UniformReuse.co.uk Case Study

Carrington Career and Workwear

Key facts

• Carrington Career and Workwear (CCW) imports workwear fabrics in the greige state, then prepares, dyes, prints and finishes the fabrics for use in corporate and workwear garments.

• As a business it is accredited with ISO14001 and 9000 and all the fabrics display the Oeka-Tex label.

Background

CCW is the largest supplier of workwear and technical fabrics in the U.K., and one of the market leaders in Europe. CCW imports workwear fabrics in the greige state (not yet bleached or dyed), for preparation, dyeing, printing and finishing, creating fabrics which are ready for use in corporate and workwear garments. The fabric is processed in the Adlington based plant – where a processing plant has existed since 1900.

CCW has been part of the Pincroft Group since 1995. Its parent company, Pincroft Dyeing & Printing Co. Ltd, is certified to the International Environmental Management System which complies with the requirements of BS EN ISO 14001:2004. CCW and Pincroft also comply with ISO9000 for Quality Management; CCW for 'warehouse and supply', Pincroft for the more complicated 'manufacturing'. It is a conscientious company, with sustainability high on the agenda. As a business it has won an award based on its effective use of energy, and energy recycling. Heat exchanges in processing are utilised, where the heat from the machinery is used to heat the incoming water for the dyeing process, with a recovery rate of 30-40%.

ISO 14001 specifies the requirements for an organisation's environmental management system. It applies to those environmental aspects over which an organisation has control and where it can be expected to have an influence. It ensures environmental law compliance and continuing improvement of own standards.

Around 120 people are employed within the plant, allowing an output of approximately 600,000 metres per week. All the processes are all fully continuous and once the machine is 'threaded up', a button is pressed and the process begins. This approach is not very labour intensive, therefore wage bills are relatively low; the main costs that CCW has are for energy and dyestuff which are similar across the world.

Problems faced

The reuse of fabrics is an issue CCW has been trying to overcome for a substantial period. Whilst it is sustainable in a number of areas, with energy efficient buildings, and ethically sourced and processed fabrics – all fabrics are Oeko-Tex accredited – end-of-life (EoL) management is the one obstacle it has had difficulty hurdling. The main problem that is the majority of the fabrics that it produces are blends: poly/cotton, and nylon/cotton. The concern associated with this is the separation of fibre types at EoL. There are two methods to accomplish this, either dissolving the cotton in acid, to be left with the polyester, or using highly carcinogenic solvents to dissolve the polyester and retain the cotton, neither of which is desirable.

Even the high visibility coat fabric CCW produces is a polyester fabric, with a cotton back. For this type of garment, in order to get the brightness of the shade, the polyester has to be dyed before applying the cotton backing, so it is classed as a blended fabric. Also, due to the nature of the performance requirements of such a garment, it is commonplace for the seams to be taped, to provide a waterproof quality.

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Any recycling process would require this tape to be removed, creating further cost and difficulty.

Initiatives

Currently, EoL management is still a significant issue for CCW. Although this is an ongoing struggle, the company has delivered on a number of other areas of sustainability. As the dyeing process is one of the principle services provided by CCW, and is notoriously energy intensive, this was one of the first themes focussed on. In order to apply dye to a fabric CCW requires heat to activate or impregnate the dye and set the dyestuff. Fabric is bought in, in 'loom state', this is greige if cotton (which needs to be bleached before it is dyed) and white if it is polyester. For blended fabrics, the fabric has to be dyed twice; one machine is used, but it requires two classes of dye and two different processes. This is needed to ensure that each component achieves the right colour.

When going down the route to implement heat recovery, a project leader was allocated to consider the options available to the company and a Koenig off-the-shelf system was selected. It was a significant initial investment, but the payback period was less than three years. Within the factory, the stenter machines generate a great deal of heat, which would typically be lost to the atmosphere. Instead, this is pumped up through the chimney stacks, going through what is basically a radiator that heats the water. The heated water from the radiators is stored in a holding area in order to be used in the dyeing and finishing processes where it needs to be at boiling point. By utilising this process, the water is already at 50-60°C, requiring far less energy to bring it to boiling point than if heated from cool. The stacks are also fitted with filters to remove any oily residue from the polyester processing, resulting in final emissions to the atmosphere of just cool air, with a small amount of steam.

Some fabrics can be shredded to be utilised as insulation for the building trade. Much of the fabric used in CCW garments is treated to be flame retardant, for specialised protective clothing, and this is an area that the company would like to look into for higher end value use.

"Fabrics could be shredded down to the fibre in order to make fibre filling insulation for the building industry rather than landfill. For fabrics with flame retardant properties, there is considerable value in the material – if these inherent properties could somehow be utilised at end-of-life, there would be significantly less loss of resource value"

Roger Bellfield, Technical Director, Carrington Career and Workwear

Until better EoL strategies can be determined, CCW has attempted to maximise the length of service life of a garment, by employing a labelling system giving specific, in-depth care instructions. This will help the wearer minimise wear on the garment and reduce frequency of replacement.

Outcomes

Accreditation from the internationally recognised Oeko-Tex scheme has given CCW credibility across Europe and ensures no hazardous substances are used in the production of its products. For more detail about Oeko-Tex accreditation, see the Klopman case study. Adhering to the ISO 14001 standard demonstrates that the company is not only practisng a high standard of environmental management, but is dedicated to continuously improving its current systems.

By maximising energy efficiency at the plant, CCW has reduced annual CO2 emissions by 4,290 tonnes – see Carrington web site.

Additional Information

Carrington Career and Workwear
www.carrington.uk.com

For contact information please search the Directory on www.uniformreuse.co.uk/directory