

Zero waste contaminated film plastic

MELBOURNE'S BRANIN RECYCLES IS USING EREMA'S LASERFILTER TO CONVERT INCOMING DIFFICULT TO PROCESS MATERIAL INTO THE HIGHEST GRADE OF PLASTIC.

Edward Meysztowicz has been working in the waste industry since 1991.

After becoming increasingly annoyed by the huge amount of food waste being sent to landfill, he thought “somebody needs to do something to get it recycled”.

In 2003, Meysztowicz established the company Branin Recycles in Melbourne, Victoria, where food waste is recycled back into stock or cattle food.

Within the 20,000 tonnes of food waste recycled every year, three to five per cent of this mass is contaminated film plastic packaging, creating a large plastic challenge to resolve.

Meysztowicz endeavoured to focus on this issue, and in 2018, Branin Recycles started building a new plastics recycling plant.

Propelled by his ‘zero-waste-to-landfill’ philosophy, Meysztowicz wanted to convert the incoming difficult material into the highest grade of plastic to allow a continuous circular economy.

In search of the best options available, he opted to incorporate the Laserfilter from Austrian



company EREMA.

Throughout the years, Meysztowicz attended numerous recycling seminars in which he learnt more about EREMA's world-class equipment.

Feeling well supported by EREMA's Australian representative CEMAC technologies, he decided to invest in a Laserfilter in 2020.

Meysztowicz says he wanted to “take the best the world has to offer and adapt it to our processes”.

The Laserfilter was supplied and commissioned by EREMA despite COVID-19 restrictions without any problems Meysztowicz says, and is now operating to his complete satisfaction.

“It's a gorgeous piece of equipment,” Meysztowicz explains.

Recycling plastics from food packaging is particularly challenging due to the difficult types of plastic that need to be processed.

Usually, food waste comes in complex mixed polymer or mixed material plastics contaminated with food or dirt.

Although the plastic that Branin recycles is mostly contaminated, it poses no problem for the EREMA Laserfilter, as it has been specifically designed for this type of material.

Conventional melt filters are only able to deal with 0.5 per cent of contamination, whereas the EREMA Laserfilter handles up to 5 per cent.

The ‘laser’ in the Laserfilter stems from the thousands of ultrafine laser-drilled holes in the filter's screen discs, that range from 70 to 2000 micrometers, depending on the customer's choice.

The melt needs to pass through

these tiny holes, while any contamination remains on the surface.

An innovative and self-cleaning discharge system uses a scraper disc, which consistently turns over the screen and removes any contaminants. These are then extracted via continuous auger screws. This scraper system drastically extends the filtration capacity of the screening discs and minimises the melt loss through a specially designed squeezing assembly.

In Branin's recycling plant, the EREMA Laserfilter is now integral and ensures reliable melt qualities turn the material into high-quality pellets, so they can be recycled back to plastic film products like crate liners and waste bags.

"The Laserfilter is turning an

average recycled pellet into an excellent pellet," Meysztowicz says.

In a true circular motion, the bags made from the pellet are given to customers who fill them with food waste and return them to Branin for recycling. Due to the high quality of the recycled plastics, the waste bags are recycled again and again, until the limit of the polymer is reached.

Ultimately, with all aspects of a fully sustainable process in mind, Branin's P2P or Plastics to Plastics recycling plant consists of a process that is entirely dedicated to the circular economy.

Branin's Plastics to Plastics process eliminates wastewater typically generated in the process of turning 'difficult-to-recycle' plastics into new high-quality feedstock for EREMA's Laserfilter. Traditional recycling

processes may generate over 10 tonnes of wastewater per one tonne of plastic.

Sustainable water use, and the elimination of wastewater were problems that Edward wanted to solve, and Branin's Plastics to Plastics process delivers an outcome where no wastewater is generated.

Meysztowicz's inventive mind is not resting though, and he underlines that he wants Branin Recycles to tackle other food packaging wastes in the future.

Contaminated agricultural films are a thorn in the side of his agriculture customers, so Meysztowicz is currently trialing methods to recycle those as well. There is plenty of work for the EREMA Laserfilter system to do. ■

For more information on Branin Recycles, visit www.branin.com.au.