

Test Report

SL52405250853901TX

Date: January 18, 2024 Page 1 of 7

WUXI DEEP-PROTECTION TEXTILE

SECOND FLOOR, BUILDING 1, NO.36, YANJIN ROAD, HUIZHAN DISTRICT, WUXI, JIANGSU.

The following sample(s) was/were submitted and identified on behalf of the client as:

Sample Description : (A)Woven fabric (60% Modacrylic 38% Cotton 2% Antistatic Fiber (240±10)g)

Sample Color : (A)Dark blue

Composition : (A)60% Modacrylic 38% Cotton 2% Antistatic Fiber

Sample Dimension/Size : 3.5M

Style No. : DP-MC2-DB-240W

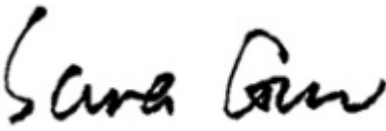
Proposed Care Instruction : -

Test Performed : Selected test(s) as requested by applicant

Sample Receiving Date : Jan 11, 2024

Testing Period : Jan 11, 2024 - Jan 18, 2024

Test Result(s) : Unless otherwise stated the results shown in this test report refer only to the sample(s) tested, for further details, please refer to the following page(s).

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd

Sara Guo (Account Executive)



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Protective Clothing- Clothing to Protect against Heat and Flame – Minimum Performance Requirement (EN ISO 11612:2015)

Conclusion	A	Remark
Clause 6.2.1 Heat Resistance at A Temperature of (180±5) °C	PASS	
Clause 6.3.2 Limited Flame Spread (Code Letter A1)	PASS	
Clause 6.4 Dimensional Change after Domestic Washing	PASS	
Clause 6.5.1 Tensile Strength	PASS	
Clause 6.5.2 Tear Strength	PASS	
Clause 7.2 Convective Heat (Code Letter B)	Level B1	
Clause 7.3 Radiant heat (code letter C)	Level C1	
Clause 7.5 Molten Iron Splash (Code Letter E)	Level E1	

Remark(s) : PASS=Meet General Requirement



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Test Result

Protective Clothing- Clothing to Protect against Heat and Flame – Minimum Performance Requirement
EN ISO 11612:2015

Clause 6.2.1 Heat Resistance at A Temperature of (180±5) °C
(ISO 17493:2016)

Sample A

After 5 Washes

Material:

	Unit	#1	#2	#3	Ave.
Shrinkage-Lengthwise	%	-0.4	-0.5	-0.5	-0.5
Shrinkage-Widthwise	%	-1.7	-1.5	-1.6	-1.6
Ignition(Y/N)	-	N	N	N	/
Melting(Y/N)	-	N	N	N	/

Conclusion: Pass

Requirement:

- 1) Y: yes; N: no; (-) Means Shrinkage
- 2) Fabrics shall not shrink by more than 5% at a temperature of 180±5°C.
- 3) Test samples shall not ignite or melt.
- 4) At least 5 min after the completion of the test, the closure system can be opened at once.

Wash procedure: ISO 6330:2021:Using horizontal axis, front-loading type machine; Procedure No.3N, Machine Wash At 30°C; with 2kg total dry mass (Type III (100% Polyester) Ballast+Specimen) and 20±1 g ECE reference detergent 98 without optical brightener, Line Dry

Clause 6.3.2 Limited Flame Spread (Code Letter A1)
(ISO 15025:2016, Procedure A)

Sample A

As received:

Single layer material

	Lengthwise			Widthwise		
Specimen	1	2	3	1	2	3
Afterflame time (s)	NIL	NIL	NIL	NIL	NIL	NIL
Afterglow time (s)	NIL	NIL	NIL	NIL	NIL	NIL
Any flame to reach the upper or either vertical edge	N	N	N	N	N	N
Flaming or molten debris	N	N	N	N	N	N
Hole formation(≥5mm)	N	N	N	N	N	N



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After 5 Washes:

Single layer material

	Lengthwise			Widthwise		
Specimen	1	2	3	1	2	3
Afterflame time (s)	NIL	NIL	NIL	NIL	NIL	NIL
Afterglow time (s)	NIL	NIL	NIL	NIL	NIL	NIL
Any flame to reach the upper or either vertical edge	N	N	N	N	N	N
Flaming or molten debris	N	N	N	N	N	N
Hole formation(≥5mm)	N	N	N	N	N	N

Conclusion: Pass

Remarks:

- 1) Y: yes; N: no; N/A: not applicable
- 2) Requirement:
 - a) Afterflame time shall be ≤2s.
 - b) Afterglow time shall be ≤2s.
 - c) No specimen shall give flaming or molten debris.
 - d) No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge.
 - e) No specimen shall give hole formation of 5mm or greater in any direction, except for an interlining that is used for specific protection other than flame protection.
 - f) Additional requirements for seams, shall not separate at the seam.
 - g) Additional requirements for hardware, the closure system can be opened at least once after test.
 - h) For exposed hardware, the hole formation and the spread of flame to the outer vertical edge or lower edge of the hardware does not apply.

