

Case Study Electro-Conductive Fabrics

The
Technical
Textiles
Specialist



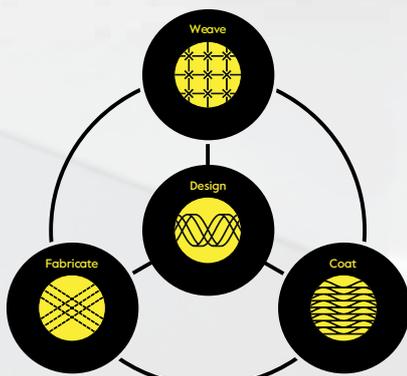
Arville



An Integrated Approach To Textile Design

Arville are experts at all areas of the technical textile manufacturing process. Our integrated approach means we can develop highly complex technical textiles, tailoring the yarn types, weave constructions, finishes and coatings to produce fabrics which are custom-made to perform to consistently high standards in even the most demanding of applications.

At the heart of this lies our ability as technical textiles specialists to design the manufacturing processes, which allows us to develop for our customers an end product of high-quality fabric, engineered to have performance characteristics that exactly meet their requirements.



Case Study Electro-Conductive Fabrics

? Background

Arville have a long history in manufacturing bespoke filtration media fabrics which are used across a wide range of industries for wet or dry separation and filtration purposes. One such example is with a large global pharmaceutical organisation who had a specific requirement for a process fabric to be used in the production of a powdered drug.

The customers end requirement was for an end-form multi-pocket fabric bag to be used within a fluidised bed dryer unit (commonly used in the manufacture of pharmaceutical powders). As the process was intensive and involved the use of solvent evaporation there were concerns from a safety perspective that standard filtration fabrics would not be suitable for the application.

Textile materials, natural or man-made, are predominantly insulators and as such do not promote the flow of electricity through their structure. This inability to move electrical current causes it to remain static on the surface of the materials - sufficient build up of this can make electro-static discharge more likely. For industrial processes such as the filtration and separation of liquids, gasses, powders and suspensions - especially those that involve highly flammable fossil fuels and solvents - electro-static discharge can present a high risk of ignition.

@ Project Brief

- To produce a high specification fabric to be employed where filtration and separation forms a critical part of the manufacturing process.
- The fabric must act to dissipate static charge build-up and therefore minimise the risk of electro-static discharge.
- The fabric must be chemically inert to the industrial process.
- The fabric has to be micron-rated to a specified particle size.
- The fabric must give consistency of performance throughout the life cycle of the filtration media.

@ Solution

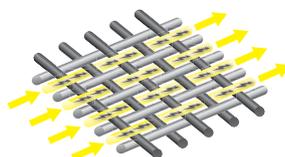
Our in-depth understanding of the principles behind the inherent characteristics of the yarn types used in weaving standard filtration textiles meant that we knew how to integrate additional yarns within the weave construction which would address the problem of static build up without compromising the fabrics ability to perform its primary function as filtration media.

We created a bespoke weave structure that included stainless steel to dissipate static electricity and allow it to discharge through the fabric - subsequent versions have been produced which substitute stainless steel for carbonised filaments.

✓ Outcome

The fabric was woven from a base fibre type which was known to be inert to the chemical process. Using our in-house laboratory we tested the fabric to ensure that it met the parameters specified by the customer in terms of porosity and flow-rates, indicating that it would give good performance throughout the life-cycle of the bag with good cake release and resistance to blinding.

As the customer required the product as an end-form bag and not as roll form fabric, our in-house fabrication unit worked to their drawings and crafted the fabric into finished bags which were ready to use within the fluid bed dryer unit. This also meant that they were able to use Arville as a one-stop-shop for their requirements, eliminating the need for any extra contractors to fabricate the bags. The finished fluid bed dryer bags were produced to meet their manufacturing requirements exactly, ensuring high quality and consistency of their processes as well as saving time and reducing overall costs.



Conductive yarns and sensors can be woven into fabrics to integrate a multitude of new technologies.

To find out more about how we can help with your requirements please contact us T: +44 (0) 1937 582735 or email sales@arville.com

