Durability of blind hems

ASOS identified a potential risk in the product durability of blind felled hems on tailored trousers due to hem failure, i.e. falling after washing or wearing.

WRAP worked with ASOS to trial a bonding seal on both menswear and womenswear tailored trousers.

- ASOS wanted to trial an improved construction for tailored trousers' blind hems, using Coats Hemseal bonding thread.
- Durability washes provided ASOS with a quick overview of the Coats Hemseal bonded hems' performance versus the standard construction.
- The trial indicated that the bonded hem construction performed particularly well on lightweight garments.

ASOS identified an opportunity to improve the durability of the blind felled hems on their formal trousers, identified as a risk for hem failure due to the delicate nature of the hem finish. The thread manufacturer Coats was identified as a partner to work with on this pilot, as they produce a ‘fusible low-melt thread that creates a reliably secure hem’ called ‘Hemseal’.

ASOS selected tailored trousers for both mens and womenswear for the trial, a lightweight fabric trouser and a heavy weight fabric trouser for each. Four samples of each trouser were picked, three to be washed and one kept as a control.

The trial

Once the garment types were selected, samples of each were returned to specific suppliers to be prepared. In one of the trouser legs, the Coats Hemseal thread was applied within the overlock stitch and bonded to the hem. The other leg was left as per standard blind stitch construction.

The prepared samples then underwent five durability washes at 50°C. All garments were washed together with the fabric facing outwards.

Durability washes are readily used in extended wash trials as they represent an accelerated number of washes. One durability wash is the equivalent of five home washes.

Results of the wash test trials

Menswear lightweight trousers

On both trouser legs the hems stayed up throughout all washes.

Coats Hemseal bonded leg

The finished construction felt harsh, possibly indicating that the sealing temperature was too high. Further, the garments felt tight which may reflect a slight fabric shrinkage accentuating this issue (the wash trial performed at 50°C, while the care guidance for these trousers indicated 40°C maximum).

Standard construction hem

The fell stitch appeared to look tight; possibly due to the garment being washed at a higher-than-advised temperature. The external appearance of the hem started to look poor with ‘stab’ marks showing where the thread had caught the fabric.

Menswear heavyweight trousers

Standard construction hem

The thread showed gaps as the hem started to fail.

Menswear lightweight trousers (Coats Hemseal applied to left leg)

Womenswear heavyweight trousers

Coats Hemseal hem

The application worked well and felt soft to the touch. The hem stayed up across all pairs.

Standard construction hem

The hem also stayed up on this leg on all samples, and performed well throughout all washes.

Womenswear lightweight trousers

Coats Hemseal hem

The application was successful in ensuring the hem stayed up on all washed garments. The application of the Hemseal was appropriate and had a soft handle. On one sample, the Coats Hemseal was applied to both legs; for the other two pairs, the standard construction hem started to fail. It was also noted that the standard construction hem felt loose, though this is typical for a lightweight garment so as not to disrupt the external appearance of the trousers.

Womenswear lightweight trousers (Coats Hemseal applied to right leg)

Overall conclusions

Lightweight garments performed better with the Coats Hemseal bonded hems, as the standard construction does not have a fell stitch to provide additional strength to the hem.

It is important to use the correct amount of Coats Hemseal thread, and to bond it at the correct temperature, to ensure that the application does not feel scratchy or heavy.

Next steps

ASOS is going to carry out some further trials with suppliers to decide which products to use the process on, and hope to implement it on the appropriate product range in the near future.

"Comparing the performance of lightweight and heavyweight fabrics has given us an opportunity to review the durability of the hems across a number of products within our range."

Josie Ellis, Senior Garment Technologist WW

"At ASOS we are constantly looking at ways of improving our product and providing our customer with a fantastic offer. Offering a durable product is a sustainable product."

Marsha Emanuel, Senior Garment Technologist MW

WRAP's vision is a world where resources are used sustainably. It works in partnership with governments, businesses, trade bodies, local authorities, communities and individuals looking for practical advice to improve resource efficiency that delivers both economic and environmental benefits.

Our mission is to accelerate the move to a sustainable resource-efficient economy through:

- **re-inventing** how we design, produce and sell products;
- **re-thinking** how we use and consume products; and
- **re-defining** what is possible through recycling and re-use.

This case study was developed as part of the Sustainable Clothing Action Plan (SCAP). This is part of a series of industry trials focussed on extending clothing life, based on improvement actions identified in the Sustainable Clothing Guide. The guide highlights how interventions can be made in design and throughout the supply chain, to make clothing last longer.