The People's Republic of China

EDICT OF GOVERNMENT

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GB 25038 (2009) (English): Rubber shoes healthy and safe specification

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National Standard for the People's Republic of China

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Health, Safety and Technology Specifications for Rubber Shoes

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Introduction

Provisions under Chapter 5 of the Standard are mandatory for enforcement (but PH limit is regulated for recommendation), and the other provisions are recommendatory for implementation. The Standard shall not be deemed as equivalent to EN14602:2004 Footwear-Test methods for the assessment of ecological criteria, 2002/231/EC Establishing revised ecological criteria for award of the Community eco-label to footwear and amending

Decision 1999/179/EC, or amending Decisions 2002/231/EC , 2002/255/EC ,

2002/371/EC , 2003/200/EC and 2003/287/EC in order to prolong the ecological criteria for the award of the Community eco-label to certain products in terms of consistency.

Appendix A and B attached to the Standard are normative appendices.

The Standard was proposed by the China Petroleum and Chemical Industry Association and archived by the Technical Sub-committees of Rubber Shoes under the Standardisation Committee of Chinese Rubber and Rubber Products. It was jointly drafted by a host of companies and organisations, including the Shanghai Institute of Quality Inspection and Technical Research, Qingdao Hicorp Group, Shanghai Warrior Shoes Co., Ltd, the Qingdao Double Star Corp. Jihua 3537 Shoe-making Co., Ltd, the Zhejiang Renben Shoes Co., Ltd, the Putian-based China National Testing Centre for Footwear, and the Wenzhou-based China National Quality Testing & Inspection Centre for Footwear.

Specifically, major drafters include Xu Dejia, Zhang Ruohong, Sun Xu, Ma Qinghua, Ma Yanhong, Xu Bingde, Sha Shufen, Chen Songxiong, Ni Bangguo, Tong Yugui, Huang Ying, Ji Hongchou, Cheng Qun and Jiang Wu.

Health, Safety and Technology Specifications for Rubber Shoes

1. Scope

The Standard stipulates terms and definitions, classification, requirements, testing methods and sampling, as well as assessment of health and safety performance of rubber shoes.

The Standard applies to rubber shoes made out of synthetic leather, artificial leather or textile materials, and processed by hot vulcanisation techniques.

2. Normative references

The terms of the following documents shall be incorporated as part of the Standard after being referred in the Standard. Any document reference with a specific date shall have its amendments or revisions (excluding corrections) non-applicable to the Standard. However, the parties are encouraged (on the basis of unanimous agreement) to discuss if the latest version can be applied to the Standard. Any document reference without any specific date shall have the latest version applied to the Standard.

GB/T 2912.1-1988 Textile-Measurement of formaldehyde content Part 1: Measurement of dissociated and hydrolytic formaldehyde (Water extraction)

GB/T 7573-2002 Textile-Measurement of PH value of the water extraction solution

GB/T 17592-2006 Textile-Measurement of forbidden azo dyes

GB/T 17593.1-2006 Textile-Measurement of heavy metal content Part 1: Atomic absorption spectrometry

GB/T 17593.2-2007 Textile-Measurement of heavy metal content Part 2: ICP-AES GB/T 17593.4-2006 Textile-Measurement of heavy metal content Part 4: As & Hg, Atomic fluorescence spectrum

GB/T 18414.1-2006 Textile-Measurement of irgasan Part 1: Gas chromatography-mass spectrometry

GB/T 18414.2-2006 Textile-Measurement of irgasan Part 2: Gas chromatography GB/T xxxx-xxxx Rubber and elastomeric materials: Measurement of N-Nitrosamine GB/T 2882-2007 Footwear Testing methods for upper, lining and innersole: Test for colour fastness to rubbing (ISO 17700 : 2004, IDT)

3. Terms and definitions

The following terms and definition are applicable to this Standard.

3.1. Requirements on health and safety performance of rubber shoes

Such requirements must be met so as to avoid any damage or risk to human health or safety.

3.2. Infants' rubber shoes

"Infants' rubber shoes" means footwear exclusively for children younger than 36-months old (normally they wear shoes sized smaller than 170).

