ISO 18871:2015-09 (E)

Method of determining coalbed methane content

Contents

Page

Foreword v

1 Scope 1

2 Termsanddefinitions 1

3 Apparatus 3
3.1 Desorption canister 3
3.2 Metering device 3
3.3 Thermostat 5
3.4 Temperature measuring devices 5
3.5 Barometer 5
3.6 Electronic balance (top load) 5
3.7 Standard sieve 5
3.8 Coal crusher 5
3.9 Hose 6
3.10 Gas-sample bottles 6
3.11 Padding 6
3.12 Quick connector 6
3.13 Gas analyser 6

4 Sample collection 7
4.1 Preparation of sampling 7
4.1.1 General 7
4.1.2 Desorption canister 7
4.1.3 Metering device 7
4.1.4 Thermostat 7
4.2 Sampling principle 7
4.2.1 Sample quality 7
4.2.2 Sampling time 8
4.3 Sampling procedure 8
4.3.1 General 8
4.3.2 Core samples 8
4.3.3 Cutting samples 8
4.4 Coal lump samples 8
4.4.1 General 8
4.4.2 Parameters to record 8

5 Measuring method and process 9
5.1 Use of core samples 9
5.1.1 Natural desorption 9
5.1.2 Measurement of residual gas 10
5.1.3 Gas sampling, composition analysis and isotope analysis 10
5.2 Use of cuttings samples or coal lump samples 12
5.2.1 Q2 measurement 12
5.2.2 Q3 measurement 12

6 Data processing 13
6.1 Conversion of the desorbed gas volume 13
6.2 Reporting of gas content 13
6.3 Calculation of gas composition 13
6.4 Calculation of gas content 13

6.4.1 General 13
6.4.2 Calculation of lost gas content (Q1) 13
6.4.3 Calculation of gas desorption content (Q2) 15
6.4.4 Calculation of residual gas content (Q3) 15
6.4.5 Calculation of free gas content 16
6.4.6 Calculation of gas content 16

6.4.7 Calculation of adsorption time 17
6.5 Numerical accuracy requirements 17

7 Measurement report 17

8 Quality commentaries 17
8.1 Quality commentary of sample collection 17
8.1.1 Situations should be noted on the record 17
8.2 Quality commentary on measuring operation 18
8.3 Conclusion of quality commentary 18
8.3.1 Qualified samples 18
8.3.2 Reference samples 18
8.3.3 Discard 18

Annex A (normative) Raw data of gas natural desorption 19

Annex B (normative) Lost gas original records table 21

Annex C (normative) Lost gas volume calculation of Sample XX (direct method) 22

Annex D (normative) Cumulative gas desorption curve of sample XX 23

Annex E (normative) Measurement results table of CBM content 24

Annex F (normative) Sampling form for in-seam drilling 25

Annex G (normative) Sampling form for core drilling 26

Annex H (normative) Laboratory test form 27

Annex I (normative) Short report 28

Bibliography 29