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Specifications of Amusement Rides

Battery Car Category

电池车类游艺机通用技术条件

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Specifications of Amusement Rides

Battery Car Category

1 Scope

This Standard specifies the general technical specifications and technical requirements of amusement rides battery car category.

This Standard is applicable to the design, manufacture, installation, modification, maintenance, testing, inspection and usage management of amusement rides battery car category (hereinafter referred to as battery car).

2 Normative References

Through the quotation in this Standard, the provisions in the following documents become provisions of this Standard. In terms of references with a specified date, all the subsequent modifications (excluding the corrected content) or modified versions are not applicable to this Standard. However, all parties that reach an agreement in accordance with this Standard are encouraged to explore the possibility of adopting the latest version of these documents. The latest version of references without a specified date is applicable to this Standard.

GB/T 528 Rubber, Vulcanized or Thermoplastic - Determination of Tensile Stress-strain Properties (GB/T 528-1998, eqv ISO 37:1994)

GB/T 531 Rubber - Determination of Indentation Hardness by Means of Pocket Hardness Meters (GB/T 531-1999, idt ISO 7619:1986)

GB/T 699 Quality Carbon Structural Steels

GB/T 1447 Fiber-reinforced Plastics Composites - Determination of Tensile Properties

GB/T 1449 Fiber-reinforced Plastics Composites - Determination of Flexural Properties

GB/T 1451 Fiber-reinforced Plastics Composites - Determination of Charpy Impact Properties

GB/T 1689 Rubber Vulcanized - Determination of Abrasion Resistance (Akron Machine)

GB/T 2828.1 Sampling Procedures for Inspection by Attributes - Part 1: Sampling Schemes Indexed by Acceptance Quality Limit (AQL) for Lot-by-lot Inspection

6.4 Switch lock, and timer or coin collector of operation shall be set up.

6.5 Storage battery shall be firmly fixated. It shall not be moved because of collision.

6.6 Storage battery shall be thoroughly sealed up; no liquid leakage or liquid penetration is allowed. The technical performance shall comply with the stipulation in GB/T 7403.1.

6.7 At rated loading, the continuous working time of the storage battery shall be not less than 4 h in accordance with the practical working condition.

6.8 Electrical installation shall comply with the stipulation in 6.5 in GB 8408-2008.

6.9 Short circuit protection device shall be set up on each battery car.

7 Yard and Driveway

7.1 Yard ground and driveway pavement shall be flat and firm; there shall be no uneven phenomenon.

7.2 In the periphery area of yard, buffer blockers shall be set up; blockers shall be firm and reliable.

7.3 The width of driveway pavement: when overtaking is allowed, the width shall be not less than 5 m; when overtaking is not allowed, the width shall be not less than 3 m.

7.4 The gradient of driveway pavement shall be not more than 5%. The inner turning radius of driveway shall be not less than 5 m.

7.5 There shall be no obstacle or inserted branch line in the driveway; on both sides of the driveway, buffer blockers shall be set up. Blockers shall be firm and reliable.

7.6 Battery car that operates in exclusive lanes shall set up parking stations and platforms; the platform ground shall be higher than the car body's buffer device.

7.7 Battery car whose speed is more than 5 km/h shall set up exclusive lanes or parking lots; operate in one-way lanes.

7.8 Battery car whose speed is more than 5 km/h shall be prohibited to be used in the same site with battery car exclusively designed for children.

8 Vehicle

8.1 Each car shall have a fixed sign in a conspicuous position. The content of the sign shall at least include product name, product model, product number, date of manufacture and manufacture license number, etc.

10.7 Welding shall comply with the stipulation in 8.6.1, 8.6.2, 8.6.3, 8.6.4, 8.6.6 and 8.6.8 in GB 8408-2008.

10.8 The connection between bolt and hinge pin shall comply with the stipulation in 8.7.1, 8.7.3, 8.7.4, 8.7.5 and 8.7.6 in GB 8408-2008.

10.9 The assembly shall comply with the stipulation in 8.9.1, 8.9.2, 8.9.3, 8.9.4, 8.9.5, 8.9.6 and 8.9.7 in GB 8408-2008.

10.10 The coating shall comply with the stipulation in 8.12.1, 8.12.2 and 8.12.3 in GB 8408-2008.

10.11 The testing shall comply with the stipulation in 8.13.1, 8.13.2, 8.13.3, 8.13.4, 8.13.6, 8.13.7 and 8.13.8 in GB 8408-2008.

11 Test Methods

11.1 General Requirements

11.1.1 Before exiting factory, new products, products that are transferred to another plant for manufacture and products that have significant improvement shall receive relevant tests in accordance with this Standard.

11.1.2 In terms of the release of manufacture license, random quality inspection and safety check, relevant tests shall be conducted in accordance with this Standard. In accordance with different objectives of test, test items can be increased or decreased.

11.2 Test Conditions

11.2.1 In outdoor test, wind speed shall be not more than 8 m/s.

11.2.2 Ambient temperature shall be 0 °C ~ 40 °C; relative humidity shall be not more than 85%.

11.2.3 The deviation between test load and its rated load shall not exceed $\pm 5\%$.

11.2.4 The manufacturing unit shall provide product's test data, record, drawings and technical documents.

11.2.5 During test, conduct technical maintenance in accordance with the instruction of usage.

11.2.6 In terms of battery car with special requirements, test items can be added.

11.3 Test Instruments

11.3.1 In accordance with test requirements, select test instruments and measuring instruments with corresponding accuracy.

operating.

11.7.7 Working time test

Fully charge the storage battery; continuously operate it under the rated load. When the output voltage of the storage battery reduces to 85% of the rated value, its running time shall comply with the stipulation and requirement in this Standard.

11.8 Measurement of Minimum Turning Radius

Respectively turn the steering wheel (or hand shank) of battery car to the left and to the right, till it reaches the terminal point; respectively drive for one lap. In two mutually vertical directions, measure the diameter of the track that is formed by the front wheel or the front outer wheel; take half of the average value. In addition, it shall comply with the stipulation and requirement in this Standard.

11.9 During the full-load test, it shall be normally operating. The mechanical transmission system and the electrical system shall comply with the stipulation and requirement in this Standard.

11.10 Electrical Parameter Measurement

11.10.1 In full-load operation test of battery car, the voltage of the storage battery shall be not less than 95% of the rated voltage.

11.10.2 The current of electric motor shall be not more than the rated current of the electric motor.

11.11 After the test, components that have questions or suspected questions shall be dismantled for inspection. The dismantlement and inspection shall be specifically recorded. Questions that are found shall be timely studied; the causes for these questions shall be determined. The mode of words and photos can be adopted in recording.

11.12 After various tests are completed, compile a test report that includes specific conclusions and complies with relevant stipulations.

12 Inspection Rules

12.1 Battery car shall be randomly sampled from the inspection batch.

12.2 Product sampling shall adopt the primary sampling method requested in GB/T 2828.1; its Acceptable Quality Level (AQL) is 4.0. The general inspection level is Level-II.

12.3 The sampling size and inspection criteria of batch inspection shall comply with the stipulation in Table 2. If the number of unqualified products in the sample is less

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