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

GB 16542-2010

Safety technical requirements for cage

罐笼安全技术要求

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Foreword

Chapter 3 of this standard are recommended, the rest are mandatory. This standard replaces GB 16542-1996 "cage safety technical requirements." This standard compared with GB 16542-1996, the main changes are as follows:

- Clear standards for metal and nonmetal mines, coal mines and coal mine shaft hoisting with cage;
- Deletion of the GB/T 7679.3-2005 "Mining machinery terminology - Part 3. lifting device" in the existing terms;
- Added special requirements for coal mine cage material;
- Deleted the original standard Chapter 5, "requirements";
- Abolition of the "wheel tank ear actual tire wear amount" test, test project complements the safety catch test;
- Deleted the original standard Annex A (informative annex). The standard proposed by China Machinery Industry Federation. The standard by the National Mining Machinery Standardization Technical Committee (SAC/TC88) centralized. This standard was drafted. Steel Group, Wuhan Research Institute of safety and environmental protection. The main drafters of this standard. Li Xiaofei, Zhang opened Valley Qinghong, Wanghong Han, Cen Yuan Gang, Li Yang now. This standard replaces the standards previously issued as

follows:

--- GB 16542-1996. Cage Safety requirements

1 Scope

China's mandatory safety technical requirements for mine cages. The cage is the lift that carries miners down the shaft, and it is unlike any other lift in the world: it hangs on a single rope in an open shaft, travels at speeds that would be reckless in a building, and carries dozens of people standing. The requirements therefore centre on the things that must never fail. The suspension gear and its factor of safety, inspected and replaced on a schedule rather than on condition. The safety catches that grip the guides if the rope parts. The gates, which must be closed and interlocked before movement and which cannot be opened between landings. The overwind protection that stops the cage before it reaches the headgear. And the capacity marking, because the commonest way to overload a cage is to let one more person on.

This standard specifies the relevant terms and definitions, technical safety requirements, test methods and inspection rules cage. This standard applies to metal and nonmetal mines, coal mines and coal mine shaft hoisting cage design, manufacture and testing.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 3323 metal fusion welded joints radiography (

GB/T 3323-2005, EN1435.1997, MOD)

GB/T 3632 Steel with torsional shear bolts connecting deputy

GB/T 7679.3 Mining machinery terminology - Part 3. Lifting Equipment

GB/T 11345 steel welds manual ultrasonic testing and classification of testing results

GB 16423 metal and nonmetal mine safety rules Coal Mine Safety Regulations (National Coal Mine Safety Supervision Bureau released 2006)

3 Terms and Definitions

GB/T 7679.3 and established the following terms and definitions apply to this standard.

3.1 Tank cagemainbody Including the first rope suspension, tail rope suspension, cage

guiding body portion of the device with safety catch.

3.2 Guide means conveyance guide assemblies Wheel tank ear, slide the guide sleeve sliding Cage collectively.

3.3 Wheel tank ear rolling guide shoes Roll cage along the guide member Rigid Pot Channel in normal operation.

3.4 Slide the guide sleeve sliding guide sleeve Cage along the slide guide channel flexitank normal operation.

3.5 Sliding Cage sliding guide shoes Enters the cage serves as a guide in the operation, from the steady level of the tank in and out of the car, roll over or over-discharge tank wedge slip road for your safety Acting guide.

4.1 General Requirements

4.1.1 The cage should meet the requirements of this standard and manufactured in accordance with prescribed procedures approved by the drawings and technical documents.

4.1.2 The cage should be used in line with GB 16423 and "Coal Mine Safety Regulations" the relevant requirements.

4.1.3 All parts of the cage should be inspected, purchased parts, and external cooperation should be qualified documents before assembly.

4.1.4 Each cage should be marked with signs in a prominent location. Signs should include. cage type, size, rated load, weight, Allow manned by number, date of manufacture, manufacturer's name and address.

4.1.5 should be set at the top of the cage removable safety canopy (umbrella) and railings.

4.1.6 cage materials used should meet the relevant national standards and industry standards, and has a supply unit of quality certification documents. Allow to not less than the place of performance standards for materials, material substitution should be with the consent of the main parts of the design units. For coal pot Cage not use magnesium aluminum and other light metal material.

4.1.7 After the material substitution, manufacturers should provide alternative raw materials and the type, size and material substitution due to increased or decreased so that the cage Less weight and measure the actual weight of the cage, credited signs.

4.1.8 suspension and anti-dropping device made by mining product safety certification mark of units manufactured.

4.1.9 When the wellbore pour water over 5m³/h, the top of the tank should be located studio watering arc.

4.1.10 In addition to the side plate, cover plate body, safety canopy and watering Pengwai should monolith production.

4.1.11 All bending, forging and stamping parts, there should be no cracks, fracture and pitting and other defects.

4.1.12 welds should be smooth, clean, and should not be burn, cracks and craters and other defects.

4.1.13 rivet should be firmly intact, and so there should not be skewed, cracks and loose defects.

4.1.14 When the parts are of high strength for its high strength bolts shall comply with GB/T 3632's.

4.2 Requirements tank

4.2.1 tank production and materials used shall meet the following requirements.

--- Framework should be checked by a qualified strength steel or aluminum alloy. When using aluminum production, in addition to meet the strength requirements, by Strut members should meet stability requirements.

--- Tank sidewall thickness should not be less than 2.5mm steel plate or aluminum alloy plate having the same intensity of production, the side wall near the tank Prohibit the use of cage part perforated plate.

--- Bottom of the tank should be paved thickness not less than 4mm of tread plate non-porous or non-porous aluminum plate having the same intensity, and should be able to withstand Normal or emergency landing arising from impact and stress.

--- Connecting beams each beam string inside the tank should be arranged in the wheel pressure to bear mine site, beams are spaced chord beam should be based on the plank Carrying capacity is determined.

4.2.2 tank body dimensions shall comply with the following requirements.

--- Monolayer or multilayer cage uppermost layer of clear height (with the exception of the main lever spring) not less than 1.9m, the other layers of clear height should not be less To 1.8m.

--- When lifting personnel, according to the number of persons allowed to take calculated per occupied floor area of not less than 0.2m².

--- When lifting tub, tub and minimum safety clearance on both sides of the tank. fixed compartments of not less than 50mm, not less than flipping cars 75mm. Tub and minimum safety clearance at both ends of the tank should not be less than 100mm.

4.2.3 The body should be set up on both sides of the tank for tank ride personnel help grip