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# QB

## LIGHT INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

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## Children's leather sandals

儿童皮凉鞋

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## Foreword

This standard is drafted according to the rules provided in GB/T 1.1-2009.

This Standard was proposed by China Light Industry Council.

This Standard shall be under the jurisdiction of National Standardization Technical Committee leather footwear sub-technical committee (SAC/TC 305/SC1).

Drafting organizations of this standard: National Center for Footwear Quality Supervision and Inspection (Wenzhou), Zhejiang Red Dragonfly Footwear Co Ltd., Shanghai Xiongmeimao Children's Products Co., Ltd., New Belle Footwear (Shenzhen) Co., Ltd. AND Qibu (China) Children's Products Co., Ltd.

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## Children's Leather Sandals

### 1 Scope

This Standard specifies children's leather sandals' terms and definitions, product classification, requirements, test methods, inspection rules as well as packaging, transportation and storage.

This Standard applies to children's leather sandals made of different processes of which the uppers (bands) surface is made of natural leather, artificial leather, synthetic leather and textile material.

### 2 Normative references

The following documents are indispensable for application of this document. For the dated documents so quoted, only the dated versions apply to this document. For the undated documents so quoted, the latest versions (including all modification sheets) apply to this document.

GB/T 2703 Footwear - Vocabulary

GB/T 2912.1-2009 Textiles - Determination of formaldehyde - Part 1: Free and hydrolyzed formaldehyde (water extraction method) (ISO 14184-1:1998, MOD)

GB/T 3293-2007 Chinese last systems

GB/T 3293.1 Shoes sizes (GB/T 3293.1-1998, ISO407:1991, IDT)

GB/T 3903.1-2008 Footwear - General test methods - Flexing resistance

GB/T 3903.2-2008 Footwear - General test methods - Abrasion resistance

GB/T 3903.3-2011 Footwear - General test methods - Peeling strength

GB/T 3903.4-2008 Footwear - General test methods - Hardness

GB/T 3903.5-2011 Footwear - General test methods - Appearance quality

GB 6675-2003 National safety technical code for toys (ISO 8124.1:2000, ISO8124.2:1994, ISO8124-3:1997, MOD)

GB/T 17592-2011 Textiles - Determination of the banned azo colourants

GB/T 19941-2005 Leather and fur - Chemical tests - Determination of formaldehyde

content(ISO/TC 17226:2003, MOD)

GB/T 19942-2005 Leather and fur - Chemical tests - Determination of banned azo colourants (ISO/TC 17234:2003, MOD)

GB/T 22807-2008 Leather and fur - Chemical tests - Determination of chromium VI content

GB 28011-2011 Shanks for footwear

QB/T 1472 Flexing index of fibrous board for footwear

QB/T 2673 Footwear - Specification of marking

QB/T 2709-2005 Leather - Physical-mechanical tests - Determination of thickness (ISO 2589:2002, MOD)

QB/T 2882-2007 Footwear - Test methods for uppers linings and insoles - Colour fastness to rubbing (ISO 17700:2004, IDT)

QB/T 4340-2012 Footwear - Chemical test method - Total heavy metal content - Inductively coupled plasma emission spectroscopy

HG/T 2877-1997 Determination of pull-out force of upper bands from bottom of slippers or sandals

### 3 Terms and definitions

The following terms and the definitions defined in GB/T 2703 apply to this document.

#### 3.1

##### **Infant's leather sandals**

Leather sandals for infants at the age of 3 or below, of which the shoe size is not more than 170 mm.

#### 3.2

##### **Children's leather sandals**

Leather sandals for children above the age of 3 and under 14, of which the shoe size is not more than 250 mm.

#### 3.3

##### **Closed sandals**

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	2.8mm
1) For shoe size $\leq 25$ mm, the positions of force at front half outsoles can be exempted from assessment on pattern-deduction thickness.	

### 5.3 Odor

Odor rating is not greater than grade 2.

### 5.4 Total thickness of shoe upper-band

Not less than 1.0 mm.

### 5.5 Physical-mechanical property (infants' lather sandals are not tested)

#### 5.5.1 Folding-resistant property

**5.5.1.1** Test conditions: Pre-cut 5 mm, 40,000 times of continuous folding.

**5.5.1.2** Technical indexes of folding-resistant property: Length of cut gap after folding is not greater than 20.0 mm. New crack length after folding is not greater than 5.0 mm; there shall be at most 3 new cracks after folding. After folding, upper shall be free of crazing and facture; upper-sole shall be free of glue failure.

**5.5.1.3** Natural leather outsoles shall be conducted for non-cut hard fold test for 40,000 times; single crack shall not be greater than 5 mm; there shall be at most 3 cracks. After folding, upper shall be free of crazing and facture; upper-sole shall be free of glue failure.

