Australian Standard™

Methods for the analysis and testing of lower rank coal and its chars

Part 3: Lower rank coal—Determination of the moisture holding capacity

Standards Australia

This Australian Standard was prepared by Committee MN-001, Coal and Coke. It was approved on behalf of the Council of Standards Australia on 16 September 2002 and published on 1 October 2002.

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Australian Coal Association

Australian Coal Preparation Society

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Coal field Geology Council of N.S.W.

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Methods for the analysis and testing of lower rank coal and its chars

Part 3: Lower rank coal—Determination of the moisture holding capacity

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PREFACE

This Standard was prepared by the Standards Australia Committee MN-001, Coal and Coke to supersede AS 2434.3—1984, *Methods for the analysis and testing of brown coal and brown coal char*, Part 3: *Determination of the moisture holding capacity of lower rank coals*.

The moisture holding capacity is an indicator of the rank of lower rank coals and is used in coal classification for correcting the specific energy of the sample to moist mineral-matter-free basis. The full moisture holding capacity is that of the coal in equilibrium with an atmosphere saturated with water vapour. The moisture content of the air-dried sample will change with atmospheric conditions (partial pressure of water vapour). These conditions will vary both between the coal sample preparation room and the analytical laboratory and on a daily basis in the laboratory. Therefore, moisture determinations should be carried out at the same time as determinations of other parameters. Since there are insuperable experimental difficulties in working with an atmosphere saturated with water vapour, the determination is carried out at 96 percent relative humidity.

The moisture holding capacity of higher rank coals closely represents their bed moisture content. However, for lower rank coals this may not be the case.[*]

The term ‘normative’ has been used in this Standard to define the application of the appendix to which it applies. A ‘normative’ appendix is an integral part of a Standard.

[*] ODE, W.H. and GIBSON, F.H. *International System for Classifying Brown Coals and Lignites and its Application to American Coal*. Bureau of Mines RI 5695, 1960, p14.

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Methods for the analysis and testing of lower rank coal and its chars

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1 SCOPE

This Standard sets out a method for the determination of the moisture holding capacity of lower rank coals.

2 REFERENCED DOCUMENTS

The following Standards are referred to in this Standard:

AS	
1038	Coal and coke—Analysis and testing
1038.1	Part 1: Higher rank coal—Total moisture
1038.16	Part 16: Assessment and reporting of results
1152	Specification for test sieves
2243	Safety in laboratories (series)
2418	Coal and coke—Glossary of terms
2508	Safe storage and handling information card (series)
2706	Numerical values—Rounding and interpretation of limiting values

3 DEFINITIONS

For the purpose of this Standard, the definitions in AS 2418 apply.

4 PRINCIPLE

The coal is brought to equilibrium with an atmosphere of 96 percent relative humidity (attained by means of a saturated solution of potassium sulphate) at 30°C and then dried to constant mass at 105°C. The conditioning of the coal is carried out under reduced pressure. The moisture holding capacity is reported as a percentage, by mass, of the conditioned moist coal.

5 SAFETY

For information on laboratory safety, reference should be made to the relevant parts of AS 2243 and AS 2508.

6 REAGENTS

6.1 General

Unless otherwise specified, all reagents shall be of analytical reagent grade, and only distilled water, or water of equivalent purity, shall be used.

6.2 Potassium sulphate pulp

Add sufficient potassium sulphate to water to form a pulp so that solid potassium sulphate protrudes above the air/pulp interface.

