

Test Report

Application No. : HX1805023437

Applicant : SHIJIAZHUANG RUN LEI LABOUR PROTECTIONS SUPPLIES CO., LTD.

Equipment Under Test (EUT)

EUT Name : Heat-resistant Gloves

Model No. : LL29

Serial No. : See Page 3

Brand Name : N/A

Receipt Date : 2018-04-25

Test Date : 2018-04-25 to 2018-05-03

Issue Date : 2018-05-03

Standards : EN 407: 2004

Test result : The testing has been performed on the submitted samples and found in compliance with the standard EN 407: 2004 requirements.

Test/Witness Engineer

TIM

Approved & Authorized



This test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

EN 407: 2004
Protective gloves against thermal risks (heat and/or fire)

Testing laboratory-----: Shenzhen HX Detect Certification Co., Ltd.

Address-----: 8/F, Haoyunlai Building B, Baomin 2th Road, Xixiang Street,
Baoan District, Shenzhen, China

Applicant-----: SHIJIAZHUANG RUN LEI LABOUR PROTECTIONS SUPPLIES CO., LTD.

Address-----: No.19th Middle Gexin Street , Shijiazhuang , China

Standard-----: EN 407: 2004

Test result-----: Compliance with the requirements.

Procedure deviation-----: N/A

Non-standard test method---: N/A

Brand Name-----: N/A

Type of test object-----: Heat-resistant Gloves

Models/Type reference-----: LL29

Material-----: N/A

Class-----: N/A

Factory-----: SHIJIAZHUANG RUN LEI LABOUR PROTECTIONS SUPPLIES CO., LTD.

Address-----: No.19th Middle Gexin Street , Shijiazhuang , China

Test item particulars:

Operating condition-----:	N.A.
Class of equipment -----:	N.A.
Protection against ingress of water-----:	N.A.

Possible test case verdicts:

Test case does not apply to the object-----:N
 Test object does meet the requirement -----: P
 Test object does not meet the requirement-----: F

General product information:

Unless otherwise specified, test are carried out in a draught-proof room at (20 ± 5) °C.

General remarks:

- 1.” (see remark #) ” refers to a remark appended to the report.
2. Throughout this report a point is used as the decimal separator.
3. The test results presented in this report relate only to the object tested.
4. All models are the same except model name and sharp.
5. This report shall not be reproduced except in full without the written approval of the Shenzhen HX.
6. If client has any objection to the testing results, please advise us within 15 working days after publish, otherwise claims will not be accepted.

Artwork of Marking Label

Heat-resistant Gloves

Model: LL29



EN 407

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SHIJIAZHUANG RUN LEI LABOUR PROTECTIONS SUPPLIES CO., LTD.

Made In China

EN 407: 2004			
CL.	Requirement of the test	Result--Remark	Verdict
4	General requirements		P
4.1	General		P
	The protective gloves according to this standard shall meet all the applicable requirements of EN 420.		P
4.2	Sizes		P
	The gloves shall correspond to the relevant requirements of EN 420.		P
	Unless otherwise requested, protective gloves of performance levels 3 and 4 in all tests described in 5.1 to 5.6. shall be manufactured so that they can easily be removed in case of emergency.		N
4.3	Abrasion		P
	Using the test method 6.1 the material of the protective gloves shall correspond to at least performance level 1 of the relevant clause in EN 388		P
4.4	Tear resistance		P
	Using the test method 6.2 the material of the protective gloves shall correspond to at least performance level 1 of the relevant clause in EN 388		P
5	Thermal performance		P
	For each of the following test methods the defined performance level depends upon the intended field of application of the glove.		P
	Only the tests which are relevant to the risks in the intended end-use application shall be carried out		P
5.1	Burning behaviour		P
	Using test method 6.3 the material shall correspond to the requirements of Table 1.	Performance level 4	P
	If it melts, the material shall not drip.		P
	Furthermore the innermost surface of the glove shall be inspected.		P
	It shall show no sign of melting, otherwise it fails the test.		P
	The seam shall not come apart after an ignition time of 15 s in the test area.		P
5.2	Contact heat		P
	Using the test method 6.4 the material shall correspond to the requirements of Table 2.	Performance level 4 800°C Contact Temperature	P

