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Safety requirements for child tricycles

儿童三轮车安全要求

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Table of Contents

Safety requirements for child tricycles

1 Scope

This standard specifies the safety technical requirements and test methods for child tricycles for one or more children.

This standard does not apply to toy tricycles or tricycles designed for other special purposes (such as amusement tricycles).

2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this Standard. For the dated references, the subsequent amendments (excluding corrections) or revisions do not apply to this Standard; however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB 6675-2003 Toys safety - Part 1: Basic code

3 Terms and definitions

The following terms and definitions apply to this standard.

3.1

Child tricycles

A wheeled vehicle, where the contact points of each wheel with the ground shall be able to form a triangle or trapezoid, meanwhile the front wheel is driven by human power only by pedals. If the shape formed by the contact points of the wheels with the ground is a trapezoid, the width of the narrow wheel track shall be less than half of the wide wheel track.

3.2

Track

The distance between two wheels with a common axle, i.e., the outer dimensions of the two wheels in contact with the ground (see Figure 1).

Analysis result correction value = 120 - 120 × 30% = 120 - 36 = 84 (mg/kg).

This figure is considered to meet the requirements of this standard (the maximum limit of migratable lead in Table 1 is 90 mg/kg).

4.1.2 Combustion performance

It is prohibited to use flammable materials in the parts of child tricycles.

When tested according to 5.3 (combustion performance test), it shall meet the relevant requirements of Appendix B (combustion performance) of GB 6675-2003.

4.2 Mechanical strength

No part of the child tricycle shall fracture or have visible cracks under normal use and foreseeable abnormal use, and after testing according to 5.4 (drop test).

4.3 Sharp edges, sharp ends, exposed protrusions, pinch points, small parts

4.3.1 Sharp edges

When tested according to 5.5 (sharp edge test), there shall be no accessible dangerous sharp edges on the child tricycle.

4.3.2 Sharp ends

When tested according to 5.6 (sharp end test), there shall be no accessible dangerous sharp ends on the child tricycle.

4.3.3 Exposed protrusions

There shall be no exposed protrusions in the zones A and B as shown in Figure 3.

When the child tricycle is tested in accordance with 5.9 (forward tilting stability test), it shall not overturn forward.

4.4.2.2 Backward tilting stability

When the child tricycle is tested in accordance with 5.10 (backward tilting stability test), it shall not overturn backward.

4.5 Parts

4.5.1 Connecting fasteners

All bolts, screws, nuts, etc. used for connection or fastening shall not fracture, loosen, have visible cracks or lose their proper function, when tested according to the requirements of this standard.

4.5.2 Protective cap

The protective cap used to protect the exposed protrusions shall be able to withstand a tensile force of 70 N, without falling off.

4.5.3 Operating system

4.5.3.1 Riser insertion depth mark

If the handlebar riser is an adjustable structure, there shall be a permanent mark or ring on the riser to clearly indicate the minimum insertion depth of the riser into the front fork assembly. The mark shall not damage the strength of the riser; the minimum insertion depth from the end of the riser shall not be less than 2.5 times the riser diameter; the stem shall maintain its proper strength within a length of at least one tube diameter below the minimum insertion depth mark.

4.5.3.2 Strength of handlebar riser

The handlebar riser shall be tested according to 5.11 (test of crossbar strength) and shall not fracture.

4.5.3.3 Crossbar

The crossbar shall be symmetrical at both ends with the longitudinal centerline of the child tricycle. When the crossbar is at the highest position and the saddle is at the lowest position, the distance between them shall not exceed 457 mm.

4.5.3.4 Both ends of crossbar

The crossbar shall be equipped with grips or other protective devices at both ends. The grips or other protective devices shall be able to withstand a tensile force of 70 N and

shall not fall off. Crossbars made of plastic are not subject to this clause.

4.5.3.5 Clamping device for handlebar riser

When tested according to 5.12 (test of clamping device for handlebar riser), there shall be no relative displacement between the handlebar riser and the front fork riser. The riser/fork assembly and other parts shall not be damaged.

4.5.4 Saddle

4.5.4.1 Saddle tube insertion depth

If the saddle tube is an adjustable structure, there shall be a permanent mark or ring on the saddle tube to clearly indicate the minimum insertion depth of the saddle tube into the frame (i.e., the maximum height to which the saddle can be adjusted). The mark shall not damage the strength of the saddle tube. The minimum insertion depth from the bottom of the saddle tube shall not be less than 2 times the diameter of the saddle tube, meanwhile the saddle tube shall maintain its strength within a length of at least one tube diameter below the minimum insertion mark.

4.5.4.2 Saddle adjustment clamping device

Under normal use, the saddle clamping head shall be able to firmly clamp the saddle, so that it shall not move in any direction. After the child tricycle is tested according to 5.4 (drop test), when it is tested according to 5.13 (saddle adjustment clamping device test), the saddle clamping device shall not move in any direction as relative to the saddle tube, meanwhile the saddle tube shall not rotate as relative to the frame.

4.5.5 Impact strength

After testing according to 5.14 (impact test), the various parts of the child tricycle shall not be damaged or permanently deformed to cause functional impairment.

4.5.6 Backrest structural firmness

If the child tricycle is equipped with a backrest, the backrest and the joint between the backrest and the body shall not fracture or lose function when tested according to 5.15 (backrest structural firmness test).

