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

GB/T 8492-2024

**Heat-resistant cast steels and alloys for general applications
(English Translation)**

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Foreword

This Document was drafted as per the rules specified in GB/T 1.1-2020 Directives for Standardization - Part 1: Rules for the Structure and Drafting of Standardizing Documents.

This Document replaced GB/T 8492-2014 Heat-Resistant Steel and Alloy Castings for General

Applications. Compared with GB/T 8492-2014, the major technical changes of this Document

are as follows besides the structural adjustments and editorial modifications:

- a) Add the definitions of "major defect" and "welding groove for cast defect" (see Clause 3 of this Edition);
- b) Add general delivery conditions (see Clause 4 of this Edition);
- c) Add manufacturing process (see Clause 5 of this Edition);
- d) Change the requirements for welding (see 5.4 of this Edition; 3.9 and Appendix A of the **2014 Edition**);
- e) Change the chemical compositions of some designations (see Table 1 of this Edition; Table 1 of the 2014 Edition);
- f) Change the internal quality requirements (see 6.4 of this Edition; 3.7 of the 2014 Edition);

g) Change the provisions of single casting test blocks (see 7.2.1.2 of this Edition; 4.2.1.2 of the 2014 Edition);

h) Change the marking, quality certificate, packaging, storage and transportation (see Clause

9 of this Edition; Clause 6 of the 2014 Edition);

i) Delete "inspection procedures" and "inspection locations" (see 5.1 and 5.2 of the 2014 Edition).

This Document modified and adopted ISO 11973:2023 Heat-Resistant Cast Steels and Alloys

for General Applications.

Compared with ISO 11973:2023, this Document made more structural adjustments. See Appendix A for a comparison of changes in the structure numbers between the two documents.

Compared with ISO 11973:2023, this Document has many technical differences, which are marked with a vertical single line (|) in the outer margin of the relevant clauses. A list of these

technical differences and their causes is given in Appendix B.

This Document also made the following editorial modifications:

--- Change the designations in ISO 11973:2023; and replace it with the corresponding Heat-Resistant Cast Steels and Alloys for General Applications

1 Scope

This Document specifies the manufacturing, technical requirements, test methods, inspection

rules and marking, quality certificates, packaging, storage and transportation of heat-resistant

steels and alloy castings for general applications.

This Document is applicable to heat-resistant steels and alloy castings for general applications

used under high-temperature working conditions. Other types of heat-resistant steels and

alloy

castings can also be implemented as a reference.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in 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) is applicable to this Document.

GB/T 222 Permissible tolerances for chemical composition of steel products

GB/T 223.3 Methods for chemical analysis of iron, steel and alloy - The diantipyryl methane phosphomolybdate gravimetric method for the determination of phosphorus content

GB/T 223.11 Iron, steel and alloy - Determination of chromium content - Visual titration or potentiometric titration method

GB/T 223.20 Methods for chemical analysis of iron steel and alloy - The Potentiometric titration method for the determination of cobalt content

GB/T 223.21 Methods for chemical analysis of iron steel and alloy - The 5-Cl-PADAB spectrophotometric method for the determination of cobalt content

GB/T 223.22 Methods for chemical analysis of iron, steel and alloy - The nitroso-R-salt spectrophotometric method for the determination of cobalt content

GB/T 223.23 Iron, Steel and Alloy-Determination of Nickel Content - The Dimethylglyoxime Spectrophotometric Method

7.2.1.3 The sampling position of the attached casting test blocks shall be determined by the

purchaser; and the shape and size of the test blocks shall be determined by the supplier. If heat

treatment is required, the attached casting test blocks are allowed to be cut with appropriate

gaps before heat treatment, but a 10 mm to 30 mm gap shall be left to connect to the main body.

The test blocks shall not be separated from the castings before the final performance heat treatment of the castings.

7.2.2 Tensile properties

The tensile test at room temperature shall be carried out in accordance with the provisions of

GB/T 228.1; the tensile test at high temperature shall be carried out in accordance with the provisions of GB/T 228.2.

7.2.3 Brinell hardness

The Brinell hardness test shall be carried out in accordance with the provisions of GB/T 231.1.

7.3.1 Surface roughness test of castings shall be carried out in accordance with the provisions

of GB/T 15056.

7.3.2 Visual inspection of surface quality of sand castings shall be carried out in accordance

with the provisions of GB/T 39428.

7.3.3 Penetrant test of castings shall be carried out in accordance with GB/T 9443.

7.3.4 Magnetic particle test of castings shall be carried out in accordance with the provisions of

GB/T 9444.

7.4.1 Radiographic test of castings shall be carried out in accordance with the provisions of

GB/T 5677.

7.4.2 Ultrasonic test of castings shall be carried out in accordance with the provisions of GB/T

7233.1.