

Test Report

SL52505284685201TX

Date: June 19, 2025 Page 1 of 20

SHANGHAI HANYANG CLEAN TECHNOLOGY CO., LTD.
BUILDING 6, NO. 407 RONGXING ROAD, SONGJIANG DISTRICT, SHANGHAI, CHINA. 201600, CHINA

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

Sample Description : (A/B) Woven garment
(C-E) Woven fabric
(Several pieces of dustproof clothing)

Sample Color : (A) white; (B) blue; (C) pink; (D) yellow; (E) green

Sample Dimension/Size : 2XL, 3XL, 4XL ...

Style No. : H-1109, H-1108, H-1107, H-1106, H-1104, H-1117, H-1118, H-1110, H-1123,
H-1132, H-1133, H-1112, H-1115, H-1121, H-1122

Factory : SHANGHAI HANYANG CLEAN TECHNOLOGY CO., LTD

Supplier : SHANGHAI HANYANG CLEAN TECHNOLOGY CO., LTD

Proposed Care Instruction : -

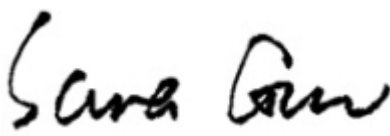
Test Performed : Selected test(s) as requested by applicant

Sample Receiving Date : Mar 07, 2025 & Apr 11, 2025 & May 20, 2025 & Jun 05, 2025

Testing Period : May 27, 2025 - Jun 19, 2025

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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中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

t (86-21) 61402666
t (86-21) 61402666

f (86-21) 64958763
f (86-21) 64958763

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COMPONENT LIST / List of Materials

Sample No.	Component No.	Description	Material	Color	Remark
A	1	Button			
A	2	Zipper			
A	3	body fabric		black/white	
A	4	cuff rope		white	
B	5	body fabric		blue/black	
B	6	ear fabric		black/white	
B	7	elastic rope		white	
B	8	velcro		white	



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t (86-21) 61402666
t (86-21) 61402666

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Test Result

Protective Clothing - General Requirements

EN ISO 13688:2013+A1:2021

EN ISO 13688:2013+A1:2021 Clause 4.2 Azo Dyes (Colorant Extraction)

Textile: According to EN ISO 14362-1:2017 – Analysis was conducted with GC-MS/HPLC-DAD.

Test Item(s)	CAS-No	Result (mg/kg)
		3
		Colorant Extraction
4-Aminobiphenyl	92-67-1	ND
Benzidine	92-87-5	ND
4-Chlor-o-toluidine	95-69-2	ND
2-Naphthylamine	91-59-8	ND
o-Aminoazotoluene	97-56-3	ND
5-Nitro-o-Toluidine/2-Amino-4-Nitrotoluene	99-55-8	ND
4-Chloroaniline	106-47-8	ND
4-Methoxy-m-Phenylenediamine/2,4-Diaminoanisole	615-05-4	ND
4,4'-Diaminodiphenylmethane, MDA	101-77-9	ND
3,3'-Dichlorobenzidine	91-94-1	ND
3,3'-Dimethoxybenzidine	119-90-4	ND
3,3'-Dimethylbenzidine	119-93-7	ND
4,4'-methylenedi-o-Toluidine/3,3'-Dimethyl-4,4'-Diaminodiphenylmethane	838-88-0	ND
p-Cresidine	120-71-8	ND
4,4'-Methylene-bis-(2-chloroaniline)	101-14-4	ND
4,4'-Oxydianiline	101-80-4	ND
4,4'-Thiodianiline	139-65-1	ND
o-Toluidine	95-53-4	ND
4-Methyl-m-Phenylenediamine/2,4-Toluyldiamine, TDA	95-80-7	ND
2,4,5-Trimethylaniline	137-17-7	ND
4-Aminoazobenzene	60-09-3	ND
O-Anisidine	90-04-0	ND

