

# TEST REPORT

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Report No.: D190102089\_1

13 February 2019

**APPLICANT:** SHANGHAI V-LION INDUSTRIAL CO., LTD  
(C01606)  
ROOM 507-508, B2, NO. 1158, MIDDLE  
LUOCHUAN ROAD  
SHANGHAI  
CHINA

MS JENNIFER / [jennifer.fang@v-lionsafety.com](mailto:jennifer.fang@v-lionsafety.com)

Date of receipt : 30 Jan. 2019  
Testing period : 30 Jan. 2019  
: 13 Feb. 2019

**Buyer:** —

**Sample description:** 22861 SAFETY SHOES SIZE 36/42/48

Style / Article no. : 22861

Test(s) requested : PHYSICAL&CHEMICAL TEST

Service : REGULAR

Brand / Section : —

Season : —

End use : —

Factory name : —

Factory code : —

**For CE Marking : Yes**

Previous report : —

Product category : SAFETY SHOE

Product type : —

Test stage : FIRST TEST

Supplier name : —

Exported to : —

## 1. Conclusion:

ISO 20345 : 2011		Conformity by size		
Paragraph#	Tests description	36	42	48
5.2.2	Height of upper	Pass	Pass	Pass
5.2.3	Seat region	Pass	--	--
5.3.1.1	Construction (Sole)	Pass	Pass	Pass
5.3.1.2	Upper/sole bond strength	Pass	Pass	Pass
5.3.2.3	Determination of impact resistance	Pass	Pass	Pass
5.3.2.4	Determination of compression resistance	Pass	Pass	Pass
5.3.4	Specific ergonomic features	Pass	--	--
5.3.5.2	Determination of footwear slip resistance - SRA	Pass	Pass	Pass
5.3.5.3	Determination of footwear slip resistance - SRB	Pass	Pass	Pass
5.4.7	pH - Leather	Pass	--	--
5.4.9	Chromium VI	Pass	--	--
5.8.1	Outsole design	Pass	Pass	Pass
5.8.2	Determination of tear strength of outsole	Pass	Pass	Pass
5.8.3	Determination of abrasion resistance of outsole	Pass	Pass	Pass
5.8.4	Flexing resistance of outsole	Pass	Pass	Pass
5.8.6	Determination of interlayer/outsole bond strength	Pass	Pass	Pass
6.2.1.1	Determination of penetration force	Pass	Pass	Pass
6.2.1.2	Construction of penetration-resistant insert	Pass	Pass	Pass

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ISO 20345 : 2011		Conformity by size		
Paragraph#	Tests description	36	42	48
6.2.1.3	Insert dimension	Pass	Pass	Pass
6.2.2.2	Antistatic footwear Failed item(s) for size 36: (Whole footwear : Grey/beige) Failed item(s) for size 42: (Whole footwear : Grey/beige) Failed item(s) for size 48: (Whole footwear : Grey/beige)	Fail	Fail	Fail
6.2.4	Energy absorption of seat region	Pass	Pass	Pass
6.4.2	Determination of resistance to fuel oil	Pass	Pass	Pass
	XRF screening	Pass	--	--
	XRF screening (Tin)	Pass	--	--

Pass: requirements met   Fail: requirements not met   N/A: not applicable   --: test not performed on this size

Approved by



Leo TOM KIT FAI  
Operational Manager

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### 2. Sample(s) description assigned by laboratory:

