

Footfalls Smartex Limited

Textile sensing platform

Revolutionary process controls yarn-to-yarn interaction and movement of micro-mechanical structures in knitted fabrics.

Smart technology

Footfalls Smartex Limited tech uses conductive yarn to create a repeatable sensor network with mathematically determined textile structures.



Based in the UK, Footfalls Smartex Limited was founded in 2010 by Simon McMaster. The skills at work contribute to everything from intelligent textile research to technical knit design and beyond.

Thanks to combined efforts, the team developed a proprietary process for manufacturing smart textiles. Through nano-scale interactions, Footfalls Smartex Ltd. produces pressure sensors via knitted conductive yarns. The textile is the sensor™.

bekaert.com/smarttextiles

The challenge

Footfalls Smartex Ltd.'s innovations forego the need for mini electronics, wires, and more. A unique knitting structure combines intelligent textile structures with conductive yarn to produce a repeatable, sensitive sensor network. Their sensors also integrate into mattresses, wheelchairs, socks, shoes and cushions.

Over the last few years, though, they began experiencing supply issues. When their supplier was unable to meet demand, they sought out a new one. This is where Bekaert comes in. Footfalls Smartex Ltd. needed conductive yarn that met the demands of repetitive pressure while maintaining communication and very little signal noise.

The solution

Bekaert developed a proprietary yarn for Footfalls Smartex Ltd, with polyester/Bekinox® yarn spun with other components, optimizing the ratio for the ideal product, and patented the composition.

Our smart yarn is designed to offer precise resistance through pressure. It provides a higher difference in electrical resistance under applied pressure. The yarn returns to original resistance once the pressure is relieved. Footfalls Smartex Ltd.'s knitting structure magnified this effect.

Bekaert collaborates with start-ups for world-changing ideas and innovates with Footfalls Smartex Ltd. for healthcare and beyond.