

Heavy metal detection using ICP-OES Recycling plastic window profiles

TASK

PVC windows have been used in the construction sector for decades, but unlike today's windows, they contain certain amounts of lead and cadmium as additives. In principle, the PVC from old window frames could be easily recycled and reused in significant proportions in new window frames, were it not for the problem with the undesirable heavy metals.

SOLUTION

There are methods for extracting heavy metals from shredded old window material. The task of Analytik Service Obernburg is to provide regular proof that this has been successful. For this purpose, part of the recycle is chemically broken down. The heavy metal content in the corresponding solution is quantified using inductively coupled plasma emission spectroscopy (ICP-OES). This makes it possible to determine the concentration at which the regranulate can be added to the process without exceeding limit values. In the same way, the high detection sensitivity of the method makes it possible to characterize sections of a new window frame with recycled pellets with regard to traces of heavy metals.

Industries

Construction industry
Plastics processors
Plastics recycler

Analysis objectives

Quality management

Materials

PVC regranulate

Analysis method

ICP-OES

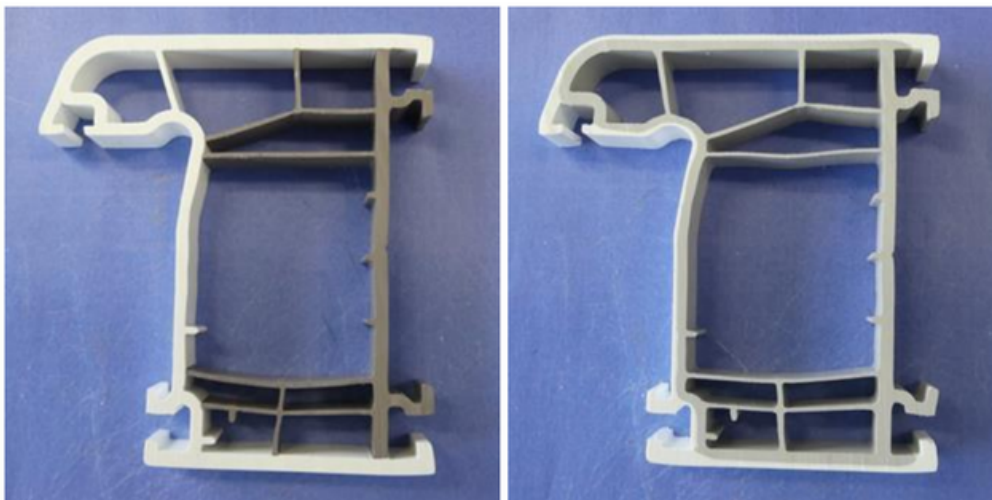


ADVANTAGE

Abrasion and wear devices make it possible to investigate the wear of technical textiles in the laboratory. In addition, simultaneous exposure to media can simulate their influence on abrasion and wear behavior over time. The results of these tests can be used to assess the suitability and quality of materials



Fig 1: Detection of heavy metals using ICP-OES



**Core coextruded
Window profile section**

**Coextruded layer
Window profile section**