EN 407: 2004

CL.	Requirement of the test	Result--Remark	Verdict
	For contact heat performance levels of 3 or 4, the burning behaviour according to 6.3 shall be performed.		P
	The product shall record at least level 3 in the burning behaviour test, otherwise the maximum contact heat performance that shall be reported is level 2.		P
5.3	Convective heat		P
	Using the test method 6.5 the material shall correspond to the requirements of Table 3.		P
	A level of performance in convective heat shall only be reported if a performance level 3 or 4 is obtained in burning behaviour.		P
5.4	Radiant heat		P
	Using the test method 6.6 the material shall correspond to the requirements of Table 4		P
	A level of performance in radiant heat shall only be reported if a performance level 3 or 4 is obtained in burning behaviour.		P
5.5	Small splashes of molten metal		P
	Using the test method 6.7 the number of droplets which produce a temperature rise of 40°C, shall correspond to the requirements of Table 5		P
	A level of performance in small splashes of molten metal shall be reported only if a performance level of 3 or 4 is obtained in burning behavior.		P
5.6	Large quantities of molten metal		N
	Using the test method 6.8 the PVC foil skin-simulant shall not exhibit any smoothness or other changes to the grained surface with the relevant quantities of molten iron used. See Table 6.		N
	The test is failed if steel droplets remain stuck to the specimen, or the specimen ignites or is punctured.		N
	This test only applies to molten iron. Other metals shall be tested as required.		N
	The corresponding test results shall be given on the information supplied by the manufacturer (clause 8).		N
6	Test methods		P
	For multilayered gloves, the tests are carried out simultaneously on all layers, even if these in some circumstances are no longer connected.		N
	This applies to test methods described in 6.3, 6.4, 6.5, 6.6, 6.7 and 6.8		P

EN 407: 2004			
CL.	Requirement of the test	Result--Remark	Verdict
6.1	Abrasion		P
	Test according to EN 388.		P
6.2	Tear resistance		P
	Test according to EN 388.		P
6.3	Burning behavior		P
	Test method according to EN ISO 6941 with the following modification:		P
	- the glove is mounted vertically so that the point A (Figure 1) is at the mid point of the lower edge.		P
	The burner is placed below the glove so that it is in a plane with the vertical middle line of the glove or the middle finger and is perpendicular to the surface of the glove. The burner is mounted at an angle of $30^{\circ} \pm 3^{\circ}$ to the vertical.		P
	The distance between the tip of the burner and the lower edge of the glove or the middle finger shall be $20 \text{ mm} \pm 2 \text{ mm}$.		P
	One glove shall be tested for each ignition time, i. e. for 3 s and 15 s.		P
	The after flame time and after glow time shall be recorded for each ignition time (see Table 1).		P
6.4	Contact heat		P
	Test method according to EN 702.		P
	From each palm area of three gloves one sample shall be taken with a diameter of $80 \text{ mm} \pm 8 \text{ mm}$.		P
	If a reinforcement is added to the palm of the gloves, then the samples taken shall be without reinforcement.		N
	The manufacturer may additionally report test results from the parts of the glove with reinforcement in the information in clause 8.		N
	However, it shall be checked that the reinforcement is made of a material that does not melt at the test temperature.		N
	From the three single values for the threshold time t the arithmetic mean shall be calculated and stated to the nearest whole second.		P
6.5	Convective heat		P
	The test method is according to EN 367 with the following modifications:		P

EN 407: 2004			
CL.	Requirement of the test	Result--Remark	Verdict
	The size of the test specimen shall be (140 ± 5) mm x (140 ± 5) mm.		P
	If it is not possible to take such a specimen from a glove then a material sample shall be used, provided it was produced in the same way as the glove and includes any seam present.		P
	The specimens shall be taken from or representative of the palm and the back of the glove.		P
	Samples of multilayered assemblies shall correspond to the usual order of the layers.		P
	For each material type or material assembly, three specimens shall be tested.		P
	The arithmetic mean is calculated from the three single values and stated to the nearest whole second.		P
6.6	Radiant heat		P
	The test method according to EN 180 6942:2002, method B, with the following modifications:		P
	Two specimens of (80 ± 5) mm x (170 ± 5) mm shall be taken from the back of the glove of a pair of gloves.		P
	Heat flux density $q = 20 \text{ kW/m}^2$		P
	The arithmetic mean of RHTI24 shall be expressed to the nearest second and determines the performance level		P
6.7	Small drops of molten metal		P
	Test method according to EN 348.		P
	The test shall be carried out on four specimens.		P
	Specimens shall be taken from each palm and back of pair of gloves.		P
	The specimen size is (120 ± 5) mm , (20 ± 5)mm.		P
	The arithmetic means of the two values respectively of the palm area and of the back area shall be calculated and stated to the nearest whole number of drops.		P
	The performance level is based on the lowest of the mean values		P
6.8	Large quantities of molten metal		P
	The test method is given in EN 373 with the following modifications:		P

