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

GB/T 26651-2025

Replacing GB/T 26651-2011

Abrasion-resistant steel castings

耐磨钢铸件

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1 Scope

This Document specifies the designation, manufacturing, technical requirements, test methods, inspection rules, marking, certificate, packaging, transportation, and storage requirements for abrasion-resistant steel castings (hereinafter referred to as "castings") other than austenitic manganese steel.

This Document applies to the production, testing, application, procurement, and delivery acceptance of abrasion-resistant steel castings subject to abrasive wear in the mining, metallurgy, building materials, electric power, construction, railway, shipbuilding, chemical, and machinery industries. Abrasion-resistant steel castings for other operating conditions shall be implemented as a reference.

2 Normative References

GB/T 222

GB/T 223.4

GB/T 223.11

GB/T 223.18

GB/T 223.23

GB/T 223.26

GB/T 223.59

GB/T 40805-2021

3 Terms and Definitions

For the purposes of this Document, the terms and definitions given in GB/T 5611 and the following apply.

3.1 Major welding repair

The welding repair for the depth of the groove prepared for the welding repair surface exceeds 25 mm or 40% of the wall thickness, or the welding repair of a single excavation area exceeds 64 cm².

4 Designation

The designation expression method for wear-resistant steel and its castings complies with the provisions of GB/T 5613. Wear-resistant steel and its castings are classified into three categories based on their primary microstructure and into 20 designations based on their alloy element content, as shown in Table 1.

5.1 Casting and heat treatment

5.1.1 Unless otherwise agreed upon between the supplier and the purchaser, the melting method and casting process shall be determined by the supplier.

5.1.2 Martensitic wear-resistant steel castings may be directly quenched and tempered; bainitic

wear-resistant steel castings may be austempered and tempered; and pearlitic wear-resistant steel castings may be normalized and tempered. Unless otherwise agreed upon between the supplier and the purchaser, the heat treatment process shall be determined by the supplier.

5.2 Repair welding

5.2.1 Casting defects may be repaired by welding. A welding procedure qualification shall be conducted prior to repair welding in accordance with GB/T 40800. Defective areas of the casting shall be cleaned before repair welding. Repair welding shall not affect the performance or appearance of the casting. Unless otherwise specified, the repair welding process shall be determined by the supplier.

5.2.2 Whether or not a casting shall undergo further heat treatment after extensive weld repairing shall be agreed upon between the supplier and the purchaser.

5.2.3 Major welding repair must be approved in advance by the purchaser. The location and

extent of any major welding repair should be documented in sketches or photographs; and documentation shall be provided to the purchaser.

5.3 Correction

If deformation occurs, the casting may be corrected. This correction of the casting shall be performed by pressure forming.

6.1.1 The principal chemical composition of each designation shall comply with the provisions

of Table 1.

6.1.2 The allowable deviation of chemical composition shall comply with the provisions of

GB/T 222.

6.2 Hardness and impact toughness

The hardness and impact toughness of wear-resistant steel and its castings at room temperature shall comply with the provisions of Table 2.

6.4.2 The gates, risers, burrs, flash, and sand deposits on the castings must be cleaned. The residual volume after grinding at the gate and riser roots must comply with the provisions of the drawing or order contract.

6.4.3 The surface finishing (mechanical) treatment level, surface non-metallic inclusion level,

and surface porosity level of the castings may be agreed upon by the supplier and purchaser in accordance with the provisions of GB/T 39428.

6.4.4 The surface roughness parameter levels of the castings must comply with the provisions of the drawing or order contract. If not specified in the drawings or order contract, the supplier shall select. The surface roughness parameters for castings weighing less than 1,000 kg per piece shall comply with $R_{\alpha} \leq 25 \mu\text{m}$ specified in GB/T 1031; or comply with the provisions of BM2 level specified in GB/T 39428-2020. While the surface roughness parameters for castings weighing no less than 1,000 kg per piece shall comply with $R_{\alpha} \leq 100 \mu\text{m}$ specified in GB/T 1031; or comply with the provisions of BM3 level specified in GB/T 39428-2020.

6.5 Internal quality

6.5.1 Castings shall be free of cracks and casting defects that affect performance, such as slag inclusions, sand inclusions, pores, shrinkage cavities, and porosity, etc.

6.5.2 Castings may contain defects that do not affect performance. The type, range, quantity, and size of these defects shall be agreed upon by both the supplier and the purchaser.

6.6.1 The geometric shape and dimensional deviations of castings shall comply with the

provisions of the drawings or order contract.

6.6.2 Unless otherwise specified in the drawings or order contract, the dimensional deviations

of castings shall comply with the provisions of DCTG 12 level specified in GB/T 6414-2017; and the geometric deviations shall comply with the provisions of GCTG 7 level specified in GB/T 6414-2017.

6.7 Weight

The weight deviations of castings shall comply with the provisions of the drawings or order contract. Unless otherwise specified in the drawings or order contract, the weight deviation level shall comply with the provisions of MT11 level specified in GB/T 11351-2017.

7.1.1 The sampling and preparation methods for chemical composition determination shall

implemented according to the provisions of GB/T 20066. When multiple ladles of molten steel are used to cast a single casting, each ladle must undergo chemical composition analysis and meet the corresponding technical requirements.

7.1.2 Chemical analysis methods shall be implemented according to the provisions of GB/T

223.4, GB/T 223.11, GB/T 223.18, GB/T 223.23, GB/T 223.26, GB/T 223.59, GB/T 223.60, GB/T 223.64, GB/T 223.69, and GB/T 223.72. Spark discharge atomic emission spectrometry, X-ray fluorescence spectrometry, and other analytical methods are permitted. In the event of a dispute over the analytical results, the results of the chemical analysis method shall prevail.

7.1.3 When residual elements need to be specified, the type, content, and total amount of the residual elements shall be determined by mutual agreement between the supplier and the purchaser.

7.2 Hardness and impact test

7.2.1 Rockwell hardness test shall be conducted in accordance with the provisions of GB/T