials. We don't throw anything away. Since 2018, we have also been focusing on recycling old PVC windows and doors (post-consumer), so we are going one step further. On the site of our existing compounding plant in Diksmuide, which produces more than 50,000 tonnes of compound a year, Deceuninck built a high-tech recycling plant. We recycle old PVC profiles into granulates that serve as a basis in the extrusion process to make new PVC profiles. That's how we close the loop."

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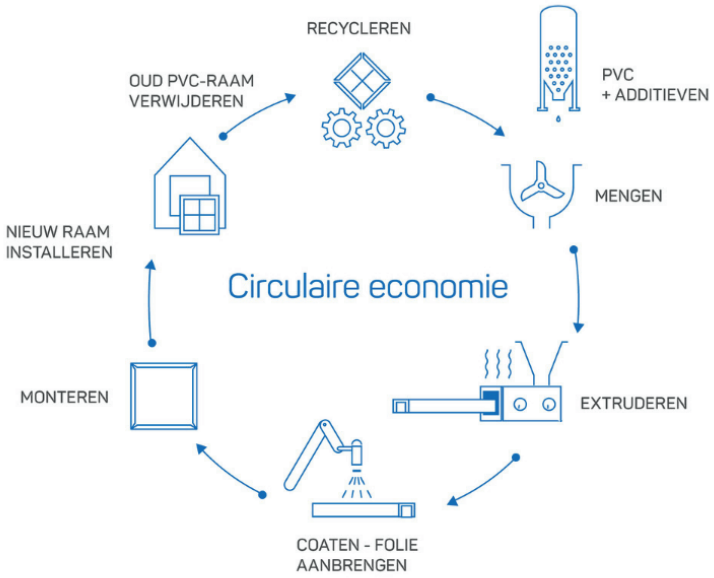
In one sentence, what does Deceuninck mean by circularity?

Rather than express that in one sentence, I like to summarise the meaning we give to circularity in the rendition of our value chain below.

Sandrino Vierstraete,
Deceuninck PVC construction profiles



With a capacity of 45,000 tonnes of rigid PVC per year, our recycling plant in Diksmuide is the largest in the Benelux. Forty-five thousand tonnes of recycled material corresponds to 2.3 million windows that are not sent to landfills or incinerated every year. In addition, estimates by VinylPlus show that each kilogram of recycled PVC saves 2 kilograms of CO2. Forty-five thousand tonnes of recycled PVC is therefore equivalent to a reduction of 90,000 tonnes of CO2 emissions or 70,000 return flights from Paris to New York. It also provides energy savings of 90% as recycling PVC requires 90% less energy than producing new PVC."

How does circularity relate to sustainable business at Deceuninck?

"At Deceuninck, we see 'Making the world a greener place' as a combination of technologies. The first is circular; we process post-industrial and post-consumer PVC waste into raw materials that we put back into circulation. The use of renewable energy in all plants is a second important pillar. A third is product innovation, which ensures our profiles achieve high insulation values in buildings. Finally, we are constantly looking for ways to optimise our production processes. Important factors here are our consumption of electricity, fuels and raw materials, the traceability of our raw materials and our waste management."

What was the trigger to start post-consumer recycling in Diksmuide?

"Several reasons matured quickly at a certain moment. We wanted to make our activity more sustainable or 'greener' while working with a raw material that is very suitable for recycling. The scarcity of raw materials has also played a part, and corona has once again proved us right. Finally, there is the price of raw materials..."

What is the ratio in Diksmuide of output to the purchase of new raw materials? To what extent is your production already circular?

What was the trigger to start post-consumer recycling in Diksmuide?

"We are not there yet, Paul. We are currently not allowed to use recycled raw materials in a mono profile in most markets. A mono profile consists of one type of PVC. We still use virgin raw materials for certified products (bare, unvarnished, unfoiled). The recycled materials are used in co-extrusion profiles. These are made using two simultaneous extrusions. The core takes up 40 to 50% of the product and consists of recycled materials. It can be coloured (bunt) in Eastern Europe, but in Western Europe, our customers still expect white (coloured bunt material). The mantle or "skin", which comes into contact with light and air, consists of virgin PVC. We create co-extrusion profiles at 10 to 15% of our machine capacity in our European plants."

How do old PVC demolition profiles find their way to your recycling plant in Diksmuide?

"Our main sources are demolition firms and installers who refurbish windows. Recycling centres and collectors account for a smaller share. We also have more sorting work from these sources. Our quality expectations are high. The recycled materials must have the same properties as virgin materials. The process in Diksmuide is a large chain of different crushers and a multitude of sorting devices. We separate iron and non-ferrous, as well as rubber, fabric, etc., and finish off with colour sorting. After all, a large part of the market is not yet ready for a core in multi-coloured materials. Some of our streams are therefore not yet fully utilised and we have to sell them on for other applications, but this share is falling very sharply as we are highly committed to co-extrusion in all our extrusion production plants."

In the story you tell, that's a real shame!

"Indeed, there is still a long way to go. But don't be sad – the core can be bunt in Eastern Europe. And we are working on a major project in the Netherlands in which we can deploy 100% recycled material for equipping public buildings such as schools, sports halls, etc. I am convinced that Deceuninck has chosen the right path. It requires investment, but we will recover that over time. We are convinced of our product and never compromise on quality. We are currently trying to increase our supply of old windows and doors because the influx is critical at the moment. PVC recycling is not yet well established, and PVC still has a somewhat negative connotation. People see it as 'plastic' and are not sufficiently aware of the recyclability of the product."

And this while PVC can be steered in all directions aesthetically...

"That's right! If all our lines were co-extrusion, or even better if the certification bodies allowed us to use 100% recycled material, then it would be a completely different story!"

Where do you see recycling opportunities to accelerate the transition to a circular economy?

"Innovation in waste streams is the key to the future of the recycling business. I think there is still a lot of room for optimisation. If we manage to sort the waste streams even better and create additional processes to turn the sorted products into reusable (raw) materials, we can significantly reduce the amount of actual waste products."

How do we get the general public on board with this story?

"By highlighting the gains. For example, the higher insulation values of Deceuninck windows and doors result in lower energy consumption and thus lower energy bills. And by choosing PVC profiles made from recycled PVC, we reduce the mountain of waste. Finally, we cannot repeat often enough that it pays to reduce our carbon footprint. Climate change leaves us no choice but to take responsibility together."

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