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**Safeguard Specification of Amusement Rides
(English Translation)**

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Table of Contents

Foreword...	3
1 Scope...	4
2 Normative references...	4
3 Terms and definitions...	5
4 Technical Requirements...	6
5 Test methods...	9
6 Sampling principles...	13

Foreword

Clauses 4.1.1, 4.4.4, 4.4.5, 4.5 of this Standard are mandatory, the rest are recommended.

This Standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This Standard shall be under the jurisdiction of National Standardization Technical Committee of Ropeway and Amusement Rides (SAC/TC 250).

Drafting organization of this Standard. Chinese Special Equipment Inspection and Research Institute.

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Safeguard Specifications of Amusement Rides

1 Scope

This Standard specifies the technical requirements, test methods and sampling principles of safeguard of amusement rides.

This Standard is applicable to safeguard devices such as over-speed limit devices, limit devices, emergency brake devices, anti-kickback device, safety belts, safety pressure bar and cushioning devices of amusement rides.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this Standard.

GB/T 2423.1 Environmental testing for electric and electronic products - Part 1.

Test methods - Test A. Hypothermia

GB/T 2423.2 Environmental testing for electric and electronic products - Part 2.

Test methods - Test B. Mega-thermal

GB/T 2423.3 Environmental testing for electric and electronic products - Part 3.

Test methods - Test Cab. Damp heat test

GB/T 2423.37 Environmental testing for electric and electronic products - Part 37.

Test methods - Test L. Dust Test

GB/T 2423.38 Environmental testing for electric and electronic products - Part

38 Test methods - Test R. Water test method and guidance

GB 4208 Enclosure protection class (IP code)

GB 5226.1 Electrical safety of machinery - Electrical equipment - Part 1. General requirements

3 Terms and definitions

The following terms and definitions are applicable to this document.

3.1 Safeguard

In safety functions, the guards or protection devices that protect people from existing harm or imminent harm.

3.2 Electric devices

The devices that achieve specified safety functions through coordinating mechanical devices, electronics and electrical components.

3.3 Mechanical devices

The devices that achieve specified safety functions through mechanical devices.

3.4 Fault

The status of a characteristic that can not perform a specified function.

3.5 Trigger threshold

The physical quantity to trigger the safeguard.

3.6 Display error

The value difference between measurement value and safeguard's display value.

3.7 Action error

When safeguard triggers, the value difference between its actual physical quantity and trigger threshold.

4.1.1 The safeguard shall be applicable to amusement rides' condition requirements;

when the physical quantities which act on safeguard are reaching to its trigger threshold, the safeguard shall act as required.

4.2.1 The safeguard shall be equipped with automatic alarm function; when it fails, it

shall be able to alert sound or light alarm signal.

4.2.2 The alarm signal shall be triggered by safeguard's action; the sound alarm

signal shall have apparent difference with amusement rides' environmental noise. The alarm sound shall pass the tests specified by 5.14; all sound level shall not be lower than 75dB (A). The light alarm signal shall use red color; it shall be clearly visible within the range of the operating personnel.

4.3 Safety requirements of mechanical devices

The mechanical devices shall meet the requirements of 7.4 ~ 7.7 in GB 8408-2008, in which, the axis, the pin and the important welds that relate directly to personal safety,

shall pass the test specified by 5.2.1 and 6.3.

4.4.1 The electric devices shall meet the requirements specified by GB 5226.1; and

the safeguard, which uses programmable devices, shall also meet the requirements specified by GB/T 20438.2.

4.5.1 For safeguard with display function, in laboratory condition, with respect to the

action values, the display error shall not exceed $\pm 3\%$; when using whole amusement rides to conduct the test, it shall not exceed $\pm 5\%$.

4.5.2 When testing under the laboratory condition, the action error of electric devices

shall not exceed $\pm 3\%$; the action error of mechanical devices shall not exceed $\pm 5\%$.

4.6.1 The safety belt (containing components such as lock) shall meet the requirements in 7.6.7 of GB 8408-2008, and shall pass the test specified by 5.2.3.

4.6.2 The elastic ropes which protect personal safety directly, shall specify the restriction of the breaking force, usage count and failure time; the elastic ropes for bungee shall meet the requirements specified in Part 4 of GB/T 20051-2006 at the same time, and shall be able to pass the tests specified by 5.2.4 and 5.3.3.

4.9 Emergency brake

The emergency brake shall be able to act quickly under emergency situations to prevent amusement rides running to dangerous direction; it shall be adjustable, and shall be able to pass the test specified by 5.4 and 5.5.

4.10 Cushioning devices

The cushioning devices shall be able to act quickly, under emergency situations, to prevent amusement rides running to dangerous direction, and shall be able to pass the test specified by 5.4.