**5.5.1.4** Folding-resistant property is not tested if shoe size is below 230 mm; for thickness of shoe sole's folding portion that is more than 25 mm, or the folding portion of shoe sole is made from hard material, it is not subjected to folding-resistant property.

#### 5.5.2 Wearing-resistant property

**5.5.2.1** Test conditions: Apply a pressure of 4.9 N; wear continuously for 20 min.

**5.5.2.2** Wearing resistance technical specifications: Wear-scare length is not greater than 15.0 mm.

**5.5.2.3** Natural leather outsoles are not tested on wearing-resistant property.

#### 5.5.3 Upper-sole peeling-strength

**5.5.3.1** Test conditions: Blade width is  $(10 \pm 0.05)$  mm.

**5.5.3.2** For children's leather sandals that are manufactured through non-adhesive (including sticky seam) process, peeling-strength is not tested.

**5.5.3.3** For children's leather sandals (excluding composite sole) of which the thickness of

## 6 Test method

### 6.1 Sensory quality

Inspect according to GB/T 3903.5-2011.

### 6.2 Peculiar smell

#### 6.2.1 Test equipment

Dryer: diameter is 240mm (shoe size is 200mm and below), diameter is 300mm (shoe size > 200mm ~ 250mm).

#### 6.2.2 Test environment

Test shall be carried out in environment at here the gas is distributed freely; adjustment space shall be ideal as possible.

#### 6.2.3 Judging personnel

There shall be at least 3 personnel. They shall be the professionals who have been trained and evaluated, without smell defects. Heavy smokers, personnel who use strong perfume-cosmetics or after-drinking are not qualified for judging.

#### 6.2.4 Number of samples

Two pairs.

#### 6.2.5 Test procedures

**6.2.5.1** Clean and dry the vacuum drier to make it tasteless.

**6.2.5.2** Respectively put each shoe into vacuum dryer; apply cover; stand at room temperature for 24 h.

**6.2.5.3** During peculiar smell judgment, lid is removed to form an opening of 20 mm; test personnel moves his head closely to the test vessel (at a distance of about 15 cm); then flap slowly with hand; slowly absorb the gas in vacuum dryer; the time is not more than 5 s.

**6.2.5.4** For the remaining 3 shoes, repeat the steps in 6.2.5.3. Interval between two tests is 2 min.

#### 6.2.6 Judgment of test results

Judgment of peculiar smell on each shoe shall conform to the provisions in Table 4. Adopt the opinions of over half judging personnel as the assessment result of that shoe; take the

**6.9.3** Clamp moving speed: (25±5) mm/min.

**6.9.4** Environmental temperature: (23±2)°C.

**6.9.5** Upper and lower clamps are respectively for shoe sole (upper-sole's bonding course shall not be clapped) and shoe upper-band.

**6.9.6** Maximum force value applied to pull shoe upper and sole open is called pullout force; take the arithmetic mean of two test results as the test result. Results of each shoe are separately indicated.

**6.9.7** Calculation of upper-band pullout force:

$$\sigma = \frac{F}{B} \dots\dots\dots (1)$$

Where,

$\sigma$  -- Upper-band pullout force, in Newton per centimeter (N/cm);

$F$  -- Maximum pullout force, in Newton (N);

$B$  -- Upper-band width of strip, in centimeters (cm).

### **6.10 Upper-band pullout force**

Inspect according to method B in HG/T 2877-1997; take 1 pair of samples; respectively take 1 sample from inner and outer sides of each shoe; take the arithmetic mean of two test samples from each shoe as the result; the result of each shoe is respectively indicated.

### **6.11 Flexing index of fiberboard**

Inspect according to QB/T 1472; draw samples from warehouse that are of the same lot number for inspection.

### **6.12 Rubbing fastness color of lining and inner pad**

Rub with artificial perspiration for 50 times according to method A in QB/T 2882-2007; draw same materials from warehouse of factory for inspection when lining and inner pad cannot be sampled.

### **6.13 Cr in leather (VI)**

**6.13.1** Preparation of test piece: Lining and upper are separately detected; different materials may also be detected separately. If lining and upper cannot be separated, they are inspected together; inspection method is the same as lining material.



**6.13.2** Test method: Inspect according to GB/T 22807-2011.

#### **6.14 Harmful decomposable aromatic amine dyes**

Test piece preparation is inspected as in 6.13.1; textiles are inspected according to GB/T 17592-2011; leather are inspected according to GB/T 19942-2005.