- 1 UPPER - GREY COW SUEDE LEATHER [ VL-U5 ]
- 2 UPPER - BEIGE OXFORD FABRIC [ VL-U11 ]
- 3 COLLAR - BEIGE OXFORD FABRIC [ VL-U11 ]
- 4 TONGUE - BEIGE OXFORD FABRIC [ VL-U11 ]
- 5 VAMP LINING - GREY NON-WOVEN FABRIC [ VL-L01 ]
- 6 QUARTER LINING/SEAT REGION - YELLOW SANDWICH MESH [ L-1 ]
- 7 INSOLE - WHITE/RED LY ANTI-PERFORATED INSOLE [ LY ]
- 8 INSOCK - BLACK/GREY VELOURS+EVA WITH PERFORATED [ ISC-2 ]
- 9 OUTSOLE - GREY/YELLOW PU/PU SOLE [ ST31 ]
- 10 TOE CAP - WHITE COMPOSITE TOECAP [ 522 ]
- 11 INSERT - WHITE/RED LY ANTI-PERFORATED INSOLE [ LY ]
- 12 DECORATIVE COMPONENTS - BLACK/YELLOW WEBBING/BACK LOOP
- 13 DECORATIVE COMPONENTS - SILVER DECORATIVE PVC



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Safety shoes / Whole footwear : Grey/beige	Method	Requirement Size			Unit	Result Size			Conformity
		36	42	48		36	42	48	
(+) 5.2.2. Height of upper Design Upper height	ISO 20344 : 2011					A 83	A 91	A 101	P P P
(+) 5.2.3. Seat region Conformity	ISO 20345: 2011					Yes	--	--	P -- --
(+) 5.3.1.1. Construction (Sole) Conformity	ISO 20345: 2011					Yes	Yes	Yes	P P P
(+) 5.3.1.2. Upper/sole bond strength Delamination appearance  Bond strength - average	ISO 20344 : 2011					M2-Partial or total breakdown of the sole 6.3	M2-Partial or total breakdown of the sole 6.3	M2-Partial or total breakdown of the sole 6.5	P P P
(+) 5.3.2.3. Determination of impact resistance Clearance - Left foot Clearance - Right foot Development of cracks	ISO 20344 : 2011								P P P
(+) 5.3.2.4. Determination of compression resistance Clearance - Left foot Clearance - Right foot	ISO 20344 : 2011								P P P
(+) 5.3.4. Specific ergonomic features Is the inside surface of the footwear free from rough, sharp or hard areas that caused you irritation or injury? Is the footwear free of features that you consider to make wearing the footwear hazardous? Can the fastening be adequately adjusted? (if necessary) Can we walk without problems? Can we climb stairs without problems? Can we kneel or crouch down without problems ?	ISO 20344 : 2011								P -- --
(+) 5.3.5.2. Determination of footwear slip resistance - SRA Coefficient - Forward flat Coefficient - Forward heel	ISO 20344 : 2011								P P P

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(+) <b>5.3.5.3. Determination of footwear slip resistance - SRB</b>	ISO 20344 : 2011						P P P
Coefficient - Forward flat		≥ 0.18		0.19	0.18	0.18	
Coefficient - Forward heel		≥ 0.13		0.16	0.13	0.13	
(+) <b>6.2.1.1. Determination of penetration force</b>	ISO 20344 : 2011						P P P
Strength of perforing		≥ 1100	N	1100	1100	1100	
Penetration of nail				No penetration	No penetration	No penetration	
(+) <b>6.2.1.2. Construction of penetration-resistant insert</b>	ISO 20345: 2011						P P P
Conformity - Left foot				Yes	Yes	Yes	
Conformity - Right foot				Yes	Yes	Yes	
(+) <b>6.2.1.3. Insert dimension</b>	ISO 20344 : 2011						P P P
Maximum distance X		≤ 6.5	mm	0.0	0.0	0.0	
Maximum distance Y		≤ 17	mm	0.0	0.0	0.0	
No holes in the shadow area				Yes	Yes	Yes	
No more than 3 holes of maximum diameter 3 mm				Yes	Yes	Yes	
(+) <b>6.2.2.2. Antistatic footwear</b>	ISO 20344 : 2011						F F F
Electrical resistance in dry - Left foot		0.1< - ≤1000	Mohms	6630	957	908	
Electrical resistance in dry - Right foot		0.1< - ≤1000	Mohms	6190	5820	1120	
Electrical resistance in wet - Left foot		0.1< - ≤1000	Mohms	56.0	49.6	47.2	
Electrical resistance in wet - Right foot		0.1< - ≤1000	Mohms	43.4	101	52.1	
(+) <b>6.2.4. Energy absorption of seat region</b>	ISO 20344 : 2011						P P P
Energy absorbed - Left foot		≥ 20	J	20	20	23	
Energy absorbed - Right foot		≥ 20	J	20	20	23	