Conclusion: PASS

Requirement: ND



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Test Item(s)	CAS-No	Result (mg/kg)
		5
		Colorant Extraction
4-Aminobiphenyl	92-67-1	ND
Benzidine	92-87-5	ND
4-Chlor-o-toluidine	95-69-2	ND
2-Naphthylamine	91-59-8	ND
o-Aminoazotoluene	97-56-3	ND
5-Nitro-o-Toluidine/2-Amino-4-Nitrotoluene	99-55-8	ND
4-Chloroaniline	106-47-8	ND
4-Methoxy-m-Phenylenediamine/2,4-Diaminoanisole	615-05-4	ND
4,4'-Diaminodiphenylmethane, MDA	101-77-9	ND
3,3'-Dichlorobenzidine	91-94-1	ND
3,3'-Dimethoxybenzidine	119-90-4	ND
3,3'-Dimethylbenzidine	119-93-7	ND
4,4'-methylenedi-o-Toluidine/3,3'-Dimethyl-4,4'-Diaminodiphenylmethane	838-88-0	ND
p-Cresidine	120-71-8	ND
4,4'-Methylene-bis-(2-chloroaniline)	101-14-4	ND
4,4'-Oxydianiline	101-80-4	ND
4,4'-Thiodianiline	139-65-1	ND
o-Toluidine	95-53-4	ND
4-Methyl-m-Phenylenediamine/2,4-Toluyldiamine, TDA	95-80-7	ND
2,4,5-Trimethylaniline	137-17-7	ND
4-Aminoazobenzene	60-09-3	ND
O-Anisidine	90-04-0	ND

Conclusion: PASS

Requirement: ND



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t (86-21) 61402666 f (86-21) 64958763
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Test Item(s)	CAS-No	Result (mg/kg)
		6
		Colorant Extraction
4-Aminobiphenyl	92-67-1	ND
Benzidine	92-87-5	ND
4-Chlor-o-toluidine	95-69-2	ND
2-Naphthylamine	91-59-8	ND
o-Aminoazotoluene	97-56-3	ND
5-Nitro-o-Toluidine/2-Amino-4-Nitrotoluene	99-55-8	ND
4-Chloroaniline	106-47-8	ND
4-Methoxy-m-Phenylenediamine/2,4-Diaminoanisole	615-05-4	ND
4,4'-Diaminodiphenylmethane, MDA	101-77-9	ND
3,3'-Dichlorobenzidine	91-94-1	ND
3,3'-Dimethoxybenzidine	119-90-4	ND
3,3'-Dimethylbenzidine	119-93-7	ND
4,4'-methylenedi-o-Toluidine/3,3'-Dimethyl-4,4'-Diaminodiphenylmethane	838-88-0	ND
p-Cresidine	120-71-8	ND
4,4'-Methylene-bis-(2-chloroaniline)	101-14-4	ND
4,4'-Oxydianiline	101-80-4	ND
4,4'-Thiodianiline	139-65-1	ND
o-Toluidine	95-53-4	ND
4-Methyl-m-Phenylenediamine/2,4-Toluyldiamine, TDA	95-80-7	ND
2,4,5-Trimethylaniline	137-17-7	ND
4-Aminoazobenzene	60-09-3	ND
O-Anisidine	90-04-0	ND

Conclusion: PASS

Requirement: ND



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Test Item(s)	CAS-No	Result (mg/kg)
		C
		Colorant Extraction
4-Aminobiphenyl	92-67-1	ND
Benzidine	92-87-5	ND
4-Chlor-o-toluidine	95-69-2	ND
2-Naphthylamine	91-59-8	ND
o-Aminoazotoluene	97-56-3	ND
5-Nitro-o-Toluidine/2-Amino-4-Nitrotoluene	99-55-8	ND
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4-Aminoazobenzene	60-09-3	ND
O-Anisidine	90-04-0	ND

Conclusion: PASS

Requirement: ND



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		D
		Colorant Extraction
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Benzidine	92-87-5	ND
4-Chlor-o-toluidine	95-69-2	ND
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o-Aminoazotoluene	97-56-3	ND
5-Nitro-o-Toluidine/2-Amino-4-Nitrotoluene	99-55-8	ND
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3,3'-Dimethoxybenzidine	119-90-4	ND
3,3'-Dimethylbenzidine	119-93-7	ND
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4,4'-Methylene-bis-(2-chloroaniline)	101-14-4	ND
4,4'-Oxydianiline	101-80-4	ND
4,4'-Thiodianiline	139-65-1	ND
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2,4,5-Trimethylaniline	137-17-7	ND
4-Aminoazobenzene	60-09-3	ND
O-Anisidine	90-04-0	ND

