AS 2617—1996

Australian Standard®

Sampling from coal seams

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The following interests are represented on Committee MN/1:

Australasian Institute of Mining and Metallurgy

Australian Institute of Energy

Australian Mining Industry Council

Australian Chamber of Commerce and Industry

Australian Coal Association

Australian Coal Industry Research Laboratories

Australian Coal Preparation Society

Bureau of Steel Manufacturers of Australia

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Department of Minerals and Energy, Queensland

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Institution of Engineers, Australia

Queensland Coal Board

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Standing Committee on Coalfield Geology of New South Wales

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PREFACE

This Standard was prepared by the Standards Australia Committee on Coal and Coke, as a revision of AS 2617—1983, *Guide for the taking of samples from hard coal seams in situ*.

The objective of this Standard is to provide uniformity and best practices in procedures used for taking coal samples from seams in the ground.

Major changes from the previous edition are as follows:

(a) The inclusion of sampling from small-diameter and large-diameter drill holes.

(b) The inclusion of sampling from exposed seam faces.

(c) The inclusion of trial open-cut slots.

(d) Deletion of the appendix titled 'Determination of seam thickness'.

The term 'informative' has been used in this Standard to define the application of the Appendix to which it applies. An informative appendix is for guidance and information only.

CONTENTS

Originated as AS CK5—1948.
Previous edition AS 2617—1983.
Second edition 1996.

FOREWORD

A coal seam may consist of a single stratum of one lithotype of relatively uniform maceral constitution, or it may consist of a number of layers of different coal lithotypes varying in thickness and lateral extent. The seam may also contain discrete layers of inorganic sediments, or carbonaceous shales of varying thickness. Veins of concordant or discordant secondary mineral matter, or intrusive volcanic rock may also be present. The lithotype layers may vary considerably in hardness, texture and structure according to the nature of the coal and inorganic sediments. The inorganic layers may also thicken laterally, splitting the seam into two or more separate entities. Thus, it is not always possible to obtain samples of a full seam or seam section at one sampling point. Where significant variation in seam thickness, lithotype profile and structure occurs and a representative sample is required, several samples may have to be taken.

Methods of sampling for the assessment of physical, chemical, petrographic or utilization properties are described for the following:

(a) Sampling from small and large diameter drill cores.

(b) Sampling from exposed seam faces.

(c) Sampling from trial open-cut excavations.

(d) Sampling from underground workings.

In a seam of variable quality, it will be necessary to take a number of samples to improve the representativeness of sampling.

In operating mines, the manager should be consulted and approval should be obtained before sampling sites are selected and sampling proceeds. In the case of exploration tenements, it is often necessary to obtain permission from the State Government department that issued the tenement before a bulk sample can be extracted. In most cases, the tenement document defines what constitutes a bulk sample, usually in terms of total mass of coal involved, whereas in other cases it is left to the discretion of the department. In all sampling situations, experienced and qualified personnel will be required for supervision and to ensure that accurate records are made of location, thickness and lithotype descriptions and that all safety precautions have been addressed. It is strongly recommended that a risk analysis of the sampling exercise be undertaken by an experienced safety officer before work begins.

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Sampling from coal seams

1 SCOPE This Standard is a guide to the methods recommended for taking samples from higher rank coal seams in the ground, whether from exploration tenements, or from operating underground or open-cut mines. The following methods are described:

(a) Bore core sampling.

(b) Drill cuttings sampling.

(c) Open-cut slot sampling.

(d) Pillar sampling.

(e) Channel sampling.

(f) Strip sampling.

This Standard does not apply to sampling from production moving streams or any other source of coal not in place.

Recommendations are made for selection and preparation of the sampling site, and methods are described for taking both small and bulk samples, and for preparing the samples for transport.

NOTE: Appendix A includes an example of a sample record form that may be used to record sampling and other relevant data, and AS 4264.1 describes how to determine the mass of sample required for representativeness at various nominal top sizes.

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

AS
2418 Coal and coke—Glossary of terms

2519 Guide to the technical evaluation of higher rank coal deposits

2916 Symbols for graphical representation of coal seams and associated strata

4264 Coal and coke—sampling
4264.1 Part 1: Higher rank coal—sampling procedures
4264.3 Part 3: Lower rank coal—Sampling procedures

3 DEFINITIONS For the purpose of this Standard, the definitions given in AS 2418 and those below apply.

3.1 Bulk sample—a sample that is larger than the normal samples taken in a particular operation. There is usually a specific reason for taking a bulk sample which is related to the amount of material required for a particular purpose. It is not possible to define the minimum size of a bulk sample, but in some cases government departments formulate guidelines that apply to exploration tenements.

3.2 Channel sample—a sample of the coal and associated inorganic rock taken by removing a channel of even cross-section from the seam. Where the full section of the seam is not accessible or not required, this term may refer to a sample taken either from a specifically defined portion of the seam, or from the floor to roof as mined or exposed.