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Thermal spraying — Powders — Composition and technical supply conditions

Projection thermique — Poudres — Composition et conditions techniques de livraison

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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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 14232 was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*.

Annex A of this International Standard is for information only.

Introduction

The majority of commercially available thermal spray powders are classified on the basis of their composition and degree of purity. They may be specified and characterized according to the information contained in this International Standard which will hopefully lead to a greater understanding of the variety and the wide choice of thermal spray powders now available to the manufacturer and the user.

Due to the great number of thermal spray powders classified in this International Standard, well-known abbreviations are used. The properties of sprayed coatings are not discussed and may differ greatly from the properties of the original material due to specific thermal spraying conditions, such as gas composition, deposition efficiency, material flow rate and stand-off distance. The many applications of thermally sprayed coatings are not reviewed here because they have been described elsewhere in the technical literature.

Thermal spraying — Powders — Composition and technical supply conditions

1 Scope

This International Standard designates the chemical and physical properties of the powders that are commonly used in the production of thermally sprayed coatings.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 3310-1:—[1], *Test sieves — Requirements and tests — Part 1: Metal wire cloth sieves*.

ISO 3923-2:1981, *Metallic powders — Determination of apparent density — Part 2: Scott volumeter method.*

ISO 3954:1977, *Powders for powder metallurgical purposes — Sampling*.

ISO 4490:1978, *Metallic powders — Determination of flowability by means of a calibrated funnel (Hall flowmeter)*.

3 Properties of powders for thermal spraying — Property determination

3.1 Sampling and sample splitting

Sampling and sample splitting shall be done from a homogeneous mixture that is uniform in grain size. Directions for suitable methods and equipment for accomplishing this shall be in accordance with ISO 3954.

3.2 Chemical composition

The chemical composition shall be determined by any suitable testing method, for example, atomic absorption spectrometry, flame emission spectroscopy, X-ray fluorescent analysis, etc.

3.3 Particle size range

Typical particle size ranges apply to thermal spraying powder units.

When particle size distribution is determined by particle size measurement in accordance with ISO 3310-1, the upper limits may be exceeded by 2 % by mass maximum and the lower limits may be exceeded by 5 % by mass

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1) To be published. (Revision of ISO 3310-1:1990)