Australian Standard®

Heavy mineral sand concentrates—Sampling

Part 2: Sampling from stationary situations

This Australian Standard was prepared by Committee MN/4, Heavy Mineral Sands. It was approved on behalf of the Council of Standards Australia on 3 May 1993 and published on 26 July 1993.

The following interests are represented on Committee MN/4:

Chamber of Mines of Western Australia

Chemistry Centre, W.A.

CSIRO

Additional interests participating in preparation of Standard:

CSIRO, Division of Mathematics and Statistics

CSIRO, Division of Minerals and Process Engineering

Mineral sands producer organizations

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PREFACE

This Standard was prepared by the Standards Australia Committee on Heavy Mineral Sands, under the direction of the Multitechnics Standards Policy Board, as Part 2 of a series of Standards for the sampling of heavy mineral sand concentrates. The other parts of this series are as follows:

Part 1: Sampling from moving streams

Part 3: Preparation of samples

Part 4: Determination of precision and bias

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STANDARDS AUSTRALIA

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Part 2: Sampling from stationary situations

1 SCOPE This Standard sets out methods for the sampling of heavy mineral sands from stationary situations to provide samples for chemical analysis, physical testing and determination of moisture. Stopped-belt sampling is specifically included.

The methods of sampling outlined in this Standard should be considered only where the preferred method of sampling from a moving stream is not possible.

The preparation of samples taken by methods outlined in this Standard is covered in AS 2884.3.

Clauses 4 to 8 provide general sampling theory that may not be relevant to sampling from stationary situations.

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS
1152 Test sieves

2884 Heavy mineral sand concentrates—Sampling
2884.3 Part 3: Preparation of samples

3 DEFINITIONS For the purpose of this Standard, the definitions below apply.

3.1 Bias—the tendency to obtain a value that is either persistently higher or persistently lower than the reference value. In practice, it is the difference between the reference value and the average result obtained from a large number of determinations using a biased method.

3.2 Coefficient of variation—the ratio of the standard deviation to the mean value, expressed as a percentage.

3.3 Constant-mass division—the method of sample division in which the retained portion is of uniform mass.

3.4 Divided increment—the quantity of concentrate obtained by division of the increment to decrease its mass.

3.5 Division—the process of decreasing the sample mass (without modification of the particle size of the constituent pieces) whereby one or more representative parts of the sample are retained.

3.6 Duplicate sampling—a particular case of replicate sampling (involving only two replicate samples), for the purpose of estimating the average precision of sampling from a number of lots or sampling units.

3.7 Fixed-rate division—the method of sample division in which the retained portion from individual increments is a constant proportion of the original mass.