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Aluminium oxide used for the production of primary aluminium — Particle size analysis for the range 45 µm to 150 µm — Method using electroformed sieves

Oxyde d'aluminium utilisé pour la production d'aluminium primaire — Analyse granulométrique dans la gamme 45 µm à 150 µm — Méthode par emploi de tamis électroformés

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 226, *Materials for the production of primary aluminium*.

This third edition cancels and replaces the second edition (ISO 2926:2005), which has been technically revised to reflect modern industry practice. The major changes are:

— recommended effective aperture tolerance limits have been added;

— sieves are cleaned by brushing rather than using an ultrasonic bath;

— the mass of sample to be sieved is 50 g;

Introduction

This International Standard is based on AS 2879.6-1995 prepared by Standards Australia.

Aluminium oxide used for the production of primary aluminium — Particle size analysis for the range 45 µm to 150 µm — Method using electroformed sieves

1 Scope

This International Standard specifies a dry sieve method using electroformed sieves for determining the mass distribution of the particle sizes in aluminium oxide used for the production of primary aluminium.

This method is applicable to calcined aluminium oxide containing a maximum of 20 % mass fraction of particles having a mean diameter exceeding 150 µm, and containing a maximum of 15 % mass fraction of particles having a mean diameter less than 45 µm.

This method is not applicable to the use of woven wire sieves.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3310-3, *Test sieves — Technical requirements and testing — Part 3: Test sieves of electroformed sheets*

3 Principle

A test portion of the crude sample is sieved mechanically through electroformed sieves.

Each of the separate fractions is weighed on the sieve, and a cumulative mass of material retained on each sieve aperture size is calculated.

4 Apparatus

4.1 Test sieves, each including a sieving medium (screen) and a frame.

The frames shall be cylindrical, having nominal diameters of 200 mm and heights between 50 mm and 75 mm. A lid and a bottom receiver shall be included. The sieves, lid and bottom receiver shall be capable of being fitted together tightly to form a series of test sieves[1)] .

The screens shall be constructed of smooth electroformed sheet having square openings. The aperture tolerances shall be in accordance with ISO 3310-3.

The sieve apertures shall have nominal sizes of 150 µm, 106 µm, 75 µm, 53 µm and 45 µm. Refer to Annex B for effective aperture determination and tolerance limits.

1) Certified electroformed sieves manufactured by Precision Eforming of Cortland, New York, USA, are examples of suitable products available commercially. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by ISO of these products.