Wash procedure: ISO 6330:2021:Using horizontal axis, front-loading type machine; Procedure No.3N, Machine Wash At 30°C; with 2kg total dry mass (Type III (100% Polyester) Ballast+Specimen) and 20±1 g ECE reference detergent 98 without optical brightener, Line Dry

Clause 6.4 Dimensional Change after Domestic Washing

(EN ISO 3759:2011/EN ISO 5077:2008/EN ISO 6330:2021;Using horizontal axis, front-loading type machine; Procedure No.3N, Machine Wash At 30°C; with 2.0±0.2kg total dry mass (Type III (100% Polyester) Ballast+Specimen) and 20±1 g ECE reference detergent 98 without optical brightener, Line Dry)

After 5 Washes

	Unit	A	Requirement
Lengthwise	%	-2.9	±3%
Widthwise	%	-1.6	±3%

Remark: (+)Means Growth; (-)Means Shrinkage



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Clause 6.5.1 Tensile Strength

(ISO 13934-1:2013)

A

After 5 Washes	No. 1	No. 2	No. 3	No. 4	No. 5	Average	Requirement
Machine Direction(N)	800	800	790	790	780	790	Min.300N
Cross Direction(N)	570	580	550	600	540	570	Min.300N

Conclusion: Pass

Remark:

All the individual results of the specimens shall meet the performance requirement.

Washing Procedure: ISO 6330:2021:Using horizontal axis, front-loading type machine; Procedure No.3N, Machine Wash At 30°C; with 2kg total dry mass (Type III (100% Polyester) Ballast+Specimen) and 20±1 g ECE reference detergent 98 without optical brightener, Line Dry

Clause 6.5.2 Tear Strength

(ISO 13937-2:2000)

A

After 5 Washes	No. 1	No. 2	No. 3	No. 4	No. 5	Average	Requirement
Machine Direction(N)	25	27	28	25	25	26	Min.10N
Cross Direction(N)	28	27	25	28	25	26	Min.10N

Conclusion: Pass

Remark:

All the individual results of the specimens shall meet the performance requirement.

Washing Procedure: ISO 6330:2021:Using horizontal axis, front-loading type machine; Procedure No.3N, Machine Wash At 30°C; with 2kg total dry mass (Type III (100% Polyester) Ballast+Specimen) and 20±1 g ECE reference detergent 98 without optical brightener, Line Dry

Clause 7.2 Convective Heat (Code Letter B)

(ISO 9151:2016;Calorimeter: Method B;

Gas used: Propane)

A

After 5 Washes	No. 1	No. 2	No. 3	Average
Time For 24°C	6.6	6.4	6.8	6.6
Temperature Rise(s)				

Recommended Level: Level B1

Remark:

1) Heat transfer index, HTI: Mean time, in whole seconds to achieve a temperature rise of (24±0.2)°C.

2) Performance levels: Convective heat test (range of HTI24 (s))

Level B1: 4.0s≤ HTI24 < 10.0; Level B2: 10.0s≤ HTI24 < 20.0; Level B3: ≥20.0s;

3) All the individual results of the specimens shall meet the performance requirement.

Wash procedure: ISO 6330:2021:Using horizontal axis, front-loading type machine; Procedure No.3N, Machine Wash At 30°C; with 2kg total dry mass (Type III (100% Polyester) Ballast+Specimen) and 20±1 g ECE reference detergent 98 without optical brightener, Line Dry



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Clause 7.3 Radiant heat (code letter C)

(ISO 6942:2022, Method B; Heat flux density: $Q_o=20\text{ kW/m}^2$)

A

After 5 Washes	No. 1	No. 2	No. 3	Average
Time t ₂₄ (s)	13.6	13.9	14.0	13.8

Recommended level: Level C1

Remark:

- 1) Radiant heat transfer index, $RHTI_{24}$: Mean time, in seconds to one decimal place to achieve a calorimeter temperature rise of $(24\pm0.2)^\circ\text{C}$ when testing with a specified incident heat flux density.
- 2) Performance levels of radiant heat test (Heat transfer factor $RHTI_{24}$): Level C1-min.7.0s/ max.<20.0s, Level C2-min.20.0s/ max.<50.0s, Level C3- min.50.0s/ max.<95.0s, Level C4- min.95.0s
- 3) All the individual results of the specimens shall meet the performance requirement.

Wash procedure: ISO 6330:2021: Using horizontal axis, front-loading type machine; Procedure No.3N, Machine Wash At 30°C ; with 2kg total dry mass (Type III (100% Polyester) Ballast+Specimen) and $20\pm1\text{ g}$ ECE reference detergent 98 without optical brightener, Line Dry

Clause 7.5 Molten Iron Splash (Code Letter E)

(ISO 9185:2007)

A

After 5 Washes	No. 1	No. 2	No. 3	No. 4
Initial Mass of Metal(g)	70	70	70	70
Mass of Metal Poured(g)	63	64	62	65
Adhered to The Material	N	N	N	N
Damage of PVC Film	N	N	N	N
Ignite or Not	N	N	N	N

Recommended level: Level E1

Remark:

- 1) Y-Yes; N-No
- 2) The information of metal used
 - i) Iron consisting of at least 93 % by mass of iron and containing the following:
-C:2.8%~3.2%, -Si:1.2%~2.0%, -P:0.3%~0.6%
 - ii) Pouring Temperature $1400\pm20^\circ\text{C}$
 - iii) Pour height $225\pm5\text{ mm}$
 - iv) Specimen angle to the horizontal $75\pm1^\circ$
- 3) Requirement:
 - i. Performance levels of molten iron splash: Level E1-min.60g/ max.<120g, Level E2-min.120g/ max.<200g, Level E3-min.200g.
 - ii. Materials shall not ignite during the test
 - iii. All the individual results of the specimens shall meet the performance requirement.

Wash procedure: ISO 6330:2021: Using horizontal axis, front-loading type machine; Procedure No.3N, Machine Wash At 30°C ; with 2kg total dry mass (Type III (100% Polyester) Ballast+Specimen) and $20\pm1\text{ g}$ ECE reference detergent 98 without optical brightener, Line Dry



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Sample Photo



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