



PRECISION IN COLOUR: RE PLANO PRODUCES PURE-GRADE COLOURED PLASTIC FRACTIONS

STEINERT sorting machines for difficult-to-sort plastics

CHALLENGE

RE Plano GmbH – a subsidiary of the REMONDIS Group – has been one of the leading specialists in plastic processing for over 60 years. The company already produces 35,000 tonnes of recycled raw materials annually. The next aim is to sort polypropylene (PP), polyethylene (PE) and polyethylene terephthalate (PET) plastics into different colours, and to further focus on mixed-colour multilayer plastics from end-user collections. For this, the pre-sorted post-consumer packaging must be sorted to >97% purity. Impressed by tests conducted at the STEINERT Test Center in Pulheim, RE Plano decided to collaborate with STEINERT.

“After a construction period of only four months, we have succeeded in creating a sorting facility that enables processes to improve and us to move towards more uniform, pure-grade plastics through highly efficient sorting.”

CASE STUDY: Waste recycling
CLIENT: RE Plano GmbH
www.replano.com

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PROCESS

The solution lies in using a sensor fusion combining a near-infrared (NIR) and colour camera. After a STEINERT UME electric overhead suspension magnet has removed the remaining metals, ten UniSort sorting systems ensure high purity levels and great diversity of the plastic target fractions. The hyperspectral imaging (HSI) technology of the UniSort PR EVO 5.0 offers a particularly high spatial and spectral resolution in the near-infrared spectrum, which ensures precise detection and thus reliable, pure-grade separation by plastic type. The plastics are then separated by colour using the colour sensor.

When combined, these sensors additionally enable the use of AI-supported sorting programmes to further increase efficiency and improve sorting accuracy. This not only ensures that the system can react flexibly to new requirements in the future, but additional sorting tasks, which could not previously be solved with conventional processes, can now be completed as further characteristic properties can be optically determined. For example, PE cartridges with silicone residues can be detected and isolated, eliminating the risk of them contaminating pure PE products to the point that they can no longer be used.

RESULTS

This results in an industrial-scale facility that is considered one of the most modern plastic sorting plants in Europe. By combining magnetic separation and sensor sorting, RE Plano in Bochum has succeeded in recovering much higher levels of plastics from end collections than is required by law. This is an important step towards a circular economy whereby resources are infinitely reused.

The facility – which was a joint project between STEINERT and Sutco and constructed in just four months – can sort around 30,000 tonnes of plastics every year. The pure-grade plastic fractions produced there are then processed into compounds or regranulates at REMONDIS' plant in Lünen.

Having successfully implemented this advanced sorting application, RE Plano is optimistic about the future. The plant is a prime example of how technology and innovation can help meet the challenges of waste management while conserving valuable resources.



With STEINERT's support, we have found a solution that goes beyond the legal requirements and pushes the boundaries of what is possible in plastics sorting.

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