#### **6.15 Free and hydrolysable formaldehyde**

Test piece preparation is inspected as in 6.13.1; textiles are inspected according to GB/T 2912.1 - 2009; leather are inspected according to GB/T 19942-2005.

#### **6.16 Total content of heavy metals**

Inspect according to QB/T 4340-2012.

#### **6.17 Physical safety performance**

##### **6.17.1 Accessible sharp edges and sharp tips**

Inspect respectively according to the provisions in Annex A.5.8 and A.5.9 of GB 6675-2003.

##### **6.17.2 Tensile strength of small accessories**

Accessories of infant's leather sandal that may be grabbed or gripped with teeth by infants shall be subjected to this test; inspection is based on Annex B.

##### **6.17.3 Steel shank**

Inspect according to the test method specified in GB 28011-2011.

## **7 Inspection rules**

### **7.1 Inspection classification**

Product inspection is divided into exit-factory inspection and type inspection.

### **7.2 Exit-factory inspection**

**7.2.1** Take the products that are for quarantine-inspection as one lot; randomly draw 3 pairs for inspection; insole fiberboard, lining and inner pad may be drawn from the products in warehouse that are of the same lot with the products under inspection.

**7.2.2** Inspection items shall conform to the provisions of Table 5.

d) When national quality supervision and inspection agency proposes type inspection requirements.

### **7.3.2 Sampling quantity**

Take the products inspected as one lot; randomly draw 3 pairs for inspection; insole fiberboard, lining and inner pad may be drawn from the products in warehouse that are of the same lot as the products under inspection.

Sampling quantity shall meet the test requirements of corresponding standards.

### **7.4 Inspection items**

Inspection items are shown in Table 5.

### **7.5 Judgment rules**

#### **7.5.1 Single-pair judgment**

**7.5.1.1** If peculiar smell, physical-mechanical property, limited substances and physical safety performance meet the requirements, main items of sensory quality meet the requirements, there are no more than two secondary items that do not meet the requirements, then this pair products are deemed as qualified.

**7.5.1.2** If there is 1 or more items of peculiar smell, physical-mechanical property, limited substances and physical safety performance not meeting the requirements, or 1 or more items of sensory quality do not meet the requirements, or there are more than two secondary items not meeting the requirements, then this pair products are deemed as unqualified.

#### **7.5.2 Lot judgment**

**7.5.2.1** If all inspection items meet the requirements, then this lot of products are judged as qualified.

**7.5.2.2** In peculiar smell and physical-mechanical property, if 1 shoe does not pass the test, then draw double-quantity samples to re-inspect on the non-conforming item. If all meet the standard requirements, then this lot of products are judged as qualified. If 1 or more shoes do not meet requirements, then this lot of products are judged as disqualified.

**7.5.2.3** For limited substances, if 1 physical safety performance's inspection item does not conform to provisions of this Standard, then the whole lot of the products are judged as disqualified.

## **8 Packaging, transportation and storage**

### **8.1 Packaging**

Products shall have inner and outer packages. Soft package, moisture proof agent, mothproofing agent and mildew preventive may be added if necessary.

## **8.2 Transportation and storage**

**8.2.1** Heavy load, moisture, rain, direct sunlight or mixing with oil, acid and other corrosive substances shall be avoided during transportation and storage.

**8.2.2** Warehouse shall be kept ventilated and dry. Distance from products to ground and wall shall be more than 0.2 m to prevent being affected by damp.

**8.3** Special requirements for packaging, transportation and storage shall be otherwise agreed by buying and selling sides. For exporting products, follow the contract.

## Annex B

### (Normative)

#### Tensile Strength Test of Small Accessories

##### B.1 General rules

Protrusions or components of infant's leather sandals that may be grabbed or gripped with teeth by infants shall all be subjected to this test.

##### B.2 Inspection appliances

**B.2.1** Ergometer (force measuring machine): load is at least 100 N, accuracy is  $\pm 2$  N.

**B.2.2** Three-jaw tension clamps or suitable clamps: the use of the clamp shall not impact the integral structure between components and shoes.

**B.2.3** Stopwatch (timer).

**B.2.4** Vernier caliper: accuracy is 0.1 mm.

##### B.3 Test methods

**B.3.1** In 5 s, make it parallel to the main-axis of test component; uniformly apply a force of  $(70\pm 2)$  N and hold for 10 s before unloading; check whether the components fall off.

**B.3.2** Remove tension clamp; install another clamp that is suitable for the vertical main-axis test to apply tension load.

**B.3.3** In 5 s, make it perpendicular to main-axis of test component 5 s; uniformly apply a force of  $(70\pm 2)$  N and hold for 10 s before unloading; check whether the components fall off.

\_\_\_\_\_ **END** \_\_\_\_\_