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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Sintered metal materials — Specifications —

Part 3:

Sintered alloyed and sintered stainless steels used for structural parts

Matériaux métalliques frittés — Spécifications —

Partie 3: Aciers alliés et aciers inoxydables frittés destinés à la fabrication de pièces mécaniques

Reference number
ISO 5755-3:1987 (E)



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 5755-3 was prepared by Technical Committee ISO/TC 119, *Powder metallurgy*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Sintered metal materials — Specifications —

Part 3 :

Sintered alloyed and sintered stainless steels used for structural parts

1 Scope and field of application

This part of ISO 5755 specifies the requirements for the chemical composition and physical and mechanical properties of sintered alloyed and sintered stainless steels used for structural parts. The data on the mechanical properties given are obtained on test pieces.

When selecting powder metallurgical materials, it should be taken into account that the properties depend not only on the chemical composition and density, but also on the production methods, especially in the case of stainless steels. The properties of sintered materials giving satisfactory service in particular applications will not necessarily be the same as those of wrought or cast materials that might otherwise be used. Therefore, liaison with prospective suppliers is more than usually necessary, especially when structural parts of complex shape are required in high-density materials.

Any material in this part of ISO 5755 with less than 90 % relative density may be used, whenever oil-impregnated, for structural parts requiring surfaces to have bearing properties.

This document should be read in conjunction with ISO 5755-1 and ISO 5755-2.

2 References

ISO 2738, *Permeable sintered metal materials — Determination of density, oil content, and open porosity.*

ISO 2740, *Sintered metal materials (excluding hardmetal) — Tensile test pieces.*

ISO 4498, *Sintered metal materials, excluding hardmetals — Determination of apparent hardness*

- *Part 1: Materials of essentially uniform section hardness.*
- *Part 2: Case-hardened ferrous materials, surface enriched by carbon or carbon and nitrogen.*

ISO 5755, *Sintered metal materials — Specifications*

- *Part 1: Materials, for bearings, impregnated with liquid lubricant.*
- *Part 2: Sintered iron and sintered steel containing one or both of the elements carbon and copper, used for structural parts.*

ISO 6892, *Metallic materials — Tensile testing.*

3 Sampling

Sampling shall be carried out in accordance with the relevant International Standards.

4 Test methods

4.1 Chemical analysis

Whenever possible, and always in case of dispute, the methods of chemical analysis shall be those specified in the relevant International Standards. If no International Standard is available, the method may be agreed upon and specified at the time of enquiry and order.

4.2 Density

The density shall be determined in accordance with ISO 2738. Whenever possible, the density shall be determined on the whole part.

In cases where the part is so large as to make it impractical to carry out the test on one piece, it may be necessary to reduce its volume by sub-division. All the pieces resulting from the sub-division shall be subjected to the density determination. The density of the part shall be calculated on the basis of the total mass and total volume, regardless of whether the test is carried out on the whole part or on the separate pieces.

Density requirements of specific sub-divisions of the part shall be agreed upon by the customer and supplier.