Conclusion: PASS

Requirement: ND



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t (86-21) 61402666

f (86-21) 64958763
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Test Item(s)	CAS-No	Result (mg/kg)	
		Direct Reduction	Colorant Extraction
4-Aminobiphenyl	92-67-1	ND	ND
Benzidine	92-87-5	ND	ND
4-Chlor-o-toluidine	95-69-2	ND	ND
2-Naphthylamine	91-59-8	ND	ND
o-Aminoazotoluene	97-56-3	ND	ND
5-Nitro-o-Toluidine/2-Amino-4-Nitrotoluene	99-55-8	ND	ND
4-Chloroaniline	106-47-8	ND	ND
4-Methoxy-m-Phenylenediamine/2,4-Diaminoanisole	615-05-4	ND	ND
4,4'-Diaminodiphenylmethane, MDA	101-77-9	ND	ND
3,3'-Dichlorobenzidine	91-94-1	ND	ND
3,3'-Dimethoxybenzidine	119-90-4	ND	ND
3,3'-Dimethylbenzidine	119-93-7	ND	ND
4,4'-methylenedi-o-Toluidine/3,3'-Dimethyl-4,4'-Diaminodiphenylmethane	838-88-0	ND	ND
p-Cresidine	120-71-8	ND	ND
4,4'-Methylene-bis-(2-chloroaniline)	101-14-4	ND	ND
4,4'-Oxydianiline	101-80-4	ND	ND
4,4'-Thiodianiline	139-65-1	ND	ND
o-Toluidine	95-53-4	ND	ND
4-Methyl-m-Phenylenediamine/2,4-Toluyldiamine, TDA	95-80-7	ND	ND
2,4,5-Trimethylaniline	137-17-7	ND	ND
4-Aminoazobenzene	60-09-3	ND	ND
O-Anisidine	90-04-0	ND	ND

Conclusion: PASS

Requirement: ND

Note:

ND = Not Detected

Reporting Limit = 5 mg/kg (for individual compound)

Remark:

(1) *Direct reduction refers to the extraction and reduction according to EN ISO 14362-1:2017 clause 10.2 and relevant clauses.

*Colorant extraction refers to the colourant extraction and subsequent reduction according to EN ISO 14362-1:2017 Clause 10.1 and relevant clauses.

(2) EN ISO 14362-1:2017 will enable further cleavage of 4-AAB (CAS No. 60-09-3) to non-forbidden amines: aniline and p-phenylenediamine. If aniline and/or p-phenylenediamine is not found, 4-AAB is considered as "ND" (i.e. <5.0 mg/kg). Otherwise, EN ISO 14362-3:2017 will be employed to verify the presence of 4-AAB.

(3) The result interpretation and assessment guide according to Annex C of EN ISO 14362-1:2017 should be taken into account when assessing the source of amine.



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EN ISO 13688:2013+A1:2021 Clause 4.2 pH Value of Aqueous Extract

(ISO 3071:2020; 0.1 mol/L KCl extraction)

-	Unit	3	4	6	Requirement
pH Value	-	7.4	6.1	6.8	3.5-9.5
Conclusion		PASS	PASS	PASS	

-	Unit	7	8	Requirement
pH Value	-	6.0	6.1	3.5-9.5
Conclusion		PASS	PASS	

1. Extraction medium: 0.1 mol/L KCl solution
2. pH value of extraction medium: 5.69
3. Temperature of the extraction solution: 22.6°C

EN ISO 13688:2013+A1:2021 Clause 5.3 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.6N, Machine Wash At 60°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, Tumble Dry Low, Not Exceeding 60°C.)

After 5 Washes

-	Unit	3 body fabric	Requirement
Lengthwise	%	-0.4	+/-3%
Widthwise	%	-0.4	+/-3%

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



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3rd Building, No. 889, Yishan Road, Xuhui District Shanghai, China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

t (86-21) 61402666
t (86-21) 61402666

f (86-21) 64958763
f (86-21) 64958763

www.sgsgroup.com.cn
sgs.china@sgs.com

EN ISO 13688:2013+A1:2021 Clause 4.2 Nickel Release

Test Method: With reference to EN 1811:2023, analysis was performed by ICP-OES.

