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**Carbonaceous materials used in the  
production of aluminium — Sampling  
plans and sampling from individual  
units —**

**Part 3:  
Sidewall blocks**

*Produits carbonés utilisés pour la production de l'aluminium — Plans  
d'échantillonnage et échantillonnage pour unités individuelles —*

*Partie 3: Blocs latéraux*



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## Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 8007-3 was prepared by Technical Committee ISO/TC 47, *Chemistry*, Subcommittee SC 7, *Aluminium oxide, cryolite, aluminium fluoride, sodium fluoride, carbonaceous products for the aluminium industry*.

ISO 8007 consists of the following parts, under the general title *Carbonaceous materials used in the production of aluminium — Sampling plans and sampling from individual units*:

- *Part 1: Cathode blocks*
- *Part 2: Prebaked anodes*
- *Part 3: Sidewall blocks*

## Introduction

Details of the sampling of shaped refractory products in general are given in ISO 5022, which details the statistical basis for sampling plans for acceptance testing of a consignment or lot.

Sidewall blocks used in the production of aluminium have specific requirements for sampling and, while the statistical basis for sampling given in ISO 5022 can be applied, further or modified requirements apply. ISO 3951 describes sampling plans for inspection by acceptance quality limit (AQL). ISO 2859-0 and ISO 2859-1 describe sampling plans for inspection by attributes.

# Carbonaceous materials used in the production of aluminium — Sampling plans and sampling from individual units —

## Part 3: Sidewall blocks

### 1 Scope

This part of ISO 8007 describes procedures for sampling consignments of blocks and taking test samples from single sidewall blocks used in the production of aluminium.

### 2 Normative references

The following referenced documents are indispensable for the application 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 2859-0, *Sampling procedures for inspection by attributes — Part 0: Introduction to the ISO 2859 attribute sampling system*

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 3951, *Sampling procedures and charts for inspection by variables for percent nonconforming*

ISO 5022, *Shaped refractory products — Sampling and acceptance testing*

ISO 6206, *Chemical products for industrial use — Sampling — Vocabulary*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 2859-0, ISO 2859-1, ISO 3951, ISO 5022 and ISO 6206 apply.

### 4 Apparatus

Suitable cutting equipment, having cutting edges preferably coated with diamond or other extremely hard material.

## 5 Sampling from single sidewall blocks

### 5.1 General

Single sidewall blocks shall be sampled in accordance with the provisions of ISO 5022 or ISO 2859-1, with the additional requirements given in 5.2 and 5.3 and Clauses 6 to 8.

Sidewall blocks are usually unsuitable for their original purpose after samples have been taken. The sampling plan shall recognize that the block may have to be declared scrap if it cannot be reworked for a different purpose.

### 5.2 Sampling

The sampling positions shall take into consideration the size and shape of different sidewall blocks.

It is strongly recommended that an agreement be made between the supplier and the user concerning sampling locations.

Samples shall, wherever practicable, be taken parallel and perpendicular to the major axis of the block. Manufacturers of sidewall blocks, formed by extrusion or vibration, have knowledge of the predominant grain direction for which it is recommended to take samples in parallel and perpendicular directions.

Manufacturers are recommended to inform users of the predominant grain direction where appropriate. Users are recommended to request this information from manufacturers or suppliers.

If the predominant grain direction is not known then, samples shall be taken in orthogonal  $x$ ,  $y$  and  $z$  directions.

A sketch of the positions and direction of sampling shall be included in the sampling report [see 8 e)].

## 6 Dimensions of the sample(s)

The dimensions of the sample(s) shall be chosen according to the tests to be carried out. The minimum dimension (usually the diameter) shall be three times the maximum particle size of the dry aggregate, where this is known.

Reference shall be made to the International Standards relating to the test(s) to be carried out to ensure that the sample(s) taken from the sidewall block are of suitable dimensions.

The samples taken from the sidewall block may already be of the correct dimensions. If not, then the dimensions of the core-drilled sample(s) shall also allow for the provision of parallel sides when the finished test piece is prepared. The cross-section of the finished test sample(s) taken from the sidewall block shall be circular. The dimensions of the test sample(s) shall be given in the sampling report [see 8 f)].

The specific dimensions of the piece(s) to be tested are normally given in the appropriate International Standard. Where the International Standard does not specify the dimensions of the test piece(s), a diameter of 30 mm or 50 mm is recommended for practical purposes. The length of the test piece should be at least 1,5 times the diameter.

## 7 Procedure

The sample is to be taken by core drilling or by sawing from suitable locations and in directions parallel and perpendicular to the predominant grain direction, if known.

Sampling in the  $x$ ,  $y$  and  $z$  directions is strongly recommended.

## 8 Sampling report

The sampling report shall include the following:

- a) names of producer and customer;
- b) number and reference marking of the batch(es);
- c) reference to this part of ISO 8007, i.e. ISO 8007-3;
- d) date and place of sampling;
- e) sketch showing the location of the sampling points and the directions of sampling;
- f) dimensions of the test sample(s);
- g) name(s) and job title(s) of the person(s) carrying out the sampling;
- h) complete details of the sampling plan operated.

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