



**NATIONAL STANDARD OF THE
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Austenitic manganese steel castings

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Foreword

This document was drafted in accordance with the rules provided in GB/T 1.1-2020 Directives

for Standardization - Part 1.Rules for the Structure and Drafting of Standardizing Documents.

This document serves as a replacement of GB/T 5680-2010 Austenitic Manganese Steel Castings. In comparison with GB/T 5680-2010, apart from structural adjustments and editorial

modifications, the main technical changes are as follows.

- a) The expression method of five designations is modified (see Table 1; Table 1 of Version 2010);
- b) A designation of chromium-molybdenum austenitic manganese steel casting is added (see Table 1);
- c) The tensile properties and impact properties of some designations of manganese steel specimens are added (see Table 2);
- d) Metallographic structure and the corresponding test methods and inspection rules are added (see 6.4, 7.3 and 8.8);

- e) Room-temperature tensile properties and impact properties, and the corresponding test methods and inspection rules are added (see 6.6, 7.4 and 8.9);
- f) Bending properties and the corresponding test methods and inspection rules are added (see 6.6, 7.5 and 8.10);
- g) Test blocks are added to the inspection rules (see 8.4);
- h) The validity of tests is added to the inspection rules (see 8.5);
- i) Appendix A and Appendix B of Version 2010 are deleted (see Appendix A and Appendix B of Version 2010).

This document modifies and adopts ISO 13521.2015 Austenitic Manganese Steel Castings. In comparison with ISO 13521.2015, this document has many structural adjustments. See Appendix A for a table of comparison of structural No. changes between the two documents.

In comparison with ISO 13521.2015, this document has many technical differences, which are

marked with a vertical single line (?) in the outer margin of the clauses involved. See Appendix

B for a table of these technical differences and the reasons for these differences.

Please be noted that certain content of this document may involve patents. The institution issuing this document does not undertake the responsibility of identifying these patents.

This document was proposed by and shall be under the jurisdiction of National Technical Committee 54 on Foundry of Standardization Administration of China (SAC/TC 54).

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1 Scope

This document specifies the order information, manufacturing process, technical requirements,

test methods, inspection rules, marking, certificate of conformity, packaging, transportation and

storage of austenitic manganese steel castings.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. In terms of references with a specified date, only

versions with a specified date are applicable to this document. In terms of references without a

specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 222 Permissible Tolerances for Chemical Composition of Steel Products

GB/T 223.4 Alloyed Steel - Determination of Manganese Content - Potentiometric or Visual Titration Method

3 Terms and Definitions

The terms and definitions defined in GB/T 5611 are applicable to this document.

4.1 The demand-side should specify the material designation, supply quantity,

name of casting,

delivery state, technical requirements and inspection items of austenitic manganese steel castings (hereinafter referred to as "castings").

4.3 When the demand-side has special requirements or other supplementary requirements, the

demand-side and the supply-side shall jointly determine through negotiation.

5.1.1 Unless the demand-side has special requirements, the smelting method of alloy materials

shall be determined by the supply-side.

5.1.2 Unless the demand-side has special requirements, the casting and forming process and

method shall be determined by the supply-side.

6.1.2 Through the negotiation between the demand-side and the supply-side, the metallographic

structure, tensile properties, impact properties and bending properties of castings, test blocks

and specimens, as well as non-destructive testing of casting quality can be performed at room

temperature.

If the castings are deformed, they can be corrected after the water toughening treatment and at

room temperature, so as to satisfy the dimensional and geometrical tolerance requirements of

the castings.

7 Test Methods

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

The welding procedure qualification before welding repair of the castings shall be carried out

in accordance with the stipulations of GB/T 40800.