AS 2267—1997

Australian Standard®

Guide to the conduct of pilot coke oven tests

This Australian Standard was prepared by Committee MN/1, Coal and Coke. It was approved on behalf of the Council of Standards Australia on 28 February 1997 and published on 5 June 1997.

The following interests are represented on Committee MN/1:

ACIRL

Australasian Institute of Mining and Metallurgy

Australian Institute of Energy

Australian Coal Association

Australian Coal Preparation Society

Bureau of Steel Manufacturers of Australia

Coalfield Geology Council of New South Wales

CSIRO, Division of Coal and Energy Technology

Department of Mines and Energy, Queensland

Electricity Supply Association of Australia

Institution of Engineers, Australia

Minerals Council of Australia

Queensland Coal Board

Royal Australian Chemical Institute

University of Newcastle

University of New South Wales

University of Queensland

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PREFACE

This Standard was prepared by the Standards Australia Committee on Coal and Coke as a revision of the 1979 edition of AS 2267.

Major changes to the previous edition are as follows:

(a) Inclusion of means of minimizing oxidation during size reduction.

(b) Expansion of the Clause relating to box charging and pushing.

(c) Inclusion of a diagram of a movable-wall coke oven.

(d) Inclusion of a means for measuring maximum internal pressure.

(e) Addition of a recommended soaking period.

The objective of this Standard is to provide those responsible for determining the coke-making properties of coal and coal blends with a standardized yet relatively inexpensive and convenient method.

The objective of the revision is to align the Standard with current practice.

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FOREWORD

Pilot coke ovens provide a convenient and relatively inexpensive method for determination of the coke-making properties of coals and coal blends. Because they require comparatively small quantities of coal for testing, they are particularly useful for studying exploration samples, washery production samples, export grade coal and blends of different coals. They also find use for coke quality control and for the investigations of operational parameters at commercial by-product coke oven batteries.

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Guide to the conduct of pilot coke oven tests

1 SCOPE This Standard recommends the method of preparing the charge and producing coke in pilot-scale coke ovens having widths approximating a commercial by-product battery oven (e.g. 350 mm to 500 mm), and the methods of preparing such cokes for testing.

2 REFERENCED AND RELATED DOCUMENTS

2.1 Referenced documents The following documents are referred to in this Standard:

AS

1038 Coal and coke—Analysis and testing
1038.1 Part 1: Higher rank coal—Total moisture
1038.13 Part 13: Tests specific to coke
1038.18 Part 18: Coke—Size analysis

3899 Higher rank coal and coke—Bulk density

4264 Coal and coke—Sampling
4264.1 Part 1: Higher rank coal—Sampling procedures
4264.2 Part 2: Coke—Sampling procedures

2.2 Related documents Attention is drawn to the following related documents:

1 BURKE, L.O. 'Carbonisation tests using pilot scale coke ovens'. *Mine and Quarry Mech.* 1975.

2 CALCOTT, T.G. 'Coking with a seven cubic foot capacity oven'. *Aust. I.M.M. Proc*. No 233, March 1970.

3 DOWSON, J.A. and GADSDEN, W.R. 'The drying and pre-heating of coal for coke ovens'. *Blast Furnace and Steel Plant*, May 1966, 385-390.

4 GREGORY, J.A. and SKILTON, H.G. 'Coking properties from preheating compared with partial briquetting using Australian coals'. *BHP Newcastle Works Research Department Open Report* No. NWR/CCR/3/75, December 1975.

5 GREGORY, J.A. 'Metallurgical coal from the iron and steel industry'. *South-East Asian Iron and Steel Institute Quarterly Journal*, April 1975, 23-32.

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

3.1 Coking rate—either—

(a) the width of oven divided by the time between charging and pushing oven, expressed in millimetres per hour (mm/h); or

(b) the width of oven divided by the time between charging and the attainment of a specific centre of charge temperature (e.g. 900°C, 1000°C).

NOTE: It is a requirement of Clause 11.3 that the method used for expressing the coking rate be reported.