Safety shoes / Upper : Grey cow suede leather	Method	Requirement Size			Unit	Result Size			Conformity
		36	42	48		36	42	48	
(+) <b>5.4.7. pH - Leather</b>	ISO 4045:2018								P -- --
pH value			≥ 3.2			3.75	--	--	
Difference figure			<0.7			0.35	--	--	
(+) <b>5.4.9. Chromium VI</b>	ISO 17075-2:2017								P -- --
Chromium VI			≤ 3.0		mg/kg	<3	--	--	

Safety shoes / Midsole : Grey PU	Method	Requirement Size			Unit	Result Size			Conformity
		36	42	48		36	42	48	

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(+) <b>XRF screening</b>	ASTM F2617 – 15						P -- --
Cd (Cadmium)		<100	ppm	<100	--	--	
<b>XRF screening (Tin)</b>	ASTM F2617 – 15						P -- --
Sn (Tin)		<150	ppm	<150	--	--	

Safety shoes / Outsole : Grey/yellow	Method	Requirement Size			Unit	Result Size			Conformity
		36	42	48		36	42	48	
(+) <b>5.8.1. Outsole design</b>	ISO 20344 : 2011								P P P
Type of outsole						Cleated	Cleated	Cleated	
Outsole thickness - d1			≥4		mm	5.0	8.5	6.0	
Cleat height - d2			≥2.5		mm	2.5	2.5	2.5	
Cleated area (figure 38)						Pass	Pass	Pass	
Cleats are open to the side						Pass	Pass	Pass	
(+) <b>5.8.4. Flexing resistance of outsole</b>	ISO 20344 : 2011								P P P
Rigidity - Angle under 30N					°	59	58	64	
Cut growth after 30000 flex cycles			≤ 4		mm	1.9	1.5	0.1	
Deep of spontaneous crack			≤ 1.5		mm	0.0	0.0	0.0	
Length of spontaneous crack			≤ 4		mm	0.0	0.0	0.0	
Number of spontaneous crack			≤ 5			0	0	0	
(+) <b>5.8.6. Determination of interlayer/outsole bond strength</b>	ISO 20344 : 2011								P P P
Delamination appearance						S2-Surface breakdown of the sole	S2-Surface breakdown of the sole	S2-Surface breakdown of the sole	
Bond strength - average			≥3.0		N/mm	4.3	4.1	3.8	

Safety shoes / Outsole : Yellow rubber	Method	Requirement Size			Unit	Result Size			Conformity
		36	42	48		36	42	48	
(+) <b>5.8.2. Determination of tear strength of outsole</b>	ISO 34-1:2015 Method A								P P P
Tear strength resistance			≥8.0		kN/m	16.1	12.7	11.0	
(+) <b>5.8.3. Determination of abrasion resistance of outsole</b>	ISO 20344 : 2011								P P P
Density					g/cm³	1.18	1.17	1.17	
Relative volume loss			≤150		mm³	123	106	109	
(+) <b>6.4.2. Determination of resistance to fuel oil</b>	ISO 20344 : 2011								P P P
Increase in volume			≤ 12		%	11.3	9.1	9.6	

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Increase in hardness shore A			Shore A	-4	-5	-1	
(+) <b>XRF screening</b>	ASTM F2617 – 15						P -- --
Cd (Cadmium)		<100	ppm	<100	--	--	
<b>XRF screening (Tin)</b>	ASTM F2617 – 15						P -- --
Sn (Tin)		<150	ppm	<150	--	--	

**END OF TEST REPORT**

(+)CNAS accreditation