

ICS 97.200.40
CCS Y57



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 18158-2019

Replacing GB/T 18158-2008

Specifications of amusement rides merry-go-round category

转马类游乐设施通用技术条件

Issued on: December 31, 2019

Implemented on: December 31, 2019

**Issued by: State Administration for Market Regulation;
Standardization Administration of China**

Table of Contents

1 Scope	
2 Normative references	
3 Terms and definitions	
4 General	
5 Technical requirements	
5.1 Basic requirements	
5.2 Machinery and structure	
5.3 Ride system	
5.4 Electrical control system	
6 Inspection, testing and test requirements	
6.1 Basic requirements	
6.2 Machinery and structure	
6.3 Ride system	
6.4 Electrical control system	
6.5 Emergency rescue	
6.7 Whole machine	
7 Accompanying documents, marks, packaging, transport and storage	
7.1 Accompanying documents, marks	
7.2 Packaging, transport and storage	

1 Scope

GB/T 18158-2019 is the Chinese national standard on specifications of amusement rides merry-go-round category, in the field of domestic and commercial equipment, entertainment, sport. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 31 December 2019 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 31 December 2019. Classification: ICS 97.200.40, CCS Y57. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This Standard specifies the general, technical requirements, inspection and test requirements, accompanying documents, marks, packaging, transport and storage requirements of merry-go-round amusement ride. This Standard is applicable to merry-go-round amusement ride.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 191, Packaging and storage marks

GB 8408, Large-scale amusement device safety code

GB/T 8923 (all parts), Preparation of steel substrates before application of paints and related products - Visual assessment of surface cleanliness

GB/T 9286-1998, Paints and varnishes - Cross cut test for films

GB/T 13384, General specifications for packing of mechanical and electrical product

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 20306 as well as the followings apply.

3.1 merry-go-round series A merry-go-round amusement ride that the equipment rotating platform rotates around the central vertical column, and the loading system is installed on the rotating platform with a certain stroke up and down.

3.2 rotating cup series A merry-go-round amusement ride that the equipment rotating platform rotates at a fixed inclination around the central vertical column, and the loading system is installed on the rotating platform to spin.

3.5 fail-safe A mode that after the equipment fails, its control system or mechanical mechanism system can maintain a safe state or transfer to a safe state to avoid larger failures or accidents.

3.6 single point of failure A certain part, structural connection point or electrical component on the amusement device, of which its failure shall cause the entire equipment to fail or seriously endanger the safety of passengers.

4 General

4.1 The design, manufacture, installation, transformation, repair, test and inspection, marks, packaging, transport and storage of merry-go-round amusement ride shall comply with

relevant provisions of GB 8408 and relevant requirements of this Standard.

5.1 Basic requirements

5.1.1 The design documents for merry-go-round amusement ride shall at least include design instructions, design calculations, operation and maintenance instructions, risk assessment reports, design verification outlines and a full set of design drawings that meet relevant national standards.

5.1.5 Important shafts (pin shafts) that are difficult to inspect and detect shall be designed for infinite life.

5.2 Machinery and structure

5.2.1 For merry-go-round amusement ride that uses peripheral transmission, the track surface shall be smooth. The gap at the butt joint of the track shall not be greater than 2mm. The height difference shall not exceed 1mm.

5.2.6 For merry-go-round amusement ride that has passenger restraint device, the safety distance is not less than 500mm outside the inner surface of the seat.

5.2.7 For merry-go-round series, the second floor and above platforms shall have separate entrance and exit. The opening direction of the entrance and exit doors shall be the same as the direction in which passengers enter. The entrance and exit doors shall be equipped with locking devices. Passengers cannot open the doors by themselves during operation. They shall have anti- pinching function.

5.2.12 The foundation of mobile amusement rides shall meet the requirements of equipment carrying capacity. The base frame shall meet the equipment's anti-skid requirements.

5.2.13 The important shafts (pin shafts) and important welds of merry-go-round series shall be non-destructively tested. Non-destructive testing methods and requirements are implemented in accordance with GB/T 34370. For examples of common important shafts (pin shafts) and important welds, see Annex A.

5.3 Ride system

5.3.1 The frame of the passenger device shall be made of metal materials. Seats shall be made of rubber, wood or fiberglass materials.

5.3.6 In accordance with acceleration zone requirements in GB 8408, the merry-go-round series with acceleration in area 4 or area 5, shall be equipped with two independent passenger restraint devices or a fail-safe passenger restraint device. The locking device shall be redundant and easy to check.

5.4 Electrical control system

5.4.1 Safety-related electrical control systems shall comply with the fail-safe principle. When the system has faults such as signal acquisition error, control line disconnection, power supply line disconnection or short circuit, the system shall be guided to safety.

5.4.2 The selection of safety components of the control system shall meet the requirements of GB/T 16855.1. The selection of hardware and software in the electrical and electronic programmable devices of the control system shall meet the requirements of GB/T 20438.

6.1 Basic requirements

6.1.1 The manufacturer shall formulate specific inspection, testing and test plans based on relevant standards, design documents, manufacturing processes and equipment characteristics.

6.1.2 After each product is installed and debugged, it shall be inspected, tested according to the formulated plan. All items are qualified before delivery for use.

6.1.3 The wind speed during the test shall not be greater than 8m/s.

6.1.7 After the test, the parts with problems or doubts shall be inspected, and the causes of the problems found shall be identified in time, and measures shall be taken, and detailed records shall be made.

6.1.8 After each inspection, an inspection report shall be prepared. The inspection report shall at least contain the following information.

6.1.9 The manufacturer shall keep product inspection reports and related records, drawings, quality certification documents and technical documents.

6.2 Machinery and structure

6.2.1 For merry-go-round series using peripheral transmission, measure the gap between rail docking positions. The measurement position is not less than

3. Take the maximum value.

6.3 Ride system

6.3.1 The passenger restraint device test shall be carried out under full load conditions. The restraint device shall work. For amusement facilities with two sets of restraint devices, each set of restraint devices shall function independently. Each set of restraint device shall be tested not less than 3 times.

6.4 Electrical control system