

Test Report No. 64.441.21.7214.01
Dated 2021-09-30



Applicant: Shine-source footwear co.,ltd
Address: 69 Xingyi Road, Science Park, Hight-tech Industrial Development Zone
Wenzhou, Zhejiang Province, China
Contact Person: Will

Sample Description: Shoes
Order No.: 210046.210078
Style No.: 27M001.70E/110
Color: Blue
Buyer: KSI
Country of Origin: China

Sample Received Date: 2021-09-01 and 2021-09-24 and 2021-09-28
Date of Testing: 2021-09-13 to 2021-09-30

Sample submitted: The sample(s) was (were) submitted by applicant and identified.

Test result(s): Refer to the Section 3



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Laboratory:
TÜV SÜD Certification and Testing
(China) Co., Ltd.,
Xiamen Branch
Testing Location: Dongguan
Form No.: TC_XMN_F_24.04 E
Rev: A/0
Effective Date:2015-03-23

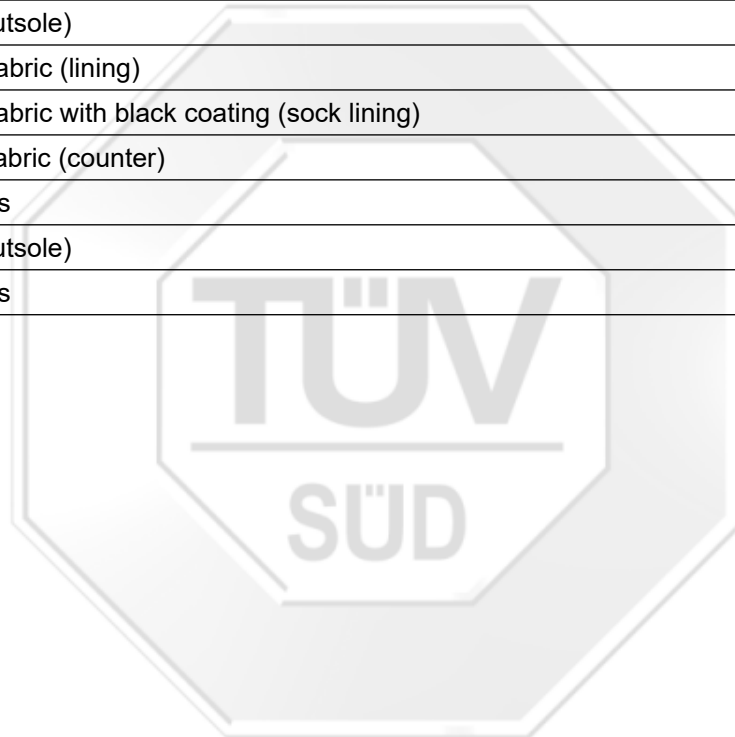
Phone: +86 592 7706188
Fax: +86 592 7706288
E-mail:
report.softlines@tuvsud.com
www.tuvsud.cn

Regd. Office:
TÜV SÜD Certification and Testing (China) Co., Ltd.,
Xiamen Branch
Unit 401 No.93 Huli Industrial Park, Meixi Road, Tong'an
District, Xiamen 361100 P. R. China



1. Description of the test subject:

 <p style="text-align: center;">001~006</p>	 <p style="text-align: center;">007</p>	 <p style="text-align: center;">008</p>
001	Blue plastic with Light green coating (upper)	
002	Yellow plastic (outsole)	
003	White synthetic fabric (lining)	
004	White synthetic fabric with black coating (sock lining)	
005	Silver synthetic fabric (counter)	
006	Whole blue shoes	
007	Yellow plastic (outsole)	
008	Whole blue shoes	



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2. Conclusion:

No.	Test Parameter(s)	Conclusion*
(1)	Azo-Dye Test	Pass
(2)	Carcinogenic Disperse Dye	Pass
(3)	Dimethylfumarate (DMFU) Test	Pass
(4)	Chlorinated Phenols Test	Pass
(5)	Total Lead Test	Pass
(6)	Total Cadmium Test	Pass
(7)	Soluble Heavy Metals	Pass
(8)	Organotin Compounds Test	Pass
(9)	Phthalates Test	Pass
(10)	PAH Test	Pass
(11)	N,N-dimethylacetamide(DMAC) Content Test	Pass
(12)	VOC - Dimethylformamide (DMFA) Test	Pass
(13)	VOC- Benzene Test	Pass
(14)	Chlorinated benzenes and toluenes Test	Pass
(15)	Flame Retardants Test-SCCP	Pass
(16)	Formaldehyde Test	Pass
(17)	Quinoline	Pass
(18)	Outsole Abrasion Resistance-Rotating Drum Method	Pass
(19)	Outsole Flex Resistance – Bennewart Method	Pass
(20)	Resistance Of Footwear To Flexing	Pass
(21)	Outsole Slip Resistance	Pass

Note: Pass= Meet Requirement Fail= Below Requirement
Preliminary Fail (separate tests are recommended)
#= No Comment - = Did Not Perform
N/A = Not Applicable N/C = Not Conducted (due to insufficient sample)

Remark: (1) The results relate only to the items tested (2) Samples are tested as received (3) “*” denotes conclusion was drawn according to the client’s specification (4) The limit is not applicable to composite sample(s) in result section (5) “A” denotes this test is subcontracted to other accredited laboratory

Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given based on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as PASS nor as FAIL.

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TÜV SÜD Certification and Testing (China) Co., Ltd. Xia Men Branch

Approved by

Nemo



Jason

Nemo Chen
Softlines Department

Jason Zhao
Softlines Department



Laboratory:
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Testing Location: Dongguan
Form No.: TC_XMN_F_24.04 E
Rev: A/0
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Phone: +86 592 7706188
Fax: +86 592 7706288
E-mail:
report.softlines@tuvsud.com
www.tuvsud.cn

Regd. Office:
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3. Test Results

3.1 Azo-Dye Test

Client's specification, adoption of the azo dye test methods in accordance with EN ISO 14362-1:2017(for textiles) or EN ISO 17234-1:2020 (for leather), The presence of 4-aminoazobenzene is determined by EN ISO 14362-3:2017 or EN ISO 17234-2:2011. [Reporting Limit = 5.0 mg/kg]

List of Aromatic Amines

Compounds	Result [mg/kg]
	Sample 004+005
4-aminobiphenyl	<5.0
Benzidine	<5.0
4-chloro-o-toluidine	<5.0
2-naphthylamine	<5.0
o-aminoazotoluene	<5.0
5-nitro-o-toluidine	<5.0
4-chloroaniline	<5.0
2,4-diaminoanisole	<5.0
4,4'-diaminodiphenylmethane	<5.0
3,3'-dichlorobenzidine	<5.0
3,3'-Dimethoxybenzidine	<5.0
3,3'-dimethylbenzidine	<5.0
4,4'-methylenedi-o-toluidine	<5.0
p-cresidine	<5.0
4,4'-methylene-bis-(2-chloro-aniline)	<5.0
4,4'-oxydianiline	<5.0
4,4'-thiodianiline	<5.0
o-toluidine	<5.0
2,4-toluenediamine	<5.0
2,4,5-trimethylaniline	<5.0
2-methoxyaniline	<5.0
2,4-xylydine	<5.0
2,6-xylydine	<5.0
4-aminoazobenzene*	<5.0
Method	EN ISO 14362-1:2017
Client's Specification	<30
Conclusion	Pass

- Note: 1. "mg/kg" denotes milligram per kilogram
 2. "<" denotes less than

* Azo colorants that are able to form 4-aminoazobenzene, generate under the current testing condition stated in EN ISO 14362-1:2017 or EN ISO 17234-1:2020 aniline and 1,4-phenylenediamine. The presence of 4-aminoazobenzene is determined by EN ISO 14362-3:2017 or EN ISO 17234-2:2011.