4.5.7 Assist-push-rod strength

If a child tricycle is equipped with an assist-push-rod, the assist-push-rod and the connection between the push rod and the vehicle body shall not fracture or lose function, when tested according to 5.16 (assist-push-rod strength test).

4.5.8 Pedals

4.5.8.1 Pedal structure

4.6.2.4 Applicable age and weight

The applicable age range and the expected weight of the product shall be indicated on the product packaging, instructions for use, labels.

4.6.2.5 Safety warning

Child tricycles shall be marked with the following relevant warning instructions or warning signs.

a) A reminder similar to the following shall be marked on the product, packaging and/or instructions for use of each child tricycle: Remind users and guardians to read this instruction for use carefully before use and keep it properly for future reference. Failure to use in accordance with this instruction for use may affect the safety of children.

b) Each child tricycle and instruction for use shall have a warning similar to the following: **"Warning: When a child is riding, the guardian shall not leave."**

c) The riding precautions and safety requirements shall be marked on the product and/or packaging and/or instruction for use of each child tricycle.

4.6.2.6 Safe use method and assembly instructions

a) Detailed use method shall be marked;

b) When necessary, assembly instructions/assembly drawings of parts and complete vehicles shall be provided;

c) The recommended tightening torque of fasteners shall be marked (such as the tightening torque of the handlebar riser clamping device, the tightening torque of the saddle adjustment clamping device, etc.).

4.6.2.7 Maintenance and service

The relevant instructions for regular inspection, maintenance, service, cleaning of the vehicle and related parts shall be indicated.

4.6.2.8 Name and address of manufacturer

The name and address of the product manufacturer registered in accordance with the law shall be indicated.

Imported products shall indicate the origin (country/region) of the product and the name and address of the agent, importer or seller registered in China in accordance with the law.

5 Test methods

5.1 General requirements

5.1.1 Test samples

In principle, all tests shall be conducted on the same sample.

The test sequence shall be for the items that do not damage the sample first, then the items that damage the sample. If the degree of damage to the sample after the test makes it impossible to conduct subsequent test items, the remaining items can be tested on a new sample.

5.1.2 Test instrument accuracy

Unless otherwise specified, the force measurement accuracy in this standard is ±5%; the mass measurement accuracy is ±1%; the angle measurement accuracy is ±1°; the measurement accuracy of all dimensions is ±0.5 mm.

5.1.3 Test environment

Unless otherwise specified, the sample shall be placed in an environment at a temperature of 23 °C ± 5 °C for at least 2 h before testing; the test shall be carried out in an environment at a temperature of 23 °C ± 10 °C.

5.2 Test for specific migratable elements (see 4.1.1)

The test method for specific migratable elements in materials and parts and components used on tricycles, that meet the scope of Chapter C.1 of GB 6675-2003, shall be tested in accordance with the test method specified in Appendix C of GB 6675-2003.

5.3 Combustion performance test (see 4.1.2)

The test method for the combustion performance of materials of child tricycles shall be carried out in accordance with the relevant provisions of Appendix B of GB 6675-2003.

5.4 Drop test (see 4.2, 4.5.4.2)

The load specified in Table 3 is tied to the saddle. If there is a back-treadle, the load shall also be installed on the back-treadle or on the appropriate rearmost part of the saddle according to the requirements of 5.8 (backward tilting stability test). A 4.5 kg load is firmly fixed on each handle cover.

of at least 330 N shall be applied, vertically downward at a point within 25 mm from the front or rear end of the saddle, that can produce a larger torque on the saddle clamp. After removing this force, a force of 110 N shall be applied, horizontally at a point within 25 mm from the front or rear end of the saddle, that can produce a larger torque on the saddle clamp.

5.14 Impact test (see 4.5.5)

Place the child tricycle on a flat horizontal ground in a normal riding state. Let a sand bag with a mass of 20 kg and a bottom diameter of 200 mm fall freely from a height of 200 mm above the center point of the saddle to the saddle surface. Repeat the test three times.

5.15 Backrest structural firmness test (see 4.5.6)

Place the child tricycle on a flat horizontal ground in a normal riding state. Fix the front and rear wheels, to prevent the tricycle from moving during the test. Apply a force of 200 N horizontally backward at the center of the top of the backrest. The force is gradually applied within 5 s and maintained for 10 s before unloading, as a cycle. The interval between each two cycles does not exceed 10 s; 10 cycles are repeated.

5.16 Assist-push-rod strength test (see 4.5.7)

Place the child tricycle on a flat level ground in a normal riding state. Measure the distance from the saddle to the pedals (C' dimension, see Figure 2). Load the center of the saddle according to the load specified in Table 3. Its center of gravity shall be 150 mm above the geometric center of the saddle surface.

Block the rear wheel with a block, to prevent it from moving during the test. In the use position set by the manufacturer, press the assist-push-rod backward without impact to make the front wheel 10 mm off the ground and keep it for 3 min.

Block the front wheel with a block again, to prevent it from moving or turning to the sides of the vehicle body during the test. In the use position set by the manufacturer, pull the assist-push-rod forward without impact, to make the rear wheel 30 mm off the ground and keep it for 3 min.

After repeating the above process 10 times, check the assist-push-rod and its connection with the tricycle body.

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