



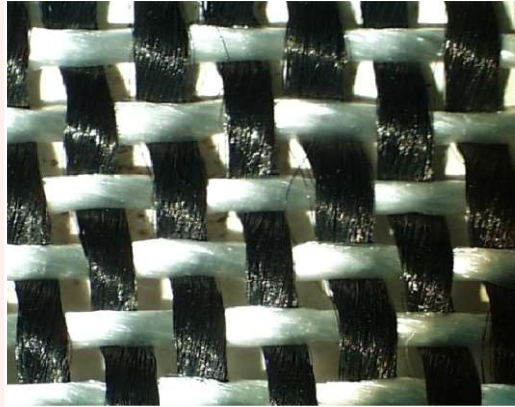
Just imagine: a soft, warm biker's jacket that is electrically heated or a window shutter that automatically closes at the first drop of rain. smartcel<sup>™</sup> energy makes it all possible, with the aid of electrically conductive functional polymers integrated in the smartcel<sup>™</sup> Lyocell functional fibers. **These fibers obtain consistent infrared warmth in textiles at relatively low energy consumption.**

The electric resistors are infinitely variable, so that their functional effect can be regulated. **The voltage range spans from 12 to 230 Volt.**

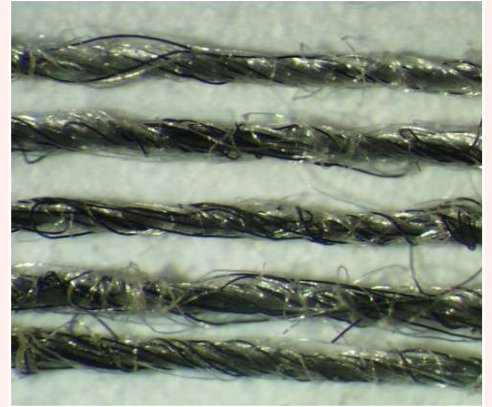
Due to the light weight of these fibers, there are practically no limits to the possible applications of smartcel<sup>™</sup> energy in textile fabrics. Other extremely promising fields include moisture sensors, anti-static equipment and heating technology, such as electric blankets or floor heating systems. The fully developed technology of smartcel<sup>™</sup> energy is therefore finding innovative uses in various domains such as the construction industry and industrial health and safety.

## Fields of application

- Textile heaters: diving suits, motorbike clothing, winter sports clothing;
- Heating systems: heating mats, floor heating;
- Anti-statics: industrial protective clothing, carpets
- Sensors: detectors for humidity, liquids and solids, e.g. in shutters, floor screed monitoring or the activation of water pumps, e.g. for flood prevention.



**Woven material for heating applications**



**antistatic yarn PE**

Components of the filaments: 50% cellulose, 50% conductive soot

## Chosen data of heating filaments

Features	Data
Single filament strength	1 tex
Total yarn count	150-170 tex (if desired even finer)
Tear resistance (based on yarn count)	9-10 cN/tex (single fiber) 60-70 mN/tex (filament)
Elongation	14-15 % (single fiber) 6,5-7,5 % (filament)
Color	deep black
Specific electric contact resistance after hydrothermal annealing at 130° C	0,4-0,5 Ω cm
Electric series resistance after hydrothermal annealing	40-55 kΩ/m
Appearance: on paperboard coil (cheese cone)	L = 280 mm Ø = 100 mm
Net weight of coil	≤ 1000 g

Other types of fiber upon request