



Testing of Protective Clothing Material

Test item **Shield socks, art 808-000**

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: Black/grey shield socks,
art 808-000



Description of material: 47% FR Lenzing/ 32% WO/ 10% PA/ 9% elastane/ 2% Nega-Stat

Washing instructions:



2. Scope of testing

Testing dates: 2014-02-07 - 2014-03-14
The tests were performed at FIOH.

The following tests were carried out:

Requirement		Test method
Pre-treatment	EN ISO 11612:2008, 5.2	ISO 6330:2012
Limited flame spread, surface ignition - after pre-treatment	EN ISO 11612:2008, 6.3	EN ISO 15025:2000, method A
Convective heat -after pre-treatment	EN ISO 11612:2008, 7.2	ISO 9151:1995
Radiation heat, 20 kW/m ² -after pre-treatment	EN ISO 11612:2008, 7.3	ISO 6942:2002, method B

2.1 Sampling and conditioning

Receiving date: 2014-01-28

Condition: Intact

Sampling method: The customer supplied the socks, from which specimens were cut off. Specimens were taken from the black part of sock which best met the specimen size requirement

Conditioning: Samples were conditioned at least 24 hours in an atmosphere having a temperature of (20 ± 2)°C and a relative humidity of (65 ± 5)% before testing.



2.2 Pre-treatment

Before testing the sock samples were washed five times. Washing parameters:

Washing machine:	Type A washer	Total dry mass:	2 kg
Washing procedure:	3N, temperature 30°C	Type of detergent:	IEC reference detergent
Drying procedure:	C, flat dry	Ballast:	Knitted fabric (310 g/m ²)
After drying flat pressing:	No		

3. Test results

3.1 Flame spread

Surface ignition (code A1)

Specimen	Afterflame [s]	Afterglow [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 →	1	0	no	no
5 →	0	0	no	no
6 →	0	0	no	no
Mean	0	0	no	no

↑ → warp direction

3.2 Convective heat

Specimen	HTI t ₂₄ [s]
1	21,40
2	20,70
3	20,40
Lowest value	20,40

3.3 Radiant heat

Heat flux density: 20 kW/m²

Specimen	RHTI t ₂₄ [s]
1	31,70
2	31,70
3	32,15
Lowest value	31,70



4. Summary of the test results

Test	Requirement	Result
Limited flame spread, code A1 -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 $\leq 2s$, Afterglow time $\leq 2s$	Shield socks meet the requirement Level of performance: A1
Convective heat, code B -after pre-treatment	EN ISO 11612:2008, 7.2 Heat Transfer Index HTI 24 [s] B1 4,0 - 10,0 B2 10,0 - 20,0 B3 over 20,0	Shield socks meet the requirement Level of performance: B3
Radiation heat, code C 20 kW/m ² -after pre-treatment	EN ISO 11612:2008, 7.3 Radiant Heat Transfers factor RHTI24 [s] C1 7,0 - 20,0 C2 20,0 - 50,0 C3 50,0 - 95,0 C4 over 95,0	Socks meet the requirement Level of performance: C2

End of test report