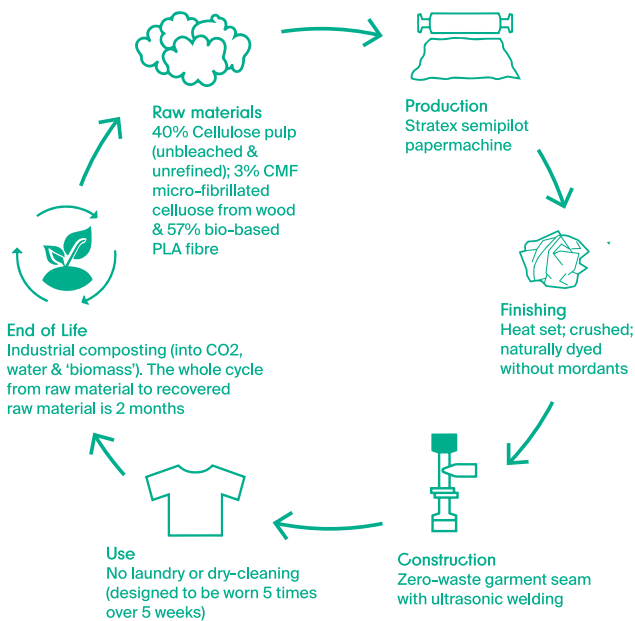
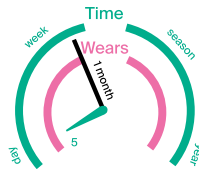


100% Bio-based materials and finishes designed to be recoverable at end of life through industrial composting.

Pulp-It T: Paper recipe no 7



Made from a new bio-based nonwoven material co-developed by RISE & UAL. The 45 g/m² paper in this prototype is composed of 40% sulphate softwood paper pulp from sustainable forests, unbleached and unrefined; 3% CMF microfibrillated cellulose from wood; 57% polylactide (PLA corn starch) staple fibres. The main attribute of this material is its thermoplastic quality enabling many processes not usually possible with paper.

Credits:
Concept & Finishing: Kay Politowicz & Kate Goldsworthy, UAL, UK
Material Development: Hjalmar Granberg & Ann Marie Zachrisson, RISE, Stockholm, Sweden
Natural Dye: Penny Walsh, AO Textiles, London Laser
Welding: Supported by TWI, UK Ultrasonic
Seaming: Alan May, Triumph Needle, UK
Recovery Testing: Tatjana Kapenja, RISE, Stockholm

Pulp-It T: Paper recipe no 7

The use phase of this product is intentionally short. It is designed to be worn around 5 times without laundry or maintenance intervention and then returned for recovery and reprocessing.

The whole cycle from raw material through use to recovery is estimated at 2 months. Over a period of 50 years it is estimated that there would be 300 ownership cycles (and 1500 wears).

The paper is prepared using a heat process to fix the fibres for further finishes and 'crushed' to soften the surface. The material is then naturally dyed without mordants, including dyestuffs: cochineal (Striped-T) and natural indigo (Panel-T). Laminated layers of PLA are added through various laser and welding processes.

The garment is constructed using a Pfaff Ultrasonic machine as an alternative to traditional stitched seams.



At the end of the 5-week wear period, the user returns the top for industrial composting (into Co₂, water & 'biomass'). This is the beginning of the next material cycle.



Penny Walsh from AO Textiles, London, worked with us to find the best natural dyes for the new material. Here she works with natural indigo for the Pulp-It samples.



The materials were tested for their compostability at RISE under Tatjana Karpenja and her team. The results are available in her 2019 report.