

Soft mechanical recycling

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WERKAGENDA
Chemie/Kunststoffen

SAMEN MAKEN WE
MORGEN MOOIER
OVAM



essenscia
Chemistry meets life sciences

vlaanderen-circulair.be



Recycling Technologies

1

Thermo-Mechanical
Hotmelt (PES/PA/PP)

2

Chemical-Polymer
Pulping/Solvent-based/
Hydrothermal

Chemical-Monomer
Methanolysis/
Glycolysis/Hydrolysis/
Enzymatic

Thermo-Chemical
Gasification

3

Mechanical
Traditional:
Use physical forces
"Shredding"

4

Study
McKinsey, 2022
Euratex

New Technology
"Soft Mechanical"
Use physical forces
but in a more gentle,
slower way than
traditional mechanical
recycling



Compared

PRODUCTION LINE

Capacity 24/7

RESULTS F-2-F (UHML)

Cotton

Polyester Fibers

Meta Aramids

100% REJUVENATED Cotton Yarns

OE Spinning (34/1Nm)

RS Spinning (24/1Nm)

Purfi

150->170 m

2 à 3000 Ton/y (500Kg/h)

22 – 32 mm

28 – 36 mm

38 – 48 mm

22 – 25 mm

+ 25 mm

Shredding

10 à 20 m

10 – 16 mm

15 – 20 mm

18 – 24 mm



100% Recycled Cotton

- > **Nm 20/1** (12/1Ne)
- > 100% P.I. waste
- > 100% Local-for-Local
- > 100% made in Belgium

Rejuvenating Fibers
for a Circular World



Scan & Discover
Environmental impact of bathrobes
made with 100% Purfi cotton
compared to virgin cotton




**3 hours
in the shower**
Water
97 % water reduction
1380 liters of H₂O


**3,2 years
of smartphone
usage**
Energy
43 % energy reduction
46,2 MJ


1 parking spot
Land
Reduction of 98 %
land usage 10,16m²


50 km by car
Emissions
49 % CO₂ emissions
reduction 5 kg of CO₂



Real PurFi results



**It's time for the textile industry
to reconstruct its value chain
in favor of the environment
and local communities.**



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