3.2 Carcinogenic Disperse Dye

DIN 54231:2005, determined by LC-MS/MS
 [Reporting Limit = 7.5 mg/kg]

Sample	Result [mg/kg]	Dye detected	Client's specification [mg/kg]	Conclusion
003	<7.5	--	<50	Pass
004	<7.5	--		Pass

- Note:
1. "<" denotes less than
 2. "mg/kg" denotes milligram per kilogram

Tested Dyestuffs :

Carcinogenic Dyestuffs:

C.I. Acid Red 26, C.I. Basic Red 9, C.I. Basic Violet 14, C.I. Disperse Blue 1*, C.I. Disperse Yellow 3*,
 C.I. Direct Black 38, C.I. Direct Blue 6, C.I. Direct Red 28, C.I. Disperse Orange 11, C.I. Disperse Yellow 23,
 C.I. Disperse Orange 149, C.I. Basic Violet 3

*: Both Allergenic and Carcinogenic

3.3 Dimethylfumarate (DMFU) Test

EN 17130:2019 for textile, prEN ISO 16186:2020 for others, determined by GC-MS
 [Reporting Limit = 0.1 mg/kg]

Compounds	Result [mg/kg]	
	Sample 003	Sample 004
Dimethylfumarate (DMFU)	<0.1	<0.1
Client's Specification	< 0.1	
Conclusion	Pass	Pass

- Note:
1. "<" denotes less than
 2. "mg/kg" denotes milligram per kilogram



3.4 Chlorinated Phenols Test

Solvent extraction, GC-MS, ISO 17070:2015, if necessary extraction with KOH, determined by GC-ECD/GC-MSD analysis.

[Reporting Limit = 0.05 mg/kg]

Compounds	Result [mg/kg]	Client's specification [mg/kg]
	Sample 003+004+005	
Pentachlorophenol	<0.05	<1.0
2-Chlorophenol	<0.05	<2.0
3-Chlorophenol	<0.05	<2.0
4-Chlorophenol	<0.05	<2.0
2,3-Dichlorophenol	<0.05	<2.0
2,4-Dichlorophenol+2,5-Dichlorophenol	<0.05	<2.0
2,6-Dichlorophenol	<0.05	<2.0
3,4-Dichlorophenol	<0.05	<2.0
3,5-Dichlorophenol	<0.05	<2.0
2,3,4-Trichlorophenol	<0.05	<2.0
2,3,5-Trichlorophenol	<0.05	<2.0
2,3,6-Trichlorophenol	<0.05	<2.0
2,4,5-Trichlorophenol	<0.05	<2.0
2,4,6-Trichlorophenol	<0.05	<2.0
3,4,5-Trichlorophenol	<0.05	<2.0
2,3,5,6-Tetrachlorophenol	<0.05	<2.0
2,3,4,6-Tetrachlorophenol	<0.05	<2.0
2,3,4,5-Tetrachlorophenol	<0.05	<2.0
Conclusion	Pass	-

- Note:
1. "mg/kg" denotes milligram per kilogram
 2. "<" denotes less than

3.5 Total Lead Test

Composition material test according CPSIA regulation

Test according to ASTM E 1645 (decomposition), ASTM E 1613 (analysed by ICP-OES)

[Reporting Limit = 10.0 mg/kg]

Sample	Result [mg/kg]	Limit [mg/kg]	Conclusion
001+002	<10.0	<500	Pass
004	<10.0		Pass

- Note:
1. "mg/kg" denotes milligram per kilogram
 2. "<" denotes less than



3.6 Total Cadmium Test

Client's specification test according to DIN EN 16711-1:2016 (For Textile),
 EN ISO 17072-2:2019 (For Leather)
 [Reporting Limit = 10.0 mg/kg]

Elements	Result [mg/kg]	
	Sample 001+002	Sample 004
Cadmium	<10.0	<10.0
Client's Specification	< 100	
Conclusion	Pass	Pass

Note: 1. "mg/kg" denotes milligram per kilogram
 2. "<" denotes less than

3.7 Soluble Heavy Metals

Client's specification test with reference to DIN EN 16711-2:2016 for textiles, DIN EN ISO 17072-1:2019 Distilled water extraction for 1 hour at 37°C for leathers, determined by AAS/ ICP-OES

Elements	Result		Client's Specification [mg/kg]
	Sample 003	Sample 004	
Arsenic As (As)	<0.2	<0.2	<1.0
Cadmium As (Cd)	<0.1	<0.1	<1.0
Lead As (Pb)	0.3	<0.2	<1.0
Conclusion	Pass	Pass	-

