AS 2806.6—2003
ISO 10226:1991

Australian Standard™

Aluminium ores—Sampling

Part 6: Methods for checking the bias of sampling

Standards Australia

This Australian Standard was prepared by Committee MN-003, Aluminium Ores. It was approved on behalf of the Council of Standards Australia on 6 May 2003 and published on 26 June 2003.

The following are represented on Committee MN-003:

Australian Aluminium Council

Royal Australian Chemical Institute

Additional interests participating in the preparation of this Standard:

Aluminium ore exporters

Aluminium ores industry laboratories

Aluminium ore mining companies

Aluminium ore refineries

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Part 6: Methods for checking the bias of sampling

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PREFACE

This Standard was prepared by the Standards Australia Committee MN-003, Aluminium Ores, to supersede AS 2806.6—1994, *Aluminium ores—Sampling*, Part 6: *Methods for checking the bias of sampling*.

The objective of this Standard is to provide the aluminium ores industries with experimental methods for checking the bias of sampling of aluminium ores, when sampling is undertaken in accordance with the procedures in AS 2806.1. This Standard can also be used for checking the bias of sample preparation, when the sample preparation is undertaken in accordance with the specifications in AS 2806.3.

This Standard is identical with and has been reproduced from ISO 10226:1991, *Aluminium ores—Experimental methods for checking the bias of sampling.*

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text 'this International Standard' should read 'this Australian Standard'.

(c) A full point should be substituted for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to equivalent Australian Standards, as follows:

Reference to International Standard		*Australian Standard*	
ISO		AS	
6140	Aluminium ores—Preparation of samples	2806 Part 3:	Aluminium ores—Sampling Preparation of samples
8685	Aluminium ores—Sampling procedures	2806.1	Part 1: Sampling procedures

Readers of this Standard are also advised to refer to AS 4433.4, *Guide to the sampling of particulate materials*, Part 4: *Checking for bias*.

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AUSTRALIAN STANDARD

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Methods for checking the bias of sampling

1 Scope

This International Standard specifies experimental methods for checking the bias of sampling of aluminium ores, when the sampling is carried out in accordance with the procedures specified in ISO 8685.

NOTE 1 These methods may also be applied for checking the bias of sample preparation, when the sample preparation is carried out in accordance with the specifications of ISO 6140.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 6140:—[1], *Aluminium ores — Preparation of samples.*

ISO 8685:—[1], *Aluminium ores — Sampling procedures.*

3 General

3.1 In the experimental methods given in this International Standard, the results obtained from the method to be checked (referred to as "Method B") are compared with the results of a reference method (referred to as "Method A") which is considered to produce practically unbiased results from technical and empirical viewpoints.

In the event that there is no significant difference in a statistical sense between the results obtained from Method B and those obtained by Method A, Method B may be adopted as a routine method.

NOTE 2 In this International Standard, bias is assessed by application of the *t*-test (one-sided) at the 5 % significance level, by determining whether the difference between the results of Method A and of Method B are due to random chance variations or to whether the results are statistically different.

The number of paired sets of measurements shall not be less than 20. The number of data sets required depends on the standard deviation of the differences based on 20 data sets and the value of the bias, δ, to be detected as specified in clause 5.

Any chemical or physical quality may be used. The most commonly used characteristics are alumina, silica and moisture content. Bias may not always be determined for just one parameter, therefore several parameters, preferably those which would subsequently be of interest, should be determined to ensure that there is no bias. Characteristics to be tested need to be determined before the experiment begins. When increments for Method A and Method B can be taken from closely adjacent portions of the ore, it is recommended that sample preparation and testing be carried out on each increment individually. A comparison should never be made using combined data for increments, subsamples or gross samples.

The method for analysis of experimental data described in clause 5 may also be applied for checking a possible significant difference in the result obtained from the samples of one lot collected at different places, for example, a loading point and a discharging point.

1) To be published.