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# Australian Standard<sup>®</sup> 2646.3—1985

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## SAMPLING OF SOLID MINERAL FUELS Part 3—COKE—SAMPLING FROM MOVING STREAMS



AS 4264  
Coal and coke—Sampling

AS 4264.2—1996  
Coke—Sampling procedures  
(In Professional Package 32A)

67pp J

Sets out methods for the sampling of coke from moving streams and stationary situations, including stopped-belt sampling, for routine and special purposes, to provide samples for general analysis and for the determination of total moisture. Methods for the preparation of samples are also included.

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AS 2646.5—1985 and AS 2646.7—  
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Australian Coal Association  
Australian Coal Industry Research Laboratories Ltd  
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Coal Preparation Societies of New South Wales and Queensland  
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*This standard was issued in draft form for comment as DR 84267.*

**AUSTRALIAN STANDARD**

**SAMPLING OF SOLID MINERAL FUELS**

**Part 3**

**COKE—SAMPLING FROM  
MOVING STREAMS**

**AS 2646.3—1985**

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## PREFACE

This standard was prepared by the Association's Committee on Coal and Coke under the direction of the Minerals Standards Board. It supersedes (in part) AS 1898—1976, Methods for the Sampling of Coke.

This standard is one of a series of standards dealing with the sampling of solid mineral fuels. The other standards in the series are as follows:

- Part 1—Guide to the Use of Parts 2 to 8
- Part 2—Hard Coal—Sampling from Moving Streams
- Part 4—Hard Coal—Sampling from Stationary Situations
- Part 5—Coke—Sampling from Stationary Situations
- Part 6—Hard Coal—Preparation of Samples
- Part 7—Coke—Preparation of Samples
- Part 8—Determination of Precision and Bias

The standard has been produced in association with the preparation of standards on hard coal and in recognition of the fact that a large proportion of sampling is carried out from moving streams of coke and that there is insufficient detail provided in AS 1898—1976.

The principles in this standard are based on sampling coke from the falling stream of a conveyor belt. Further investigative work is being carried out on other forms of sampling from moving streams, particularly with respect to cross-belt sampling.

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## CONTENTS

|   | <i>Page</i> |
|---|-------------|
| <b>METHOD</b>   |             |
| 1 Scope ....  | 3           |
| 2 Referenced Documents ....                                     | 3           |
| 3 Definitions ....  | 3           |
| 4 Establishing a Sampling Scheme ....                           | 4           |
| 5 Mass of Increment ....  | 6           |
| 6 Number of Primary Increments and Sampling Units ....          | 6           |
| 7 Manual Sampling ....  | 9           |
| 8 Mechanical Sampling ....                                      | 10          |
| 9 Mass-basis Sampling ....                                      | 12          |
| 10 Time-basis Sampling ....                                     | 13          |
| 11 Random Stratified Sampling—Fixed Mass or Time Intervals .... | 14          |
| <b>APPENDICES</b>   |             |
| A Manual Sampling Implements ....                               | 15          |
| B Mechanical Sampling Devices ....                              | 16          |

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## STANDARDS ASSOCIATION OF AUSTRALIA

## Australian Standard

for

## SAMPLING OF SOLID MINERAL FUELS

## PART 3—COKE—SAMPLING FROM MOVING STREAMS

**1 SCOPE.** This standard sets out methods for the sampling of coke from moving streams for both routine and special purposes to provide samples for general analysis and for the determination of total moisture.

Provisions of this standard do not include stopped-belt sampling. AS 2646.5 deals with the situation in which the conveyor belt is stopped for the purpose of sampling. Although this standard is intended to cover all coke sampling from moving streams, the procedures recommended may not be applicable in cases of extreme segregation of material as found in coke which is very wet with moisture run-off or in coke which is very dry because of generation of dust. In such cases it may be necessary to revert to stopped-belt sampling.

Procedures for preparation of samples are given in AS 2646.7.

**2 REFERENCED DOCUMENTS.** The following standards are referred to in this standard:

AS 1152 Test Sieves

AS 2646 Sampling of Solid Mineral Fuels,  
Part 5—Coke—Sampling from Stationary Situations  
Part 7—Coke—Preparation of Samples  
Part 8—Determination of Precision and Bias.

**3 DEFINITIONS.** For the purpose of this standard, the following definitions apply:

**3.1 Coefficient of variation ( $v$ )**—in mass-basis sampling, the percentage of the standard deviation ( $s$ ) relative to the mean value ( $\bar{x}$ ) of the mass of increments, as shown below:

$$v (\%) = \frac{s}{\bar{x}} \times 100$$

**3.2 Constant mass division**—the method of sample division in which the retained portion from individual increments is of uniform mass.

**3.3 Divided increment**—the quantity of coke obtained by division of the increment in order to decrease its mass.

**3.4 Division**—the process of decreasing the sample mass (without modification of the particle size of the constituent pieces) where a representative part of the sample is retained while the remainder may be rejected.

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

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

**3.7 Gross sample**—a sample formed when all the increments collected from a lot are combined for reduction to a laboratory sample.

**3.8 Increment**—the quantity taken by—

- (a) a single pass of the sampling device in the case of mechanical sampling;
- (b) either a single pass or the combined sum of multiple passes of the sampling implement in the case of manual sampling.

**3.9 Lot**—a quantity of coke delivered at one time. The lot may be composed of one or more sampling units.

**3.10 Manual sampling**—the operation of sampling when the increments forming subsamples and gross samples are taken by human effort using a hand-held implement.

**3.11 Mass-basis sampling**—the method of taking increments at uniform mass intervals throughout the sampling unit or lot.

**3.12 Mechanical sampling**—the operation of sampling when the increments forming subsamples and gross samples are taken by a sampling machine.

**3.13 Nominal top size**—the size of aperture of the finest sieve (complying with AS 1152) through which a minimum of 95 percent of the mass of the material passes.

**3.14 Random stratified sampling**—the taking of increments at irregular intervals within constant intervals of time, mass or space.

**3.15 Replicate sampling**—the taking of increments from the lot or sampling unit at equal intervals of time, mass or space. The increments are placed in rotation into different containers to give several replicate samples of approximately equal mass. By the procedure of replicate sampling it is possible to estimate the precision of sampling.

**3.16 Sampling unit**—the discrete units (trains, sections of belt, daily production) which comprise the lot.

**3.17 Standard deviation**—the positive square root of the variance.

**3.18 Strata**—approximately equal parts of a lot or sampling unit based on intervals of time, mass or space.