EN 407: 2004			
CL.	Requirement of the test	Result--Remark	Verdict
	The test shall be carried out with each three specimens of (120 ± 5) mm x (120 ± 5) mm for the required quantity of metal.		P
	If it is not possible to take specimens of this size from the gloves a sample of material shall be tested, provided that the manufacture of the sample material is identical with that of the glove and include any seam present.		P
	The specimens shall be taken from or be representative of the back of the glove		
7	Marking		P
	The marking shall be in accordance with the relevant clause of EN 420.		P
	Main pictogram for protective gloves against thermal risks (i. e. pictogram "Heat <i>and/or</i> Fire") where the performance levels shall be given in the following order		P
	The sign X, instead of a number, means that the glove is not designed for the use covered by the corresponding test.		P
8	Information supplied by the manufacturer		P
	The information supplied by the manufacturer shall be according to the appropriate clause of EN 420.		P
	The manufacturer shall indicate in his information supplied with the gloves:		P
	A <u>clear warning</u> that the glove must not come in contact with a naked flame, if the glove has a performance level 1 or 2 in burning behaviour;		P
	Where applicable, the metal and corresponding level of performance for other materials than iron, tested according to 6.8.;		P
	For multilayer gloves that can be separated, indication that the performance levels are only applicable to the whole glove including all layers.		P

Annex A
(informative)**Uncertainties of measurement and results interpretation**

For each of the required measurements performed in accordance with this standard, a corresponding estimate of the uncertainty of measurement should be evaluated. This estimate of uncertainty should be applied and stated when reporting test results , in order to enable the user of the test report to assess the reliability of the data.

Annex B
(informative)**Example of test method for emergency removal of fire-fighters gloves**

The following test method and requirement are only informative. They are quoted in EN 659. It is recognised that they are adapted to protective gloves designed for fire-fighters, but might not be appropriate to gloves designed for industrial applications. Time for the removal of gloves:
Three pairs of gloves shall be donned and then removed by a test subject, after conditioning at least 24 h at a temperature of (20 ± 2) °C and a relative humidity of (65 ± 5) %.

The time for removal of each pair shall be recorded. The mean value shall be calculated and rounded to the nearest whole second.

This procedure shall be repeated after wet conditioning of three new pairs of gloves according to the relevant clause of ISO 15383 (without putting a pressure of 3, 5 kPa).

The mean value time for removal of a pair of gloves, whether they are dry or wet, shall not be greater than 3 s.

Annex ZA
(informative)**Relationship between this European Standard and the Essential Requirements of EU Directive 89/686/EEC**

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 89/686/EEC.

Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the clauses of this standard given in Table ZA confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

Table ZA — Correspondence between this European Standard and Directive 89/686/EEC

Clauses/subclauses of this EN	Essential Requirements (ERs) of Directive 89/686/EEC, Annex II	
4.3 ; 4.4	3.3	Protection against physical injury (abrasion, perforation, cuts, bits, etc.)
5	1.1.2.2	Classes of protection appropriate to different levels of risks
5 ; 6	3.6	Protection against heat and fire
7	2.12	PPE bearing identification marks related to health and safety
8	1.4	Information supplied by the manufacturer

WARNING : Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

Table 1 — Performance levels for burning behaviour test

Performance level	After flame time s	After glow time s
1	≤ 20	no requirement
2	≤ 10	≤ 120
3	≤ 3	≤ 25
4	≤ 2	≤ 5

Table 2 — Performance levels for contact heat test

Performance level	Contact Temperature T_c $^{\circ}\text{C}$	Threshold time t_t s
1	100	≥ 15
2	250	≥ 15
3	350	≥ 15
4	500	≥ 15

Table 3 — Performance levels for convective heat

Performance level	Heat transfer index HTI s
1	≥ 4
2	≥ 7
3	≥ 10
4	≥ 18

Table 4 — Performance levels for radiant heat

Performance level	Heat transfer t_{24} s
1	≥ 7
2	≥ 20
3	≥ 50
4	≥ 95

Table 5 — Levels of performance for the test of small splashes of molten metal

Performance level	Number of droplets
1	≥ 10
2	≥ 15
3	≥ 25
4	≥ 35

Table 6 — Levels of performances for the test of large quantities of molten metal

Performance Level	Molten iron g
1	30
2	60
3	120
4	200

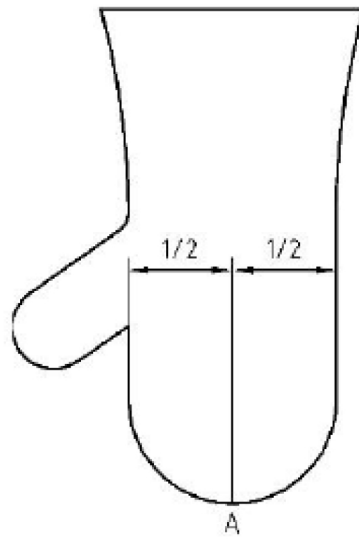


Figure 1 – Mounting of test glove

Example



EN 407

	3	2	1	X	X	X
Burning behaviour						
Contact heat						
Convective heat						
Radiant heat						
Small splashes of molten metal						
Large quantities of molten metal						

The sign X, instead of a number, means that the glove is not designed for the use covered by the corresponding test.

EUT Photos

Photo Appearance of EUT



END OF REPORT