Note: 1. "mg/kg" denotes milligram per kilogram
 2. "<" denotes less than



3.8 Organotin Compounds Test

Client's specification test with reference to CEN ISO / TS 16179:2012, determined by GC-MS
 [Reporting Limit = 0.025 mg/kg]

Compounds	Result [mg/kg]	
	Sample 001+002	Sample 003+004+005
Tributyltin (TBT)	<0.025	<0.025
Triphenyltin(TPhT)	<0.025	<0.025
Bis-(tributyltin) oxide (TBTO)	<0.025	<0.025
Monobutyltin (MBT)	<0.025	<0.025
Dibutyltin (DBT)	<0.025	<0.025
Monooctyltin (MOT)	<0.025	<0.025
Dioctyltin(DOT)	<0.025	<0.025
Dibutyltin dichloride (DBTC)	<0.025	<0.025
Dimethyltin(DMT)	<0.025	<0.025
Dipheyltin(DPhT)	<0.025	<0.025
Dipropyltin(DPT)	<0.025	<0.025
Monophenyltin (MPhT)	<0.025	<0.025
Tetrabutyltin(TeBT)	<0.025	<0.025
Tricyclohexyltin(TCyHT)	<0.025	<0.025
Trimethyltin(TMT)	<0.025	<0.025
Trioctyltin(TOT)	<0.025	<0.025
Tripropyltin(TPT)	<0.025	<0.025
Client's Specification	Each <1000	
Conclusion	Pass	Pass

- Note:
1. "mg/kg" denotes milligram per kilogram
 2. "<" denotes less than



3.9 Phthalates Test

Test with reference to EN ISO 14389:2014 for textiles, EN ISO 16181-1: 2021 for others, determined by GC-MS
 [Reporting Limit = 0.005 %]

Regulated Phthalates	Result [%]
	Sample 001+002
Bis (2-ethylhexyl) phthalate, (DEHP)	<0.005
Dibutyl phthalate, (DBP)	<0.005
Benzyl butyl phthalate, (BBP)	<0.005
Di-isononyl phthalate, (DINP)	<0.005
Di-isodecyl phthalate, (DIDP)	<0.005
Di-n-octyl phthalate, (DNOP)	<0.005
Diisobutylphthalate, (DIBP)	<0.005
Di-n-hexylphthalate (DnHP)	<0.005
Bis-(2-methoxyethyl)-phthalate, (BMEP)	<0.005
Diisopentyl phthalate (DIPP)	<0.005
n-Pentyl-isopentyl phthalate (PIPP)	<0.005
1,2-Benzenedicarboxylic acid,dipentylester branched and linear	<0.005
1,2-Benzenedicarboxylicacid, di-C6-8-branched alkyl esters,C7-rich (DIHP)	<0.005
1,2-Benzenedicarboxylicacid, di-C7-11-branched and linearalkyl esters (DHNUP)	<0.005
Diethylphthalate (DEP)	<0.005
Dipentyl phthalate (DPP)	<0.005
Dimethylphthalate(DMP)	<0.005
Dicyclohexylphthalate(DCHP)	<0.005
Di-isooctylphthalate(DIOP)	<0.005
Dipropylphthalate(DPRP)	<0.005
Sum of Detected Phthalates	<0.005
Client's specification	Each <0.1%
Conclusion	Pass

- Note:
1. "<" denotes less than
 2. "%" denotes percentage by weight



3.10 PAH Test

Test according to prEN ISO 16190:2021, determined by GC-MS.
 [Reporting Limit = 0.1 mg/kg]

Compounds	Result [mg/kg]	
	Sample 001	Sample 003
Naphthalene	6.10	6.88
Acenaphthylene	<0.1	<0.1
Acenaphthene	<0.1	<0.1
Fluorene	<0.1	<0.1
Phenanthrene	<0.1	<0.1
Anthracene	<0.1	<0.1
Fluoranthene	<0.1	<0.1
Pyrene	<0.1	<0.1
Benzo[a]pyrene	<0.1	<0.1
Benzo[e]pyrene	<0.1	<0.1
Benzo[a]anthracene	<0.1	<0.1
Chrysene	<0.1	<0.1
Benzo[b]fluoranthene	<0.1	<0.1
Benzo[j]fluoranthene	<0.1	<0.1
Benzo[k]fluoranthene	<0.1	<0.1
Benzo[ghi]perylene	<0.1	<0.1
Dibenzo[ah]anthracene	<0.1	<0.1
Indeno[1,2,3-cd]pyrene	<0.1	<0.1
Sum of all REACH and EPA PAH	6.10	6.88
Client's Specification	Each REACH < 0.5, Sum of all REACH and EPA PAH < 10	
Conclusion	Pass	Pass