4. Product classifications

The products are classified into two categories in terms of customers' age:

—Category A: Infants' rubber shoes

-----Category B: Rubber shoes other than for infant use

5. Requirements

Health and safety performance of rubber shoes shall meet the following requirements listed in Table 1.

	Testing items		J 1	Limited value	
Shoe parts to be tested			Unit	Category A	Category B
Upper, lining and innersole (textile, synthetic or artificial leather)	ph Value			4.0-9.0	
	Maximum content of free formaldehyde \leq		mg/kg	75	15 0
	Extractable heavy metal content	(Pb) ≤		1.0	
		(Cd) ≤	mg/kg	0.1	
		(As) ≤	00	1.0	
	Decomposable and harmful aromatic amine dye ^a ^b			The chemical shall not be used.	
	Chlorophenol	Pentachlorophenol (PCP)		The chemical shall not be found	
		2,3,5,6-Tetrachlorophenol (TeCP)	mg/kg	The chemical shall not be found	
Rubber parts	N-Nitrosamine ^b ^c		mg/kg	The chemical shall not be found	
Colour fastness to rubbing for upper and innersole ^d (Transfer of colour)≥			Grade	3	2-3

Table 1. Requirements on health and safety performance

^a. A list of aromatic amines that may cause cancer shall not be disintegrated from the dyes under reducing conditions. Refer to Appendix A for the list.

^{b.} Permissible limit for aromatic amines, PCP, TeCP and N-Nitrosamine is 30mg/kg, 0.5mg/kg, 0.5mg/kg and 0.5mg/kg respectively.

^c. Refer to Appendix B for a list of N-Nitrosamines that should not be found in the rubber.

^d. According to Method A described in GB/T 2882-2007, drip sweat onto the rubber and rub it 50 times before evaluating the level of colour transfer with a standard grey scale.

6. Test methods

6.1. Test of PH value

Follow relevant procedures in GB/T 7573-2002 for PH test of textile materials, artificial leather and synthetic leather.

6.2. Test of free formaldehyde content

Follow relevant procedures in GB/T 2912.1-1998 for the free formaldehyde content test of textile materials, artificial leather and synthetic leather.

6.3. Test of extractable heavy metal content (Pb, Cd, As)

Follow relevant procedures in GB/T 17593.1-2006 for the test of extractable heavy metal content (Pb, Cd). For the test of As content, follow the relevant procedures in GB/T 17593.4-2006. Content

of the three heavy elements can be also tested according to GB / T 17593.2-2007.

6.4. Content test of decomposable and harmful aromatic amine dyes

Follow relevant procedures in GB/T 17592-2006 for content test of decomposable and harmful

aromatic amine dyes retained in textile materials, artificial leather and synthetic leather.

6.5. Test of PCP and TeCP content

Follow relevant procedures in GB/T 18414.1-2006 or GB/T 18414.2-2006 for content test of PCP and TeCP retained in textile materials, artificial leather and synthetic leather.

6.6. Content test of N-Nitrosamine

Follow relevant procedures in GB/T xxxx-xxxx for the content test of N-Nitrosamine in rubber parts.

6.7. Test of colour fastness to rubbing in lining and innersole.

Follow relevant procedures in QB/T 2882-2007 for the test of colour fastness to rubbing in lining and innersole.

7. Sampling and test result assessment

7.1. Sampling methods

- 7.1.1. Randomly select a minimum number of finished shoes as required to take health and safety performance test.
- 7.1.2. Test must be done separately if materials comprising upper, lining and innersole can be taken apart. If the upper and lining can't be divided, take the lining material for the test and assess the outcome.
- 7.1.3. If the sample materials taken from finished shoes fail to live up to test requirements, the same batch of materials used in the same part of the shoes can be tested.
- 7.1.4. The materials (or the location from which part of the shoes such materials are sampled) must be specified in the test report.

7.2. Test result assessment

- 7.2.1. If the results of all test items meet the requirements listed in Table 1, the batch of products shall be considered to have passed the health and safety performance test.
- 7.2.2. If the result of any test item fails to meet any requirement listed in Table 1, the batch of products shall be considered to have failed the health and safety performance test.

Annex A

(Normative Annex) A list of aromatic amines that couldn't be found in the dye under reducing conditions

A.1 Category A: Aromatic amines listed in Table A.1 that can cause cancer in humans.

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Chinese name	English name	CAS No.				
4-氨基联苯	4-aminobiphenyl	92-67-1				
联苯胺	benzidine	92-87-5				
4-氯-邻甲基苯胺	4-chloro-o -toluidine	95-69-2				
2-萘胺	2-naphthylamine	91-59-8				

Table A.1 Aromatic amines can cause cancer in humans.

A.2 Category B: Aromatic amines listed in Table A.2 that can cause cancer in animals and may cause cancer in humans.

 Table A.2 Aromatic amines can cause cancer in animals and may cause cancer in humans.

Chinese name	Chinese name English name	
	氨基偶氮甲苯 2-aminoazotoluene	
2-氨基-4-硝基甲苯	2-amino-4-nitrotoluene	99-55-8
对氯苯胺	<i>p</i> –chloroaniline	106-47-8
2,4-二氨基苯甲醚	2, 4-diaminoanisole	615-05-4
4,4′-二氨基二苯甲烷	4, 4'-diaminodiphenylmethane	101-77-9
3,3′- 二氯 联苯胺	3, 3'-dichlorobenzidine	91-94-1
3,3′-二甲氧基联苯胺	3, 3'-dimethoxybenzidine	119-90-4
3,3′-二甲基联苯胺	3, 3'-dimethylbenzidine	119-93-7
3,3′-二甲基-4,4′-二氨基二	3, 3'-dimethyl-4, 4'-Diaminodiphenylmethane	838-88-0
苯甲烷		
2-甲氧基-5-甲基苯胺	p -cresidine	120-71-8
4,4′-亚甲基-二-(2-氯苯	4, 4'- methylene-bis-(2-chloroaniline)	101-14-4
<u> </u>		
4,4′-二氨基二苯醚	4, 4'-oxydianiline	101-80-4
4,4′-二氨基二苯硫醚	4, 4'-thiodianiline	139-65-1
邻甲苯胺	2 -toluidine	95-53-4
2,4- 二氨 基甲苯	2, 4-toluylenediamine	95-80-7
2,4,5-三甲基苯胺	2, 4, 5-trimethylaniline	137-17-7
邻甲氧基苯胺	2-anisidine	90-04-0
2,4-二甲基苯胺	2, 4-xylidine	95-68-1
2,6-二甲基苯胺	2, 6-xylidine	87-62-7

Annex B (Normative Annex) A list of N-Nitrosamine that could not be found in the rubber

See Table B.1 for the list of N-Nitrosamine could not be detected in the rubber.

		Table B.1		
No.	Chinese name	English name	CAS No.	Molecular formula
1	N-亚硝基二甲胺(NDMA)	N-nitrosodimethylamine	62-75-9	C ₂ H ₆ N ₂ O
2	N-亚硝基二乙胺(NDEA)	N-nitrosodiethylamine	55-18-5	C ₄ H ₁₀ N ₂ O
3	N-亚硝基二丙基胺(NDPA)	N-nitrosodipropylamine	621-64-7	C ₆ H ₁₄ N ₂ O
4	N-亚硝基二丁基胺(NDBA)	N-nitrosodibutylamine	924-16-3	C ₈ H ₁₈ N ₂ O
5	N-亚硝基哌啶(NPIP)	N-nitrosopiperidine	100-75-4	C ₅ H ₁₀ N ₂ O
6	N-亚硝基吡咯烷(NPYR)	N-nitrosopyrrolidine	930-55-2	C ₄ H ₈ N ₂ O
7	N-亚硝基吗啉(NMOR)	N-nitrosomorpholine	59-89-2	C ₄ H ₈ N ₂ O ₂
8	N-亚硝基-N-甲基苯胺 (NMPhA)	N-nitroso N-methyl N-phenylamine	614-00-6	C7H8N2O
9	N-亚硝基-N-乙基苯胺(NEPhA)	N-nitroso N-ethyl N-phenylamine	612-64-6	C ₈ H ₁₀ N ₂ O