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Coal — Guidance on the sampling of coal seams

Charbon — Recommandations pour l'échantillonnage des veines de charbon

Reference number
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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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Contents

Page

Foreword ... **iv**

Introduction ... **v**

1 Scope ... **1**

2 Normative reference ... **1**

3 Terms and definitions ... **1**

4 Selection of sampling site ... **3**
4.1 Initial considerations ... 3
4.2 Sampling procedures ... 3
4.3 Core sampling ... 4
4.3.1 Purpose of coal sampling ... 4
4.3.2 Core drilling and sampling procedures ... 4
4.3.3 Core recovery ... 5
4.3.4 Core handling and identification ... 6
4.3.5 Procedure for placing samples in bags ... 6
4.3.6 Procedure for storing and despatching samples ... 6
4.3.7 Boxing of core ... 7
4.3.8 Transporting core ... 8
4.4 Cuttings or “chip” sampling ... 8
4.4.1 Purpose of cuttings sampling ... 8
4.4.2 Method of cuttings sampling ... 8
4.4.3 Cuttings samples identification and labelling ... 9
4.4.4 Additional information on drilling and sampling of cores ... 9
4.5 Open-cut slot sampling ... 9
4.5.1 Purpose of open-cut slot sampling ... 9
4.5.2 Method of open-cut slot sampling ... 10
4.6 Adit, drift or shaft sampling ... 12
4.7 Pillar sampling ... 13
4.7.1 Purpose of pillar sampling ... 13
4.7.2 Marking of sampling site ... 13
4.7.3 Method of pillar sampling ... 13
4.8 Channel sampling ... 15
4.8.1 Purpose of channel sampling ... 15
4.8.2 Manual sampling in underground situations ... 16
4.8.3 Continuous miner sampling ... 17
4.9 Strip sampling ... 18
4.9.1 Purpose of strip sampling ... 18
4.9.2 Method of strip sampling ... 18
4.10 Total moisture samples ... 18
4.11 Labelling ... 18

5 Recording of sampling location and geological data ... **19**
5.1 Sampling location ... 19
5.2 Geological and sampling data ... 19

6 Transportation of samples ... **20**
6.1 Pillar samples ... 20
6.2 Channel and strip including sub-sectional (ply) samples ... 20

Annex A (informative) **Example of a standard form for recording channel sampling data** ... **21**

Bibliography ... **23**

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Foreword

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This document was prepared by Technical Committee ISO/TC 27, *Coal and coke*, Subcommittee SC 4, *Sampling*.

This third edition cancels and replaces the second edition (ISO 14180:2017), of which it constitutes a minor revision. The changes are as follows:

— 3.7 revised, with note to entry added;

— notes in 4.1 and 4.4.2 changed to body text;

— new subclause 4.4.4 added;

— editorial changes in accordance with the latest version of the ISO/IEC Directives Part 2.

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Introduction

Coal is one of the most challenging materials to sample due to its characteristic heterogeneity. A coal seam can consist of a single stratum of one lithotype of relatively uniform maceral constitution or, more commonly, a number of layers of different coal lithotypes varying in thickness and lateral extent. The seam can also contain discrete layers of inorganic sediments or carbonaceous shales of varying thickness. Veins of concordant or discordant secondary mineral rock can also be present. The lithotype layers can vary considerably in hardness, texture and structure according to the nature of the coal and inorganic sediments. The inorganic layers can also thicken laterally, splitting the seam into two or more separate units, which can require multiple samples.

It is strongly recommended that a collaborative team, including geologists, mining engineers, safety, land and laboratory professionals, reviews each proposed sampling programme to help ensure optimal effectiveness and efficiency are obtained.

The purpose of sampling coal for any resource evaluation is to predict the expected quality of the produced coal from a given locale. Therefore, the fundamental goal of each sampling effort is the collection of representative samples of the seam(s) at each sampling location. A properly executed sampling programme needs to accurately define both the lateral variation in coal quality and the average quality for a specified area.

After inspection of any seam, the sampler designs a sampling programme with sufficient representative samples to define the range of expected coal quality. In variable seams it is necessary to take a number of samples to improve the representativity of sampling.

In operating mines, the manager needs to be consulted and approval needs to be obtained before sampling sites are selected and sampling proceeds. Where there is no operating mine, the area or tenement owner and/or operator is consulted.

In all sampling situations, experienced and qualified personnel will be required for supervision and to ensure that accurate records are made of location, thickness and lithotype descriptions and that all safety precautions have been addressed.

Methods of sampling for physical, chemical, petrographic or utilization properties are described for the following:

a) sampling from small and large diameter drill cores;

b) sampling from exposed seam faces;

c) sampling from trial open-cut excavations;

d) sampling from underground workings.

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