Test Item(s)	Unit(s)	RL	1-Trial1	1-Trial2	1-Trial3	Req.
Volume of Test Solution	mL	-	2.82	2.82	2.82	-
Sample Area	cm ²	-	2.82	2.82	2.82	-
Whether performed by EN 12472:2020 or not	-	-	YES	YES	YES	-
Nickel Release	µg/cm ² /week	0.10	ND	ND	ND	0.5

Conclusion

Pass

Test Item(s)	Unit(s)	RL	2-Trial1	2-Trial2	2-Trial3	Req.
Volume of Test Solution	mL	-	8.68	8.68	8.68	-
Sample Area	cm ²	-	8.68	8.68	8.68	-
Whether performed by EN 12472:2020 or not	-	-	YES	YES	YES	-
Nickel Release	µg/cm ² /week	0.10	ND	ND	ND	0.5

Conclusion

Pass

Remark: ND = Not Detected
RL = Reporting Limit

Notes: (1) NO: Simulation of wear and corrosion per EN 12472:2020 is not performed due to one of the following 2 reasons:

1. No coating or plating found in the sample
2. Nickel is found to be positive by CEN/TR 12471: 2022

YES: Negative finding by Nickel spot test is observed based on CEN/TR 12471:2022.

Simulation of wear and corrosion according to EN 12472:2020 has been applied prior to the EN 1811:2023.

(2) Combined measurement uncertainty is applied to compliance decision rule according to the clause 9.2.2, EN 1811:2023 as below:

Type of sample	Nickel Release (µg/cm ² /week)	
	Pass	Fail
Article with Nickel release limit of 0.5µg/cm ² /week	≤0.88	> 0.88
Article with Nickel release limit of 0.2µg/cm ² /week	<0.35	≥ 0.35



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SGS-CSTC (Shanghai) Technical Services Co., Ltd.
Softline Laboratory

3rd Building, No. 889, Yishan Road, Xuhui District Shanghai, China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

t (86-21) 61402666
t (86-21) 61402666

f (86-21) 64958763
f (86-21) 64958763

www.sgsgroup.com.cn
sgs.china@sgs.com

Clause 4.3 & 4.4 Design and Comfort (Ergonomic)

(EN ISO 13688:2013+A1:2021 clause 4.3 & 4.4 & Annex C)

Sample A

Sample size: L

Item No.	Requirement	Observation Results
The ergonomic requirements of EN ISO 13688:2013, for design and wearing comfort shall be met.		
C.3	Ergonomic assessment questions	
C.3.1	Clothing free from harmful features — Inspect protective clothing manually and visually to ensure it is free from harmful features (any sharp or hard edges, protruding wire ends, rough surfaces or other items on the inner or outer surface)	Subject: Yes
C.3.2	Protective clothing, putting on, taking off and fit — The ease of putting on and removing the clothing with or without assistance as is appropriate for the type of clothing	Subject: Yes
	— The clothing should not be too tight for comfort and deep breathing is not restricted and there is no blood flow restriction anywhere	Subject: Yes
	— The clothing design at, for example the armholes and crotch, to check they are appropriately proportioned and positioned.	Subject: Yes
	(Information supplied by the manufacturer) Using simple practical tests, the assessor should check whether the information supplied by the manufacturer is sufficiently clear, complete and accurate so that users may be expected to use the clothing correctly, and avoid any hazardous errors in using the product.	Not assessed (To be checked during conformity assessment)
C.3.3	Operation of closures, adjustment and restraint systems — The adequacy of the range of adjustments available	Subject: Yes
	— The ease of operation and the security of closures and adjusters	Subject: Yes
	— Whether the closures, adjusters and restraint systems appear strong enough to withstand the forces to which they are likely to be exposed to during body movements and the tasks for which the protective clothing is intended.	Subject: Yes
C.3.4	Coverage of the area intended to be protected, coverage maintained during movements — The adequacy of coverage of any specified protection zones by protective material or special constructions.	Subject: Yes
	— That coverage is maintained during movements as extreme as it is anticipated a user would make.	Subject: Yes
C.3.5	Freedom of movement Following movements should be able to perform: — Standing, sitting, walking and stair climbing, — Raising both hands above the head, — Bending over and picking up a small object such as a pencil	Subject: Yes
	The following points should be considered: — The arms and legs of the clothing should not be so long that they interfere with hand and foot movements. — The clothing should not be so loose that it flaps about or moves independently and inconveniently. — There should not be points at which unexpected and unintended gaps	Subject: Yes