- Note:
1. "mg/kg" denotes milligram per kilogram
 2. "<" denotes less than

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3.10 PAH Test

Test according to prEN ISO 16190:2021, determined by GC-MS.
 [Reporting Limit = 0.1 mg/kg]

Compounds	Result [mg/kg]	
	Sample 005	Sample 007
Naphthalene	5.58	5.19
Acenaphthylene	<0.1	<0.1
Acenaphthene	<0.1	<0.1
Fluorene	<0.1	<0.1
Phenanthrene	0.42	<0.1
Anthracene	<0.1	<0.1
Fluoranthene	<0.1	<0.1
Pyrene	<0.1	<0.1
Benzo[a]pyrene	<0.1	<0.1
Benzo[e]pyrene	<0.1	<0.1
Benzo[a]anthracene	<0.1	<0.1
Chrysene	<0.1	<0.1
Benzo[b]fluoranthene	<0.1	<0.1
Benzo[j]fluoranthene	<0.1	<0.1
Benzo[k]fluoranthene	<0.1	<0.1
Benzo[ghi]perylene	<0.1	<0.1
Dibenzo[ah]anthracene	<0.1	<0.1
Indeno[1,2,3-cd]pyrene	<0.1	<0.1
Sum of all REACH and EPA PAH	6.00	5.19
Client's Specification	Each REACH < 0.5, Sum of all REACH and EPA PAH < 10	
Conclusion	Pass	Pass

- Note:
1. "mg/kg" denotes milligram per kilogram
 2. "<" denotes less than

3.11 N,N-dimethylacetamide(DMAC) Content Test

Client's specification test with reference to EN 17131:2019 for textile, prEN ISO 16189:2021 for others, determined by GC-MS
 [Reporting Limit = 10 mg/kg]

Compounds	Result [mg/kg]
	Sample 004
N,N-dimethylacetamide (DMAC)	<10
Client's Specification	< 1000
Conclusion	Pass

- Note:
1. "mg/kg" denotes milligram per kilogram
 2. "<" denotes less than



3.12 VOC - Dimethylformamide (DMFA) Test

Client's specification test with reference to EN 17131:2019 for textile, prEN ISO 16189:2021 for others, determined by GC-MS
 [Reporting Limit = 10 mg/kg]

Compounds	Result [mg/kg]
	Sample 004
Dimethylformamide	631
Client's Specification	<1000
Conclusion	Pass

Note: 1. "mg/kg" denotes milligram per kilogram
 2. "<" denotes less than

3.13 VOC- Benzene Test

Baked in oven, quantitatively / semi-quantitatively analysis by using headspace-GC-MS
 Headspace (sample weight: 1g - uncut, Temperature: 90°C, for 45 minutes)
 [Reporting Limit = 1.0 mg/kg]

Compounds	Result [mg/kg]
	Sample 004
Benzene	<1
Client's Specification	< 5
Conclusion	Pass

Note: 1. "mg/kg" denotes milligram per kilogram
 2. "<" denotes less than

3.14 Chlorinated benzenes and toluenes Test

Test with reference to EN 17137:2018
 [Reporting Limit = 0.2 mg/kg]

Compounds	Result [mg/kg]
	Sample 005
p-Chlorobenzotrchloride	<0.2
Benzotrchloride	<0.2
BenzylChloride	<0.2
Client's Specification	Each<1.0
Conclusion	Pass

Note: 1. "mg/kg" denotes milligram per kilogram
 2. "<" denotes less than



3.14 Chlorinated benzenes and toluenes Test

Test with reference to EN 17137:2018
 [Reporting Limit = 0.2 mg/kg]

