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**Carbonaceous materials used in the  
production of aluminium — Baked anodes  
and cathode blocks —**

Part 1:  
**Determination of apparent density using  
a dimensions method**

*Produits carbonés utilisés pour la production de l'aluminium — Anodes  
cuites et blocs cathodiques —*

*Partie 1: Détermination de la masse volumique apparente par une méthode  
de mesurage dimensionnel*



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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 part of ISO 12985 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 12985-1 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 12985 consists of the following parts, under the general title *Carbonaceous materials used in the production of aluminium — Baked anodes and cathode blocks*:

- *Part 1: Determination of apparent density using a dimensions method*
- *Part 2: Determination of apparent density and of open porosity using a hydrostatic method*

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# Carbonaceous materials used in the production of aluminium — Baked anodes and cathode blocks —

Part 1:

## Determination of apparent density using a dimensions method

### 1 Scope

This part of ISO 12985 specifies a dimensions method for the determination of the apparent density of carbonaceous products used in the production of aluminium.

This method is applicable to samples with a simple or well-defined geometry (cylindrical, rectangular parallelepipedal, cubic, etc.) and having a smooth surface profile. The accuracy of measurement is strongly influenced by the equipment used for sampling, i.e. the drilling and sawing machines.

### 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 12985. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 12985 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 8007-1, *Carbonaceous materials used in the production of aluminium — Sampling plans and sampling from individual units — Part 1: Cathode blocks.*

ISO 8007-2, *Carbonaceous materials used in the production of aluminium — Sampling plans and sampling from individual units — Part 2: Prebaked anodes.*

### 3 Principle

The geometry of the test specimen and its mass are measured and the apparent density is calculated.

### 4 Apparatus

**4.1 Balance**, capable of weighing to the nearest 0,1 g for test specimens with a mass of 100 g or more and capable of weighing to the nearest 0,01 g for test specimens of a mass of less than 100 g.

**4.2 Callipers**, for measuring the sample dimensions, capable of measuring to the nearest 0,05 mm for dimensions of 30 mm or more and capable of measuring to the nearest 0,01 mm for dimensions of less than 30 mm.