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中国认可
国际互认
检测
TESTING
CNAS L4577

TEST REPORT

Report No.: S210301736_1

29 March 2021

APPLICANT: HANGZHOU WEI LEI TE TECHNOLOGY CO., LTD (C50002)

lily_wlt@wlsafety.com

3rd floor, building 3 No.1-1,
. HANGZHOU ZHEJIANG
CHINA

Date of receipt :11 Mar. 2021
Testing period :11 Mar. 2021
:26 Mar. 2021

Buyer: --

Sample description: Heat Protection Glove

Style / Article no. :HS-PMPA20041
Test(s) requested :--
Service :REGULAR
Brand / Section :--
Season :--
End use :--
Factory name :--
Factory code :--

For CE Marking : Yes
Previous report :--
Product category :--
Product type :--
Test stage :FIRST TEST
Supplier name :--
Exported to :--

1. Conclusion:

	Tests description	Conformity
	EN 388:2016/EN 407:2020	
1	Abrasion resistance: 2016	**Level 4**
2	Cut resistance: 2016	**Level 5**
3	Tear strength resistance: 2016	**Level 4**
4	Puncture resistance: 2016	**Level 4**
5	Contact heat	**Level 2**
6	Convective heat	**Level 4**
7	Radiant heat	**Level 4**
8	Small drops of molten metal	**Level 4**

	Tests description	Conformity
9	Limited flame spread	**Level 4**

Pass: requirements met Fail: requirements not met None: no requirement for this test N/A: not applicable

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Approved by

Henry YAN 严滨
Laboratory Manager

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2. Sample(s) description assigned by laboratory:

Size	Analyzed product	Description	Sample information
	GLOVE		
		yellow aramid palm	
		grey(yellow) aramid back	

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3. GLOVE/

yellow aramid palm

	Method	Client Requirement	Unit	Result	Conformity
(+) **4.1. Cut resistance: 2016**	EN 388:2016 + A1:2018				
Deviation from the test method				No	
used consumables - canvas				LEM 6	
used consumables - blade				OLFA RB45	
C1				0.8	
T1				60.0	
1C1				2.3	
I1				39.7	
C2				1.4	
T2				60.0	
1C2				2.4	
I2				32.6	
C3				1.4	
T3				60.0	
1C3				2.8	
I3				29.6	
C4				1.4	
T4				60.0	
1C4				2.7	
I4				30.3	
C5				0.8	
T5				60.0	
1C5				2.7	
I5				35.3	
Mean value of test piece 1				33.5	
C1 bis				1.2	
T1 bis				60.0	
2C1bis				2.3	
I1 bis				35.3	
C2 bis				1.4	
T2 bis				60.0	

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	Method	Client Requirement	Unit	Result	Conformity
2C2bis				1.8	
I2 bis				38.5	
C3 bis				1.8	
T3 bis				60.0	
2C3bis				2.3	
I3 bis				30.3	
C4 bis				1.4	
T4 bis				60.0	
2C4bis				2.3	
I4 bis				33.4	
C5 bis				1.4	
T5 bis				60.0	
2C5bis				2.3	
I5 bis				33.4	
Mean value of test piece 2				34.2	
Considered value				33.5	
Performance level				5	
Observation				First sequence Cn+1 higher than 3xCn, switch to EN13997	
(+) **4.1. Puncture resistance: 2016**	EN 388:2016 + A1:2018				
Puncture resistance			N	462	
Puncture resistance (2)			N	327	
Puncture resistance (3)			N	400	
Puncture resistance (4)			N	285	
Performance level				4	
(+) **4.3. Abrasion resistance: 2016**	EN 388:2016 + A1:2018				
Deviation from the test method				No	
used consumables - abrasive				Klingspor PL31B Grit 180	
used consumables - adhesive				3M Scotch	
Number of cycles at the hole detection				>8000	
Number of cycles at the hole detection (2)				>8000	
Number of cycles at the hole detection (3)				>8000	

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	Method	Client Requirement	Unit	Result	Conformity
Number of cycles at the hole detection (4)				>8000	
Performance level				4	
(+) **4.4. Tear strength resistance: 2016**	EN 388:2016 + A1:2018				
Tear strength			N	>75	
Tear strength (2)			N	>75	
Tear strength (3)			N	>75	
Tear strength (4)			N	>75	
Performance level				4	
▲ **4.5.3. Contact heat**	EN 407:2020				
Threshold time Tt at 100°C			Seconds	68.1	
Threshold time Tt at 100°C (2)			Seconds	NA	
Threshold time Tt at 100°C (3)			Seconds	NA	
Standard deviation at 100°C			Seconds	0.0	
Threshold time Tt at 250°C			Seconds	20.9	
Threshold time Tt at 250°C (2)			Seconds	19.6	
Threshold time Tt at 250°C (3)			Seconds	19.3	
Standard deviation at 250°C			Seconds	0.9	
Threshold time Tt at 350°C			Seconds	14.0	
Threshold time Tt at 350°C (2)			Seconds	14.3	
Threshold time Tt at 350°C (3)			Seconds	14.5	
Standard deviation at 350°C			Seconds	0.3	
Threshold time Tt at 500°C			Seconds	NA	
Threshold time Tt at 500°C (2)			Seconds	NA	
Threshold time Tt at 500°C (3)			Seconds	NA	
Standard deviation at 500°C			Seconds	0.0	
Innermost layers of the glove show no sign of melting or holing				Pass	
Degradation observed				browning on the surface at 350°C and nothing at 100°C and 250°C	
Performance level				2	
▲ **4.5.4. Convective heat**	EN 407:2020				
23°C 50%HR					
Identification of tested material				complexe	
Calorimeter				B	

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	Method	Client Requirement	Unit	Result	Conformity
Conditionning				24h at 20°C & 65% HR	
Laboratory temperature			°C	21.8	
Laboratoty humidity percentage			%	29.7	
Time for a rise of 24°C			Seconds	22	
Time for a rise of 24°C (2)			Seconds	22	
Time for a rise of 24°C (3)			Seconds	26	
Inner most layers of the glove show no sign of melting or holing				Pass	
Degradation				BLACKENING	
Performance level				4	
• **Limited flame spread**	EN 407:2020				
Type of gas used				Butane	
Type of ignition used				Method A	
Tested material				Yellow aramid palm	
No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge				Conform	
No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge (2)				Conform	
No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge (3)				Conform	
No specimen shall give flaming or molten debris				Conform	
No specimen shall give flaming or molten debris (2)				Conform	
No specimen shall give flaming or molten debris (3)				Conform	
No specimen shall give hole formation, except for an interlining that is used for specific protection other than flame protection				Conform	
No specimen shall give hole formation, except for an interlining that is used for specific protection other than flame protection (2)				Conform	
No specimen shall give hole formation, except for an interlining that is used for specific protection other than flame protection (3)				Conform	
After glow time			Seconds	0	

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	Method	Client Requirement	Unit	Result	Conformity
After glow time (2)			Seconds	0	
After glow time (3)			Seconds	0	
After flame time			Seconds	0	
After flame time (2)			Seconds	0	
After flame time (3)			Seconds	0	
Performance level				4	

grey(yellow) aramid back

	Method	Client Requirement	Unit	Result	Conformity
▲ 4.5.4. Convective heat	EN 407:2020				
23°C 50%HR					
Identification of tested material				COMPLEXE	
Calorimeter				B	
Conditionning				24h at 20°C & 65% HR	
Laboratory temperature			°C	21.8	
Laboratoty humidity percentage			%	29.7	
Time for a rise of 24°C			Seconds	31	
Time for a rise of 24°C (2)			Seconds	23	
Time for a rise of 24°C (3)			Seconds	26	
Inner most layers of the glove show no sign of melting or holing				Pass	
Degradation				BLACKENED	
Performance level				4	
● 4.5.5. Radiant heat	EN ISO 6942:2002 Method B				
Heat transfer index RHTI24			Seconds	150.2	
Heat transfer index RHTI24 (2)			Seconds	177.0	
Heat transfer index RHTI24 (3)			Seconds	149.0	
Comments				NONE	
Performance level				4	
▲ 4.5.6. Small drops of molten metal	EN 407:2020				
Mean number of droplets			Drops	>35	
Performance level				4	
● Limited flame spread	EN 407:2020				

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	Method	Client Requirement	Unit	Result	Conformity
Type of gas used				Butane	
Type of ignition used				Method A	
Tested material				Grey(yellow) aramid back	
No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge				Conform	
No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge (2)				Conform	
No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge (3)				Conform	
No specimen shall give flaming or molten debris				Conform	
No specimen shall give flaming or molten debris (2)				Conform	
No specimen shall give flaming or molten debris (3)				Conform	
No specimen shall give hole formation, except for an interlining that is used for specific protection other than flame protection				Conform	
No specimen shall give hole formation, except for an interlining that is used for specific protection other than flame protection (2)				Conform	
No specimen shall give hole formation, except for an interlining that is used for specific protection other than flame protection (3)				Conform	
After glow time			Seconds	0	
After glow time (2)			Seconds	0	
After glow time (3)			Seconds	0	
After flame time			Seconds	0	
After flame time (2)			Seconds	0	
After flame time (3)			Seconds	0	
Performance level				4	

END OF TEST REPORT

(+)CNAS accreditation

▲: The test was carried out by external accredited laboratory under their accreditation scope.

●: The test was carried out by external accredited laboratory, not within their accreditation scope.

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Unless otherwise specified, the physical test items in this report performed in CTC Shanghai lab were conditioned and tested in the environment of T 23±2°C / RH 50±4%.

Table of Performance Level for Glove

Test Item	Performance Level					
	0##	1	2	3	4	5
Abrasion Resistance (EN 388) Number of cycles (minimum)	<100	100	500	2000	8000	---
Blade Cut Resistance (EN 388) Index (I) (minimum)	<1.2	1.2	2.5	5.0	10.0	20.0
Tear Resistance (EN 388) Force (N) (minimum)	<10	10	25	50	75	---
Puncture Resistance (EN 388) Force (N) (minimum)	<20	20	60	100	150	---
Contact heat (EN 407) Contact temperature Tc (°C)	---	100	250	350	500	---
Threshold time tt (s)	---	>=15	>=15	>=15	>=15	---
Convective heat (EN 407) Heat transfer index HTI (s)	---	>=4	>=7	>=10	>=18	---
Radiant heat (EN 407) Heat transfer t24 (s)	---	>=7	>=20	>=50	>=95	---
Small drops of molten metal (EN 407) Number of droplets	---	>=10	>=15	>=25	>=35	---
Limited flame spread (EN ISO 15025) After flame time (s)	---	<=15	<=10	<=3	<=2	---
After glow time (s)	---	---	<=120	<=25	<=5	---

Performance level 0 means the glove falls below the minimum performance level for the given individual hazard