



Testing of Protective Clothing Material

Test item **Quality 109, knitted fabric**

Type **Protective clothing against heat and flame**

Customer **Devold of Norway AS**
 N-6030 Langevåg
 NORWAY

Applied method **EN ISO 11612:2008**


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1. Description and identification of test item

Tested item: Quality 109, grey/ black knitted fabric
50% Merino Wool/ 50% Lenzing FR Viscose

Seam: Flat lock seam

Washing instructions: 

2. Scope of testing

Testing dates: 2010-09-22 - 2010-09-27
The tests were performed at FIOH.

The following tests were carried out:

Requirement		Test method
Pre-treatment	EN ISO 11612:2008, 5.2	ISO 6330:2000
Limited flame spread, material and seam -after pre-treatment	EN ISO 11612:2008, 6.3	EN ISO 15025:2000, method B

2.1 Sampling and conditioning

Receiving date: 2010-09-16

Condition: Intact

Sampling method: The customer supplied material and seam samples.
FIOH folded the edge of test specimens for edge ignition.

Conditioning: Samples were conditioned at least 24 hours in an atmosphere having a temperature of $(20 \pm 2)^{\circ}\text{C}$ and a relative humidity of $(65 \pm 5)\%$ before testing.

2.2 Pre-treatment

Washing parameters:

Washing machine:	Type A washer	Type of detergent:	IEC reference detergent
Washing procedure:	6A, temperature 40°C	Total dry mass:	5 kg
Drying procedure:	C, flat dry	Ballast:	Knitted fabric (310 g/m ²)
After drying flat pressing:	110°C		

Material samples were washed five times and dried after last washing procedure.

3. Test results

3.1 Flame spread, edge ignition

Material, edge ignition (code A2)

Specimen after pre-treatment	Afterflame [s]	Afterflow [s]	Flaming to top or either side edge	Hole formation, flaming, molten debris
1 ↑	0	0	no	no
2 ↑	0	0	no	no
3 ↑	0	0	no	no
4 →	0	0	no	no
5 →	0	0	no	no
6 →	0	0	no	no
Mean	0	0	no	no

↑ → warp direction

Seam, edge ignition (code A2)

Seam specimen after pre-treatment	Afterflame [s]	Afterglow [s]	Hole formation, flaming debris, flaming to top or either side edge	Seam condition
1	0	0	no	closed
2	0	0	no	closed
3	0	0	no	closed

4. Summary of the test results

Test	Requirement	Result
Limited flame spread, code A2 -after pre-treatment	EN ISO 11612:2008, 6.3 no flaming to the top or either side edge; no flaming or molten debris; afterglow shall not spread, no hole formation Afterflame time ≤ 2s, Afterglow time ≤ 2s Seam shall not separate	Material and seam meet the requirement of edge ignition Level of performance: A2

End of test report