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Cast steels and alloys with special physical properties

Aciers et alliages moulés avec caractéristiques physiques particulières

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Foreword

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 11, *Steel castings*.

This third edition cancels and replaces the second edition (ISO 19960:2015), of which it constitutes a minor revision. The changes are as follows:

— the unit of N/mm^2 in Table 2 was revised to MPa;

— GX5Ni36S in Table 4 was corrected to GX5NiS36.

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Cast steels and alloys with special physical properties

1 Scope

This document specifies cast steel and alloy grades with special physical properties. The cast steel and alloy grades covered by this document are used in applications which require low linear thermal expansion, or low ferromagnetic responses, or low galling properties.

NOTE Annex A gives information on ISO grade designation and available UNS numbers which are similar to the ISO grade designations.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4990, *Steel castings — General technical delivery requirements*

ISO 11970, *Specification and qualification of welding procedures for production welding of steel castings*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
galling
damage or breaking of the surface by friction or abrasion

4 General conditions for delivery

Materials furnished according to this document shall conform to the applicable requirements of ISO 4990 including the supplementary requirements that are indicated on the enquiry and purchase order.

5 Chemical composition

The cast steel and alloy grades shall conform to the requirements for chemical composition specified in Table 1.

6 Mechanical properties

Cast steel and alloy grades shall conform to the mechanical property requirements given in Table 2 up to the maximum ruling thickness. Verification of impact properties is not required except when indicated by the customer. Test blocks used to verify the mechanical properties shall not have a thickness exceeding 100 mm. For blocks taken from castings, the test bar location and the mechanical properties required shall be agreed between the manufacturer and purchaser.

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