

New Poser Coolover Sling Fabric- some comparisons.

10/04/2014

Subash Anand, Professor of Technical Textiles at Bolton University has carried out tests on some of the more popular fabrics used in the construction of Allday slings. Included in the tests were the corrugated 3d spacer (the one that looks like corduroy), black woven spacer (similar to that used on back packs, jacket linings and in shoes) and our latest blue *COOLOVER*.

Test 1 Thermal resistance. This is a test of how insulating the fabric is.

Dry thermal resistance	$W^{-1}KM^2 \times 10^3$	
Coolover	25.3	Best result - least insulating
Black Spacer	92.5	Nearly 4 x worse
3d Spacer- Corrugated	96.9	Worst result - most insulating

The tests do not include the effect of the Omnitherm ingredient. The more insulating the material, the more the user heats up.

Test 2 Thermal absorption. How much heat can the fabric take away?

Dry thermal absorption	$W m^{-2} s^{1/2} k^{-1}$	
Coolover	142	Best result - most absorption
Black Spacer	65	2 x worse
3d Spacer- Corrugated	64	Worst result – least absorption

This test was conducted at below normal skin temperature. Bear in mind that the Omnitherm ingredient does not start working till above skin temperature! Even without the effect of the Omnitherm, the knit of this fabric is performing well.

Test 3 Permatest. How well does sweat evaporate through the fabric?

Permatest	Water Vapour permeability %	Resistance to evaporative heat loss ($m^2 Pa W^{-1}$)	
Coolover	46.6	4.08	Best result -Most evaporative
3d Spacer- Corrugated	39.6	8.7	2 x worse
Black Spacer	24.7	15.4	Worst result – least evaporative

So Coolover has good breathability and low resistance to evaporation.

Test 4 Absorption- How quickly does water move through the fabric?

Absorption (gg ⁻¹)		
Coolover	2.7	Best result - fastest
Black Spacer	1.134	Less than half as fast
3d Spacer- Corrugated	.761	Worst result - slowest

The variable denier in the Coolover moves water the fastest from one side of the fabric (the user side) to the other (the outside). This is a good indicator of how well the fabric can move sweat away from the skin to prevent chilling and skin softening.

Test 5 Wicking-how much water is absorbed and how widely it is spread over the surface to promote evaporation

	Length	Width	Area	
Coolover	85.6	87.8	86	Best
3d Spacer- Corrugated	82	86	84	Close second
Black Spacer	40	43	41.5	Worst

Coolover is seen to spread water over a wide area to evaporate quickly.

6 Thickness

	Thickness mm
Coolover	0.68
3d Spacer- Corrugated	4.1
Black Spacer	4.6

At less than 1mm thick, Coolover is the thinnest.

In Conclusion Professor Anand writes:

“Coolover has a very efficient method of moving moisture from the client’s skin. The design of the knit ensures that water vapour can pass away from the user but that it insulates well to prevent clients from getting cold. Should the user get too hot the Omnitherm absorbs excess heat when the skin heats above 33’c.”

Coolover Allday Sling Fabrics

There are many great technical fabrics available; however most are designed for the sports industry rather than for a particular role i.e sling manufacture.

We set out to design a fabric to better meet the needs of custom moulded seating users who have been looking for a true “All day” or “sit in” sling.

The specification was:

- The fabric needs to be thin enough to fit between the client and the mould but strong enough to take the load.
- It needs to stretch to conform for comfort and pressure but not stretch in the lift.
- It must be temperature regulating, with as much active ingredient as possible without compromising the strength of the yarn.
- It must have the lowest possible insulating characteristics.
- It must keep the skin as dry as possible without chilling the skin

Following 2 years of development and trial we were able to produce a yarn and have that yarn knitted in such a way as to meet all of the above criteria. The resulting Coolover fabric is less than a millimetre thick, meets all the stretch and strength criteria and is extremely comfortable for users in moulded wheel chairs.