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SGS-CTC (China) Technical Services (Shanghai) Co., Ltd.
Softline Laboratory

3rd Building, No. 889, Yishan Road, Xuhui District Shanghai, China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

t (86-21) 61402666
t (86-21) 61402666

f (86-21) 64958763
f (86-21) 64958763

www.sgs.com
sgs.china@sgs.com

	open up between or within components of the clothing. — There should not be any unreasonable restriction of movement at any joint.	
C.3.6	Compatibility with other PPE from the same manufacturer — Protective clothing that is normally worn as part of an ensemble should be compatible with representative examples of the rest of that ensemble. — Putting on and removing other items of PPE such as gloves and boots should be possible without difficulty.	Not applicable
4.3	Design	
4.3.1	The design of protective clothing shall facilitate its correct positioning on the user and shall ensure that it remains in place for the foreseeable period of use. Taking into account ambient factors, together with the movements and postures that wearer could adopt during the course of work or other activity. For this purpose, appropriate means, such as adequate adjustment systems or adequate size ranges shall be provided so as to enable protective clothing to be adapted to the morphology of the user. (See Annex C)	Pass
4.3.2	The design of protective clothing shall ensure that no parts of the body get uncovered by expected movements by the wearer if this is defined in the specific standard. (See Annex C)	Pass
4.3.3	Where applicable, protective clothing design shall take into account other items of protective clothing or equipment from the same manufacturer which must be worn to form an overall protective ensemble. When two or more items are worn together, they should be compatible and each one shall comply with its own standard. None of them has to reduce the performance of the other item(s) and the appropriate level of protection should be provided at interface areas between those products, for example in sleeve to glove, trousers to footwear, hood and respirator combinations.	Not applicable
4.3.4	In each specific standard, a minimum mechanical property to assess the strength of a garment shall be defined.	Not assessed (To be checked in the specific standard testing)
4.4	Comfort	
4.4.1	Protective clothing shall not — have rough, sharp or hard surfaces that irritate or injure the user; — be so tight, loose and/or heavy so that it restricts normal movement. (See Annex C)	Pass
4.4.2	Protective clothing that imposes significant ergonomic burdens such as heat stress, or is inherently uncomfortable because of the need to provide adequate protection, shall be accompanied in the information supplied by the manufacturer by specific advice or warnings. Specific advice on the appropriate duration for continuous use of the clothing in the intended application(s) shall be given.	Not applicable



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SGS-CTC (Shanghai) Co., Ltd.
Softline Laboratory

3rd Building, No. 889, Yishan Road, Xuhui District Shanghai, China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

t (86-21) 61402666 f (86-21) 64958763
t (86-21) 61402666 f (86-21) 64958763

www.sgsgroup.com.cn
sgs.china@sgs.com

Sample B

Sample size: 2XL

Item No.	Requirement	Observation Results
The ergonomic requirements of EN ISO 13688:2013, for design and wearing comfort shall be met.		
C.3	Ergonomic assessment questions	
C.3.1	Clothing free from harmful features — Inspect protective clothing manually and visually to ensure it is free from harmful features (any sharp or hard edges, protruding wire ends, rough surfaces or other items on the inner or outer surface)	Subject: Yes
C.3.2	Protective clothing, putting on, taking off and fit — The ease of putting on and removing the clothing with or without assistance as is appropriate for the type of clothing	Subject: Yes
	— The clothing should not be too tight for comfort and deep breathing is not restricted and there is no blood flow restriction anywhere	Subject: Yes
	— The clothing design at, for example the armholes and crotch, to check they are appropriately proportioned and positioned.	Subject: Yes
	(Information supplied by the manufacturer) Using simple practical tests, the assessor should check whether the information supplied by the manufacturer is sufficiently clear, complete and accurate so that users may be expected to use the clothing correctly, and avoid any hazardous errors in using the product.	Not assessed (To be checked during conformity assessment)
C.3.3	Operation of closures, adjustment and restraint systems — The adequacy of the range of adjustments available	Subject: Yes
	— The ease of operation and the security of closures and adjusters	Subject: Yes
	— Whether the closures, adjusters and restraint systems appear strong enough to withstand the forces to which they are likely to be exposed to during body movements and the tasks for which the protective clothing is intended.	Subject: Yes
C.3.4	Coverage of the area intended to be protected, coverage maintained during movements — The adequacy of coverage of any specified protection zones by protective material or special constructions.	Subject: Yes
	— That coverage is maintained during movements as extreme as it is anticipated a user would make.	Subject: Yes
C.3.5	Freedom of movement Following movements should be able to perform: — Standing, sitting, walking and stair climbing, — Raising both hands above the head, — Bending over and picking up a small object such as a pencil	Subject: Yes
	The following points should be considered: — The arms and legs of the clothing should not be so long that they interfere with hand and foot movements. — The clothing should not be so loose that it flaps about or moves independently and inconveniently. — There should not be points at which unexpected and unintended gaps open up between or within components of the clothing. — There should not be any unreasonable restriction of movement at	Subject: Yes



