

GEOENVIRONMENTAL STANDARDS FOR SOIL & SITE ASSESSMENT – 2 July 2020
An Occasional Newsletter

Distribution:

National Brownfield Forum

SCI Environment, Health & Safety Group committee

AGS Contaminated Land WG
AGS Laboratories Group

Geol Soc CLSG committee

Introduction

All face-to-face ISO and CEN meetings have been cancelled for the foreseeable future because of the Covid-19 situation. This includes the meeting of CEN TC444 (*Environmental characterization of solid matrices*), its Sub-committees and Working Groups (WGs). The individual TC444 WGs will be holding virtual meetings during the next few months. It is possible that an attempt will be held to hold a conventional meeting of TC444 in Milan in September.

TC 190 SCs and WGs will meet virtually during September and October culminating in a plenary meeting of TC190 in October.

BS10176 - Sampling soils for VOCs

BS 10176:2020 - *Taking soil samples for determination of volatile organic compounds (VOCs) – Specification* was published during June.

BS EN ISO 21365 Conceptual site models

BS EN ISO 21365: 2020 - *Conceptual site models for potentially contaminated sites* was published during June.

Publication of existing International Standards on biological testing as European Standards

A range of existing International Standards on biological testing dated from 2012 to 2019 have recently been adopted by CEN TC444 as European Standards and thus become British Standards, irrespective of whether they had previously been adopted as BSs.

Future of BS1377

The test methods described in BS EN ISO 17892 parts 1 to 12 now supersede the same tests in BS 1377:1990 parts 2, 5, 6, 7 and 8, which should not be specified. Please see the relevant BSI webpages. BS 1377 Part 3 was revised recently and published as *BS 1377-3:2018 Methods of test for soils for civil engineering purposes - Chemical and electro-chemical testing*. Work has started to edit, update and consolidate the laboratory soil tests in BS 1377:1990 parts 2, 4, 5, 6, 7 and 8. A draft replacement British Standard (or standards) will be published for public comment in due course.

Copies of draft standards are available from the representatives of organisations that are members of BSI Technical Committee EH4 (e.g. AGS, EIC, SCI). If you do not know who represents an organisation to which you belong, you need to ask the organisation – this is not information that BSI is permitted to supply.

Mike Smith



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<i>New or amended entries – Early March to 11 June</i>
<i>New or amended entries – 12 to 30 June</i>
<i>Published standards –Early March to 31 May</i>
<i>Published standards –1 to 30 June</i>

ISO terminology: CD = Committee Draft, DIS = Draft International Standard, FDIS = Final Draft International Standard, NWIP = New Work Item Proposal, WD = Working Draft

CEN terminology: prEN =enquiry stage (equivalent of DIS), FprEN = for Final Vote (equivalent of FDIS)

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BSI PROJECTS		
New British Standard BS10176	Taking soil samples for determination of volatile organic compounds (VOCs) - Specification	Published June 2020.
BS 5930:2015 + A1:2020	Code of practice for ground investigations	Published June 2020
PAS 128 (revision)	Underground utility detection, verification and location - