

ICS 73.040

**SANS 10320:2004**

ISBN 0-626-16174-6

Edition 1

## **SOUTH AFRICAN NATIONAL STANDARD**

### **South African guide to the systematic evaluation of coal resources and coal reserves**

---

Published by Standards South Africa  
1 dr lategan road groenkloof ☒ private bag x191 pretoria 0001  
tel: 012 428 7911 fax: 012 344 1568 international code + 27 12  
[www.stansa.co.za](http://www.stansa.co.za)  
© Standards South Africa

**standards**  
**SouthAfrica**  
(a division of SABS)

**SANS 10320:2004**  
Edition 1

**Table of changes**

<b>Change No.</b>	<b>Date</b>	<b>Scope</b>

**Abstract**

Provides a detailed framework for reporting on coal resources and coal reserves for the purposes of the Securities Exchange and the National Coal Inventory.

**Keywords**

coal, coal inventory, coal mining, coal products, coal reserves, coal resources, documentation, mineral resources, minerals, reports, specifications.

**Acknowledgement**

Standards South Africa wishes to acknowledge the permission granted by the Department of Minerals and Energy to reproduce the National Coal Inventory data capture forms given in annex A.

**Foreword**

This South African standard was approved by National Committee StanSA SC 5140.20C, *South African committee for solid mineral fuels – Coal classification*, in accordance with procedures of Standards South Africa, in compliance with annex 3 of the WTO/TBT agreement.

A reference is made in 3.1 to “national regulations and statutory requirements” on reporting of coal resources and reserves. In South Africa this means the listings requirements of the Johannesburg Securities Exchange of South Africa and the following Acts (as amended from time to time):

- a) the Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965);
- b) the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983);
- c) the Environmental Conservation Act, 1989 (Act No. 73 of 1989);
- d) the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002); and
- e) the National Water Act, 1998 (Act No. 36 of 1998).

This standard should be read in conjunction with the *SAMREC Code*.

Annex A forms an integral part of this standard. Annexes B, C, D, E, F, G and H are for information only.

## **Introduction**

General concepts for reporting coal resources and coal reserves were established with the publication of the South African Code for Reporting of Mineral Resources and Mineral Reserves (The *SAMREC Code*), prepared by the South African Mineral Resource Committee under the auspices of the South African Institute of Mining and Metallurgy. The *SAMREC Code* provides the framework and standards for public reporting for the Johannesburg Securities Exchange and contains a clause “commodity specific reporting for coal”. The *SAMREC Code* has been adopted by the South African Institute of Mining and Metallurgy (SAIMM) and SAMREC member organizations and is incorporated in the Johannesburg Securities Exchange listing requirements and continuing reporting obligations.

It was, however, apparent that additional guidelines and parameters were necessary to standardize the reporting of coal resources and coal reserves for both Securities Exchange requirements and for the South African National Coal Resource and Coal Reserve Inventory (also called the “National Coal Inventory”).

The standard was prepared in conjunction with the *SAMREC Code* by the SAMREC Coal Commodity Specific Subcommittee. This standard is the coal commodity’s specific equivalent to the check list in appendix 1 of the *SAMREC Code*, the “Check list of assessment and reporting criteria”.

# SANS 10320:2004

Edition 1

## Contents

	Page
Abstract	
Keywords	
Acknowledgement	
Foreword	
Introduction.....	1
1 Scope.....	7
2 Normative references.....	7
3 Definitions .....	8
4 Reporting for Securities Exchange purposes (The public report) .....	31
4.1 Introduction.....	31
4.2 Scope of the <i>SAMREC Code</i> .....	31
4.3 Competence and responsibility .....	31
4.4 Reporting on coal resources and coal reserves.....	32
4.4.1 Introduction .....	32
4.4.2 General requirements .....	33
4.4.3 Reporting of coal resources.....	34
4.4.4 Reporting of coal reserves.....	35
4.5 Reporting of exploration results.....	35
4.6 Reporting of coal in remnants, coal in pillars, discards and reject coal in stockpiles, dumps and tailings ponds.....	36
5 Reporting for the South African National Coal Inventory.....	36
5.1 Introduction.....	36
5.2 Data capture forms.....	36
5.3 Classification of coal resources and coal reserves .....	37
5.4 Schematic decision tree .....	38
5.4.1 General .....	38
5.4.2 The geological study.....	38
5.4.3 The economic study.....	38
5.5 Coal resource and reserve blocks.....	40
5.6 Coal reserve exploitation and reconciliation.....	40
5.7 Seam characteristics .....	40
5.8 In situ coal resource raw coal quality .....	41
5.9 Run of mine coal reserve coal quality .....	41
5.10 Saleable coal reserve coal quality.....	41
5.11 Coal discards.....	41
5.12 Obligations by information provider.....	42
6 Coal resource and coal reserve calculation and reporting .....	42
6.1 Introduction.....	42
6.2 Coal resource estimation confidence .....	42

**Contents** *(continued)*

	Page
<b>6.3</b> Coal resource reporting categories .....	43
<b>6.3.1</b> Introduction to reporting categories .....	43
<b>6.3.2</b> Coal occurrence .....	43
<b>6.3.3</b> Reconnaissance coal resource .....	43
<b>6.3.4</b> Inferred coal resource.....	45
<b>6.3.5</b> Indicated coal resource .....	45
<b>6.3.6</b> Measured coal resource .....	45
<b>6.3.7</b> Pre-feasibility coal resource .....	46
<b>6.3.8</b> Feasibility coal resource .....	46
<b>6.4</b> Coal reserve reporting categories .....	46
<b>6.4.1</b> Introduction .....	46
<b>6.4.2</b> Probable coal reserve.....	47
<b>6.4.3</b> Proven coal reserve.....	47
<b>6.5</b> Calculation of coal resources and coal reserves.....	47
<b>6.5.1</b> General.....	47
<b>6.5.2</b> Calculation of coal resources .....	49
<b>6.5.3</b> In situ coal resources.....	60
<b>6.5.4</b> Mineable in situ coal resources .....	61
<b>6.5.5</b> Calculation of coal reserves .....	62
<b>6.5.6</b> ROM coal reserves.....	68
<b>6.5.7</b> Saleable coal reserves .....	75
<b>7</b> Evaluation methods and procedures .....	78
<b>7.1</b> Introduction.....	78
<b>7.2</b> Preliminary surveys .....	79
<b>7.2.1</b> Collation of available information.....	79
<b>7.2.2</b> Remote sensing surveys .....	79
<b>7.2.3</b> Regional mapping.....	79
<b>7.2.4</b> Land survey .....	80
<b>7.3</b> Geological drilling .....	80
<b>7.3.1</b> Small diameter borehole core drilling .....	80
<b>7.3.2</b> Open hole drilling.....	80
<b>7.3.3</b> Borehole down-hole geophysics.....	80
<b>7.3.4</b> Large diameter borehole core drilling.....	81
<b>7.3.5</b> Directional and angled borehole drilling .....	81
<b>7.4</b> Coal sampling.....	81
<b>7.4.1</b> Small diameter borehole core samples .....	81
<b>7.4.2</b> Sample preparation, storage and analysis .....	82
<b>7.4.3</b> Coal quality .....	82
<b>7.4.4</b> Density.....	84
<b>7.5</b> Computer processing and coal deposit modelling .....	84
<b>7.6</b> Coal processing.....	85
<b>7.7</b> Geotechnical aspects .....	85
<b>7.8</b> Geohydrology .....	85