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SGS-CTC (China) Technical Services (Shanghai) Co., Ltd.
Softline Laboratory

3rd Building, No. 889, Yishan Road, Xuhui District Shanghai, China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

t (86-21) 61402666
t (86-21) 61402666

f (86-21) 64958763
f (86-21) 64958763

www.sgsgroup.com.cn
sgs.china@sgs.com

	any joint.	
C.3.6	Compatibility with other PPE from the same manufacturer — Protective clothing that is normally worn as part of an ensemble should be compatible with representative examples of the rest of that ensemble. — Putting on and removing other items of PPE such as gloves and boots should be possible without difficulty.	Not applicable
4.3	Design	
4.3.1	The design of protective clothing shall facilitate its correct positioning on the user and shall ensure that it remains in place for the foreseeable period of use. Taking into account ambient factors, together with the movements and postures that wearer could adopt during the course of work or other activity. For this purpose, appropriate means, such as adequate adjustment systems or adequate size ranges shall be provided so as to enable protective clothing to be adapted to the morphology of the user. (See Annex C)	Pass
4.3.2	The design of protective clothing shall ensure that no parts of the body get uncovered by expected movements by the wearer if this is defined in the specific standard. (See Annex C)	Pass
4.3.3	Where applicable, protective clothing design shall take into account other items of protective clothing or equipment from the same manufacturer which must be worn to form an overall protective ensemble. When two or more items are worn together, they should be compatible and each one shall comply with its own standard. None of them has to reduce the performance of the other item(s) and the appropriate level of protection should be provided at interface areas between those products, for example in sleeve to glove, trousers to footwear, hood and respirator combinations.	Not applicable
4.3.4	In each specific standard, a minimum mechanical property to assess the strength of a garment shall be defined.	Not assessed (To be checked in the specific standard testing)
4.4	Comfort	
4.4.1	Protective clothing shall not — have rough, sharp or hard surfaces that irritate or injure the user; — be so tight, loose and/or heavy so that it restricts normal movement. (See Annex C)	Pass
4.4.2	Protective clothing that imposes significant ergonomic burdens such as heat stress, or is inherently uncomfortable because of the need to provide adequate protection, shall be accompanied in the information supplied by the manufacturer by specific advice or warnings. Specific advice on the appropriate duration for continuous use of the clothing in the intended application(s) shall be given.	Not applicable



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SGS-CTC (Shanghai) Technical Services Co., Ltd.
Softline Laboratory

3rd Building, No. 889, Yishan Road, Xuhui District Shanghai, China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

t (86-21) 61402666 f (86-21) 64958763
t (86-21) 61402666 f (86-21) 64958763

www.sgsgroup.com.cn
sgs.china@sgs.com

Protective Clothing- Electrostatic Properties- Part 5: Material Performance and Design requirements
EN 1149-5:2018

Clause 4.2.1 Electrostatic Material Requirements

(EN 1149-1:2006; Test Condition: Applied Voltage and time: 100V for 15 seconds
Temperature: 23±1°C; Relative Humidity: 25±5%)

A	Unit	Face Side	Requirement
<u>After 5 Washes</u>			
Surface Resistance	Ω	7.9x10 ⁴ 5	Max.2.5x10 ⁹ Ω on at least one surface

Wash procedure: ISO 6330:2021: Using horizontal axis, front-loading type machine; Procedure No.6N, Machine Wash At 60°C; with 2kg total dry mass (Type III (100% Polyester) Ballast+Specimen) and 20±1 g ECE reference detergent 98 without optical brightener, Tumble Dry Low, Not Exceeding 60°C

