UPCYCLING

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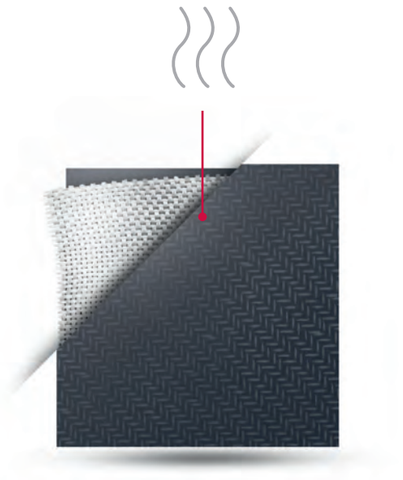
JEC WORLD INNOVATION AWARDS WINNER 2018

UPCYCLING

ThermoPRIME® & Thermosaïc® technologies for thermoplastic composite recycling

INNOVATIVE RECYCLING TECHNOLOGIES

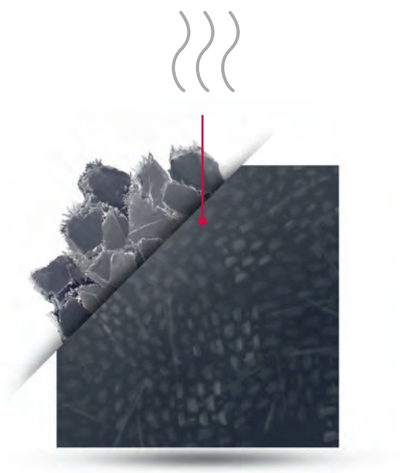
Cetim Grand Est developed an original and innovative recycling line for both thermoplastic injected parts and thermoplastic composite materials which is unique in Europe. Indeed, the technology is based on an "up-cycling" approach and allows the production, from waste, of composite semi-products having maximized mechanical performances comprised between short fiber injected plastics and continuous reinforced composite materials.



THERMOPRIME® TECHNOLOGY

Upcycling of non-reinforced thermoplastic waste

- Recycled plastic materials associated with continuous or long fiber reinforcements
- Mechanical performance highly enhanced



THERMOSAÏC® TECHNOLOGY

High value recycling of thermoplastic composites

- Recovery of thermoplastic composite production waste
- Keep the intrinsic value of the composite
- No separation between fibre and matrice

HIGH-VALUE RECYCLING

HIGH PERFORMANCE MATERIALS

COST-EFFECTIVENESS

LARGE SCALE PANELS

EASILY PROCESSABLE

LOW ENVIRONMENTAL IMPACTS

FLEXIBLE PRODUCTION LINE

SKILLS & SERVICES

- Feasibility studies & Proof Of Concept
- Formulation & Pilot production
- Waste & Recycled material characterization
- Non Destructive Testing
- Ageing behavior studies
- Failure analysis
- Technology transfer
- Support & Training

PILOT PLATFORM "COMPOSITE & RECYCLING"

- **An innovative line dedicated to ThermoPRIME® & Thermosaïc® technologies :**
  - Thermomechanical and "step by step" process
  - Production of new recycled materials with a competitive cost/performance ratio
  - Initial investment and operating cost lower than a continuous production line
  - Line based on usual industrial equipment
  - Large range of thermoplastic matrices & fibre reinforcements processable

- **Equipment for waste preparation**
- **Equipment for use case production (thermostamping press)**
- **Laboratories for mechanical & physicochemical characterization, NDT, testing**