



APPLICATIONS:



CONSUMER GOODS



PACKAGINGS



ENERGY & TRANSPORT

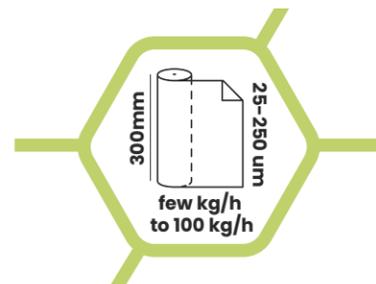
DEVELOPMENT:



FORMULATION & PROCESSING

CURRENT-STATUS

METEOR® pilot line is dedicated to compounding and converting new formulations based on recyclable, bio-based, or bio-degradable materials. The Extensional Flow Mixer METEOR® (patented by IPC) is used to develop new formulations with an efficient dispersion of additives while reducing the overheating, and so the thermal degradation of sensitive material, like PLA.



CHALLENGE

Control compounding parameters for zero material degradation and optimize distribution of the nanofillers

Inline integration of Fused Filament Fabrication 3D printing filament

Extrusion of films of 25-250 um and up to 600 mm in width



FURTHER DEVELOPMENT

A quality control is integrated thanks to an inline rheometer.

Filament die for production of 3D printing filament at 20 kg/h and 2 possible diameters 1.75 and 2.85 mm ± 0.02 mm.

Films width will be up-graded the film exit die from a width of 350 mm to 700 mm.



BENEFITS FOR COMPANIES AND SME'S

Control compounding parameters for zero material degradation and optimized distribution of the nanofillers, Integration of compounding and conversion processes (3D filaments, films/sheets...). Companies will get a unique access to TRL7 extension flow mixing working in continuous mode: 75 kg/h in film extrusion, 10 kg/h in 3D printing filaments extrusion. A production cell will process the materials into final end-products. The pilot line will also propose cutting edge expertise to its customers in rheology, tooling and a wide range of conversion processes (extrusion, injection moulding, thermoforming, 3D printing), to validate on site with a single team formulation to transformation into end-products.

APPLICATION EXAMPLES

IPC will perform compounding of bio-based formulations with microfibers while reducing the thermal-degradation with the extensional mixing technology METEOR.

TC6 UPSCALING OF BIO-BASED STRUCTURAL / AESTHETIC CAR COMPONENTS

IPC will produce 3D printing filaments from bio-based nano-enabled formulations to be used by 3D printing for various applications:

- TC3 Upscaling of bio-based boxes
- TC5 Upscaling of bio-based automotive components fabricated by 3DP
- TC8 Upscaling of fully bio-based fungicide inner shoe soles