Following test in Bolton University, Subhash Anand wrote

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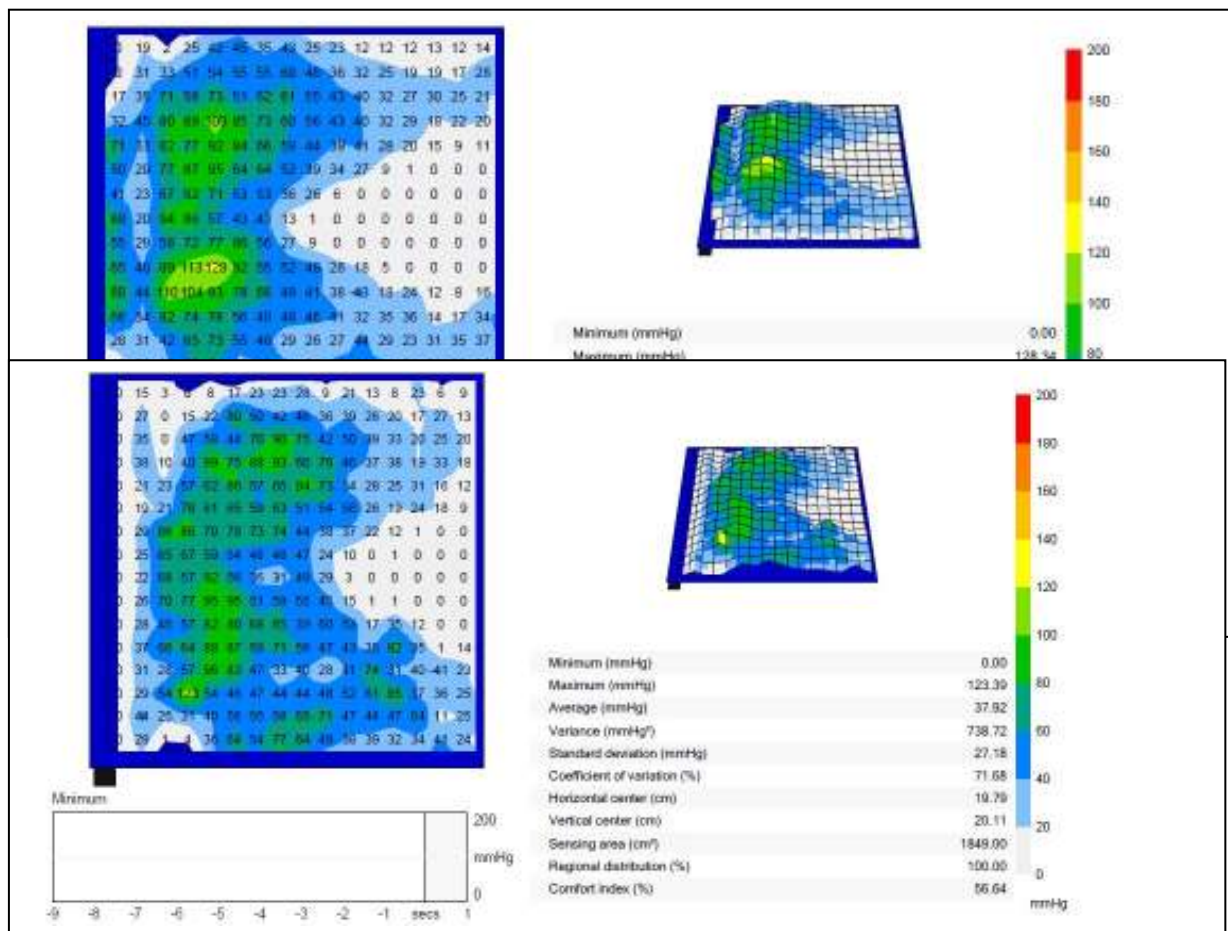
Symmetrikit Postural Care - Poser Allday Slings, pressure relief study

May 2014.

This single study was undertaken to assess whether our new Poser Coolover slings reduce the effectiveness of pressure relieving wheelchair cushions.

The model used for this study was an adult male 6'4" tall with a weight of around 17st. The chair is a standard 9l style wheel chair fitted with a medium risk Lowzone wheel chair cushion with feet resting on the floor.

Before testing the model with a sling, a base line pressure reading was taken with just the chair and cushion. The figures are relatively high due to the nature of the chair and the model but for comparison these illustrate the variations.



made no significant difference. It should be noted that any variation of less than 5% is not a meaningful change as the model has had to be moved to fit the sling.

Allday slings are valuable in that opportunities to cause damage through shear are reduced. This sling is also particularly useful in that it helps to reduce moisture and actively regulates temperature, both of which are risk factors when considering tissue viability.

However, as with any new positioning equipment, there should be an implementation period with increased frequency of tissue inspection. Following successful implementation, should there be a change in the user's condition, then a re-evaluation is recommended.

Slings should always be fitted by a competent individual and special attention paid to any creases in sling or clothing.

