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Edition 1 and nat. amdt 1

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Any reference to SABS ISO 7404-1 is deemed
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SOUTH AFRICAN NATIONAL STANDARD

Methods for the petrographic analysis of bituminous coal and anthracite

Part 1: Vocabulary

This national standard is the identical implementation of ISO 7404-1:1994, and is adopted with the permission of the International Organization for Standardization.

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Table of changes

Change No.	Date	Scope
Nat. amdt 1	2007	Amended to change the designation from SABS to SANS, with no technical changes.

National foreword

This South African standard was approved by National Committee SABS/TC 027/SC 05, *Solid mineral fuels – Coal – Methods of analysis*, in accordance with procedures of the SABS Standards Division, in compliance with annex 3 of the WTO/TBT agreement.

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This SANS document supersedes SABS ISO 7404-1:1994 (edition 1).

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INTERNATIONAL
STANDARD

ISO
7404-1

Second edition
1994-10-01

**Methods for the petrographic analysis of
bituminous coal and anthracite —**

Part 1:
Vocabulary

*Méthodes d'analyse pétrographique des charbons bitumineux et de
l'antracite —*

Partie 1: Vocabulaire



Reference number
ISO 7404-1:1994(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 7404-1 was prepared by Technical Committee ISO/TC 27, *Solid mineral fuels*.

This second edition cancels and replaces the first edition (ISO 7404-1:1984), which has been technically revised.

ISO 7404 consists of the following parts, under the general title *Methods for the petrographic analysis of bituminous coal and anthracite*:

- Part 1: *Vocabulary*
- Part 2: *Method of preparing coal samples*
- Part 3: *Method of determining maceral group composition*
- Part 4: *Method of determining microlithotype, carbominerite and minerite composition*
- Part 5: *Method of determining microscopically the reflectance of vitrinite*

Annex A of this part of ISO 7404 is for information only.

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Introduction

Petrographic analyses have been recognized internationally as important in the context of the genesis, vertical and lateral variation, continuity, metamorphism and usage of coal. The International Committee for Coal and Organic Petrology (ICCP) has made recommendations concerning nomenclature and analytical methods and has published an extensive handbook describing in detail the characteristics of a wide range of coals. The text of this part of ISO 7404 agrees substantially with the text of the handbook and incorporates many useful comments made by members of the ICCP and by member bodies of ISO/TC 27, *Solid mineral fuels*.

Petrographic analyses of a single coal provide information about the rank, the maceral and microlithotype compositions and the distribution of minerals in the coal. The reflectance of vitrinite is a useful measure of coal rank and the distribution of the reflectance of vitrinite in a coal blend, together with a maceral group analysis, can provide information about some important chemical and technological properties of the blend.

ISO 7404 is concerned with the methods of petrographic analysis currently employed in characterizing bituminous coal and anthracite in the context of their technological use. It establishes a system for petrographic analysis and comprises five parts, as follows:

Part 1: Vocabulary.

Part 2: Method of preparing coal samples.

Part 3: Method of determining maceral group composition.

Part 4: Method of determining microlithotype, carbominerite and minerite composition.

Part 5: Method of determining microscopically the reflectance of vitrinite.

For information on the nomenclature and analysis of brown coals and lignites, reference should be made to the *International Handbook of Coal Petrography*^[1] published by the ICCP.

The complexity of coals mined throughout the world, coupled with the many applications of coal petrology in all branches of coal utilization, makes the compilation of a fully comprehensive glossary of terms a very difficult task.

This difficulty is compounded because some of the terms requiring definition have different meanings in different national nomenclatures. As a consequence, several general terms, such as bituminous coal, anthracite, brown coal and lignite, and sub-bituminous coal have had to be defined very loosely in this part of ISO 7404 pending international agreement on a new rationalized system of coal nomenclature. The definitions given are intended for use solely in connection with the generally accepted inter-