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Methods for

Analysis and testing of coal and coke —

Part 107: Caking and swelling
properties of coal —

Section 107.3 Determination of swelling
properties using a dilatometer

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Solid Mineral Fuels Standards Policy Committee (SFC/-) to Technical Committee SFC/3, upon which the following bodies were represented:

- British Cement Association
- British Coal Corporation
- British Gas plc
- British Steel Industry
- Department of Trade and Industry (Standards and Quality Policy Unit, Quality, Design and Education Division)
- Electricity Supply Industry in England and Wales
- GAMBICA (BEAMA Ltd.)
- Institute of British Foundrymen
- Institute of Petroleum
- Power Generation Contractors Association (BEAMA Ltd.)

This British Standard, having been prepared under the direction of the Solid Mineral Fuels Standards Policy Committee, was published under the authority of the Board of BSI and comes into effect on 31 October 1990

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Foreword

This Section of BS 1016 has been prepared under the direction of the Solid Mineral Fuels Standards Policy Committee. It is a partial revision of BS 1016-12:1980 replacing clause 7 from which it differs principally in that a transducer/electrical signal recorder is specified as an alternative means of recording piston movement, and the alternative procedure whereby test pieces are tested in the same retort during independent furnace heating cycles is covered more fully. BS 1016-12:1980 will be withdrawn when Sections 107.1 and 107.2 are published.

This Part is one of the first to be renumbered under a scheme for rationalizing and restructuring BS 1016. The new series, when complete, will begin with Part 100, which will include a general introduction. The earlier series of Parts is as follows, with the new Part numbers (which will be given to revisions when they are published) in parentheses.

- *Part 1: Total moisture of coal (Part 101);*
- *Part 2: Total moisture of coke (Part 102);*
- *Part 3: Proximate analysis of coal (Part 104);*
- *Part 4: Moisture, volatile matter and ash in the analysis sample of coke (Part 104);*
- *Part 5: Gross calorific value of coal and coke (Part 105);*
- *Part 6: Ultimate analysis of coal (Part 106);*
- *Part 7: Ultimate analysis of coke (Part 106);*
- *Part 8: Chlorine in coal and coke (Part 106);*
- *Part 9: Phosphorus in coal and coke (Part 106);*
- *Part 10: Arsenic in coal and coke (Part 106);*
- *Part 11: Forms of sulphur in coal (Part 106);*
- *Part 12: Caking and swelling properties of coal (Part 107);*
- *Part 13: Tests special to coke (Part 108);*
- *Part 14: Analysis of coal ash and coke ash (Part 114);*
- *Part 15: Fusibility of coal ash and coke ash (Part 113);*
- *Part 16: Methods for reporting results (Part 100);*
- *Part 17: Size analysis of coal (Part 109);*
- *Part 18: Size analysis of coke (Part 110);*
- *Part 20: Determination of Hardgrove grindability index of hard coal (Part 112);*
- *Part 21: Determination of moisture-holding capacity of hard coal (Part 103).*

The following Part in the new series has already been published.

- *Part 111: Determination of abrasion index of coal.*

It is intended to publish the following Sections of BS 1016-107.

- *Section 107.1: Determination of crucible swelling number;*
- *Section 107.2: Assessment of caking power by Gray-King coke test;*
- *Section 107.4: Determination of plastic properties using a constant-torque Gieseler plastometer.*

This Section of BS 1016 is based on ISO 8264:1989 “*Hard coal — Determination of the swelling properties using a dilatometer*”, published by the International Organization for Standardization (ISO). The introduction in ISO 8264 explains how the Audibert-Arnu dilatometer test described in ISO 349 (for which there is no corresponding British Standard) will eventually be replaced internationally by the Ruhr dilatometer test described in ISO 8264. This text has been omitted from this Section. References to British Standards, which are not exactly technically equivalent to the references in ISO 8264 to international standards, have been substituted and certain other minor changes have been made. Subject to these changes, and for ease of production, the text of ISO 8264 has been used in this Section.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