Compounds	Result [mg/kg]
	Sample 003+004
1,2-Dichlorobenzene	<0.2
1,3-Dichlorobenzene	<0.2
1,4-Dichlorobenzene	<0.2
1,2,3-Trichlorobenzene	<0.2
1,2,4-Trichlorobenzene	<0.2
1,3,5-Trichlorobenzene	<0.2
1,2,3,4-Tetrachlorobenzene	<0.2
1,2,3,5-Tetrachlorobenzene	<0.2
1,2,4,5-Tetrachlorobenzene	<0.2
Pentachlorobenzenes	<0.2
Hexachlorobenzene	<0.2
2-Chlorotoluene	<0.2
3-Chlorotoluene	<0.2
4-Chlorotoluene	<0.2
2,3-Dichlorotoluene	<0.2
2,4-Dichlorotoluene	<0.2
2,5-Dichlorotoluene	<0.2
2,6-Dichlorotoluene	<0.2
3,4-Dichlorotoluene	<0.2
2,3,6-Trichlorotoluene	<0.2
2,4,5-Trichlorotoluene	<0.2
2,3,4,5-Tetrachlorotoluene	<0.2
2,3,4,6-Tetrachlorotoluene	<0.2
Pentachlorotoluene	<0.2
p-Chlorobenzotrichloride	<0.2
Benzotrichloride	<0.2
BenzylChloride	<0.2
Sum of Chlorinated Organic Carriers	<0.2
Client's Specification	1,2-Dichlorobenzene<10, other each<1.0, Sum COCs <10
Conclusion	Pass

- Note:
1. "mg/kg" denotes milligram per kilogram
 2. "<" denotes less than



3.15 Flame Retardants Test-SCCP

Test with reference to EN ISO 18219-1:2019 for leather, EN ISO 22818:2021 for others,
determined by GC-MS
[Reporting Limit = 100 mg/kg]

Flame Retardant	Result [mg/kg]	
	Sample 001+002	Sample 004
Short chain chlorinated paraffins (SCCP)	<100	<100
Client's specification	< 1000	
Conclusion	Pass	Pass

Note: 1. "mg/kg" denotes milligram per kilogram
2. "<" denotes less than

3.16 Formaldehyde Test

EN ISO 14184-1:2014
Formaldehyde content determined by UV-Visible spectroscopy
[Reporting Limit = 16 mg/kg]

Sample	Result [mg/kg]	Client's specification [mg/kg]	Conclusion
003+004+005	<16	<75	Pass

Note: 1. "mg/kg" denotes milligram per kilogram
2. "<" denotes less than

3.17 Quinoline

Test with reference to DIN 54231:2005
[Reporting Limit = 10 mg/kg]

Compounds	Result [mg/kg]
	Sample 003+004+005
Quinoline	<10
Client's Specification	< 50
Conclusion	Pass

Note: 1. "mg/kg" denotes milligram per kilogram
2. "<" denotes less than



3.18 Outsole Abrasion Resistance-Rotating Drum Method: EN 12770:1999

Sample	Result(s)		Client's Specification	Conclusion
002	Density(g/cm ³)	1.14	-	Pass
	Relative Volume Loss (mm ³)	169.7	≤300	

3.19 Outsole Flex Resistance – Bennewart Method: ISO 17707:2005

Sample	Result(s)		Client's Specification (mm)	Conclusion
002	After 30,000 cycles	The initial cut has no significant increase in length	Cut growth ≤4.0	Pass

Notes: 1."#1"denotes spontaneous of new cracks were found, the longest length is 2.5mm at the ball part of the flexing zone of shoe

3.20 Resistance Of Footwear To Flexing: SATRA TM92:1992

Flexing Angle:70°

Sample	Inspection Stage	Result(s)	Client's Specification	Conclusion
008	After 20,000 cycles:	No damage	No damage	Pass
	After 50,000 cycles:	No damage		

3.21 Outsole Slip Resistance: SATRA TM144:2011

Applied vertical force:400N,Test dry before wet, Clay tile surface

Sample	Result(s)			Client's Specification	Conclusion
006	Dry	Heel part:	0.76	Min. 0.3	Pass
		Forepart:	0.71		
	Wet	Heel part:	0.41	Min. 0.3	
		Forepart:	0.44		

Notes: 1.The contact angle between the bottom of the heel and the floor was 7±0.5°.

-- END OF THE TEST REPORT --