Clause 4.2.2 Design requirements
(EN 1149-5:2018, 4.2.2)

Sample: A

Garment size: L

Clause	Specific design requirements	Results	Conclusion
4.2.2.1 General	Electrostatic dissipative protective clothing shall permanently cover all non-complying materials during normal use (inclusive of bending and movements) and shall provide proper fitting with sizing according to EN ISO 13688, and shall allow full body movement with all closures fastened according to manufacturer's instructions.	/	Refer to separate EN ISO 13688 report
	If the electrostatic dissipative protective clothing comprises multiple, separate layers (e.g. liner, insulation, outer), the outermost material shall meet the material requirements.	/	Detail results refer to the relative performance testing
	Electrostatic dissipative garments shall be earthed either directly or via the body of the wearer, who shall be earthed. If electrostatic dissipative materials in a garment are intended to be earthed via the wearer but are not suitable for skin contact, an intermediate material that is suitable for skin contact shall be used to maintain continuity between the skin and the electrostatic dissipative materials.	/	Not check
4.2.2.2 Attachments to the outside of garments	Attachments that are fully bonded (e.g. coated or laminated) to the outermost material shall meet the requirements of 4.2.1 when tested as composite material.	/	Detail results refer to the relative performance testing



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SGS-CTC (Shanghai) Co., Ltd.
Inspection & Testing Services
Softline Laboratory

3rd Building, No.889, Yishan Road, Xuhui District Shanghai, China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

t (86-21) 61402666
t (86-21) 61402666

f (86-21) 64958763
f (86-21) 64958763

www.sgsgroup.com.cn
sgs.china@sgs.com

	Non-dissipative attachments to the outside of garments, such as labels, reflective stripes, etc., are permitted without length restriction providing they do not exceed 50 mm in width and are permanently attached to electrostatic dissipative materials. Non-dissipative attachments to the outside of garments greater in width than 50 mm shall be restricted to a maximum area of 10000 mm ² , and shall be permanently attached to electrostatic dissipative materials.	Not applicable	Not applicable
	The combined thickness of any outer layer of non-dissipative material plus the thickness of any non-dissipative attachment shall be less than 2 mm.	Not applicable	Not applicable
	Any hood that has a non-dissipative material that is exposed when the hood is not worn shall be capable of being removed or stowed within the garment such that non-dissipative materials are covered by dissipative materials.	Not check	Detail results refer to the relative performance testing
	Touch and close fasteners are permitted provided they comply with the above thickness, width and area restrictions. In this case, the thickness limit applies to the thickness of the substrate tape excluding the pile.	Not applicable	Not applicable
	Use instructions shall include a warning that touch and close fasteners shall not be opened when operating in hazard zones.	/	Not check
	Exposed cords, drawstrings, etc. shall not exceed 20 mm in width.	10mm	Pass
	Attachments to the outside of garments greater in thickness, width or area than the specified limits are only permitted if test data are available to prove incendiary discharges cannot occur under worst case conditions. Users are recommended to take expert advice to select and conduct suitable testing and test conditions.	/	Not applicable
	Attachment to the outside of garments shall be done in such a way that separation between the attached elements and the electrostatic dissipative material is avoided.	Not applicable	Not applicable
4.2.2.3 Conductive parts	Conductive parts (slide fasteners, buttons, etc.) are permitted provided they are fully covered by the outermost electrostatic dissipative materials when in use.	No	See next result
	Conductive parts that cannot be covered in this way are only permitted if the capacitance of the item is less than 3 pF, measured according to EN 60079-32-2:2015.	/	Detail results refer to the separate EN 60079-32-2:2015 report



