International Standard

ISO 17544

Carbonaceous materials used in the production of aluminium — Cold and tepid ramming pastes — Determination of rammability of unbaked pastes

Produits carbonés utilisés pour la production de l'aluminium — Pâtes de brasquage froides et tièdes — Détermination de l'aptitude au brasquage des pâtes non cuites

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Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Symbols **1**
5 Principle **2**
6 Apparatus **2**
7 Sampling **2**
8 Procedure **3**
9 Expression of results **3**
9.1 Calculation of the density 3
9.2 Interpretation of the curve 3
9.3 Determination of N_2 3
9.3.1 Fitting the data to a Weibull function 3
9.3.2 Calculation of N_2 4
9.4 Determination of $\rho(50)/\rho(100)$ 4
10 Precision **4**
11 Test report **5**

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Foreword

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This document was prepared by Technical Committee ISO/TC *226*, *Materials for the production of primary aluminium*.

This second edition cancels and replaces the first edition (ISO 17544:2004), which has been technically revised.

The main changes are as follows:

— the mass of the falling weight and the ramming rate have been corrected.

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Introduction

The bottom of aluminium electrolysis cells is lined with cathode blocks that are sealed with a ramming paste to avoid any leakage. When lining a cell, the green paste is directly rammed between the cathode blocks and baked in situ during the start-up of the pot by the process heat. The quality of the paste is of primary importance as to ensure long operation without disturbance.

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Carbonaceous materials used in the production of aluminium — Cold and tepid ramming pastes — Determination of rammability of unbaked pastes

1 Scope

This document describes a method of producing a compaction curve indicating the rammability of carbonaceous ramming pastes used to line cathodes utilized in the production of aluminium.

Determination of the rammability enables a ramming paste with the optimum density to be selected.

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 5725-2, *Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

ISO 14422, *Carbonaceous materials used in the production of aluminium — Cold-ramming pastes — Methods of sampling*

3 Terms and definitions

No terms and definitions are listed in this document.

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/

4 Symbols

h	measured height of test specimen, in cm
m	mass of paste placed in cylinder, in g
N	number of impacts
N_2	minimum value of second derivative of $\rho(N)$
r	inner radius of rammer cylinder, in cm
α	scaling or normalization parameter describing the steepness of the compaction curve (which decreases as α increases)
γ	location parameter which shifts the origin of the distribution
ρ_{max}	maximum value of density, in g·cm^{-3}

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