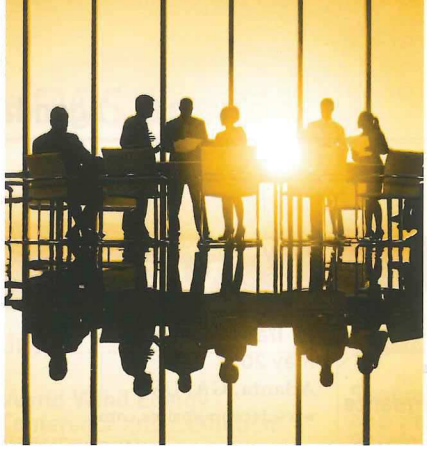

Start-up of an experimental recycling line for composite materials

At JEC World 2017, Cetim-Cermat presented its new pilot line dedicated to the recycling of plastics and composites. The line is set up in Mulhouse (eastern France).

The development of Thermosaïc® technology has passed a new milestone with the start-up of a new recycling line that was developed and built to specification. Delivered in late 2016, the new pilot line prefigures the industrial lines of the future.

Thermoplastic composite waste

The line serves for the continuous production of structural panels from thermoplastic composite waste. The crushed, sorted and shredded waste is randomly deposited by several delivery modules onto a conveyor belt, where they are thermocompression-bonded into sheets. These are delivered in the desired length at the end of the line, to be cut, folded, welded or hot-formed into strong, lightweight parts.

The materials produced using the Thermosaïc® technology have high mechanical strength, since the length of the reinforcement fibres in the shredded waste is kept sufficiently long (from 30 to 200 mm). The original structure of the waste makes the materials quasi-isotropic and easier to shape using thermocompression or thermoforming than is the case for standard continuous-fibre composites.

An innovative patented line

The line is unusual not only for its multifunctionality (it enables the upgrade of a broad variety of matrices and reinforcements) but also, and especially, for its modularity: the input modules can be replaced between production cycles by modules for unwinding films and reinforcement, thereby transforming the line to adapt to ThermoPRIME, the other recycling technology developed by the Cetim-Cermat and its partners.

ThermoPRIME technology consists of combining long-fibre or fabric reinforcements with recycled plastics to produce composite materials with mechanical properties that are much higher than those of the original material (5 to 10 times higher), while offsetting the loss of properties from aged, recycled plastics.

Thermosaïc® and ThermoPRIME® technologies have been developed in partnership with Airpur, Paprec Plastiques, Plastiform and IS2M.

A platform for composites and recycling

The new experimental line has been set up within a brand-new platform located in Mulhouse. The platform also provides the technical means to prepare the waste upstream of the process and, downstream, to demonstrate the uses for these new recycled materials. Its inauguration is scheduled for October 2017. □

More information:
www.cetim-cermat.com

The line serves for the production of structured panels from waste