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Softline Laboratory

3rd Building, No. 889, Yishan Road, Xuhui District Shanghai, China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

t (86-21) 61402666 f (86-21) 64958763
t (86-21) 61402666 f (86-21) 64958763

www.sgsgroup.com.cn
sgs.china@sgs.com

Sample: B

Garment size: 2XL

Clause	Specific design requirements	Results	Conclusion
4.2.2.1 General	Electrostatic dissipative protective clothing shall permanently cover all non-complying materials during normal use (inclusive of bending and movements) and shall provide proper fitting with sizing according to EN ISO 13688, and shall allow full body movement with all closures fastened according to manufacturer's instructions.	/	Refer to separate EN ISO 13688 report
	If the electrostatic dissipative protective clothing comprises multiple, separate layers (e.g. liner, insulation, outer), the outermost material shall meet the material requirements.	/	Detail results refer to the relative performance testing
	Electrostatic dissipative garments shall be earthed either directly or via the body of the wearer, who shall be earthed. If electrostatic dissipative materials in a garment are intended to be earthed via the wearer but are not suitable for skin contact, an intermediate material that is suitable for skin contact shall be used to maintain continuity between the skin and the electrostatic dissipative materials.	/	Not check
4.2.2.2 Attachments to the outside of garments	Attachments that are fully bonded (e.g. coated or laminated) to the outermost material shall meet the requirements of 4.2.1 when tested as composite material.	/	Detail results refer to the relative performance testing
	Non-dissipative attachments to the outside of garments, such as labels, reflective stripes, etc., are permitted without length restriction providing they do not exceed 50 mm in width and are permanently attached to electrostatic dissipative materials. Non-dissipative attachments to the outside of garments greater in width than 50 mm shall be restricted to a maximum area of 10000 mm ² , and shall be permanently attached to electrostatic dissipative materials.	25mm	Pass
	The combined thickness of any outer layer of non-dissipative material plus the thickness of any non-dissipative attachment shall be less than 2 mm.	Yes	Pass
	Any hood that has a non-dissipative material that is exposed when the hood is not worn shall be capable of being removed or stowed within the garment such that non-dissipative materials are covered by dissipative materials.	Not check	Detail results refer to the relative performance testing
	Touch and close fasteners are permitted provided they comply with the above thickness, width and area restrictions. In this case, the thickness limit applies to the thickness of the substrate tape excluding the pile.	Width: 25mm Thickness: 0.27mm	Pass
	Use instructions shall include a warning that touch and close	/	Not check



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SGS-CTC (Shanghai) Technical Services Co., Ltd.
Softline Laboratory

3rd Building, No. 889, Yishan Road, Xuhui District Shanghai, China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

t (86-21) 61402666 f (86-21) 64958763
t (86-21) 61402666 f (86-21) 64958763

www.sgsgroup.com.cn
sgs.china@sgs.com

	fasteners shall not be opened when operating in hazard zones. Exposed cords, drawstrings, etc. shall not exceed 20 mm in width.	Not applicable	Not applicable
	Attachments to the outside of garments greater in thickness, width or area than the specified limits are only permitted if test data are available to prove incendiary discharges cannot occur under worst case conditions. Users are recommended to take expert advice to select and conduct suitable testing and test conditions.	/	Not applicable
	Attachment to the outside of garments shall be done in such a way that separation between the attached elements and the electrostatic dissipative material is avoided.	Yes	Pass
4.2.2.3 Conductive parts	Conductive parts (slide fasteners, buttons, etc.) are permitted provided they are fully covered by the outermost electrostatic dissipative materials when in use.	Yes	Pass
	Conductive parts that cannot be covered in this way are only permitted if the capacitance of the item is less than 3 pF, measured according to EN 60079-32-2:2015.	/	Not applicable

Remark: Design tests and comments were given based on the sample received.

Sample Photo



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SGS-CTC (Shanghai) Co., Ltd.
Softline Laboratory

3rd Building, No. 889, Yishan Road, Xuhui District Shanghai, China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

t (86-21) 61402666
t (86-21) 61402666

f (86-21) 64958763
f (86-21) 64958763

www.sgsgroup.com.cn
sgs.china@sgs.com



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SGS-CTC (Shanghai) Technical Service (Shanghai) Co., Ltd.
Softline Laboratory

3rd Building, No. 889, Yishan Road, Xuhui District Shanghai, China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

t (86-21) 61402666
t (86-21) 61402666

f (86-21) 64958763
f (86-21) 64958763

www.sgsgroup.com.cn
sgs.china@sgs.com



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SGS-CSTC (Shanghai) Technical Service Co., Ltd.
Softline Laboratory

3rd Building, No. 889, Yishan Road, Xuhui District Shanghai, China 200233
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

t (86-21) 61402666
t (86-21) 61402666

f (86-21) 64958763
f (86-21) 64958763

www.sgsgroup.com.cn
sgs.china@sgs.com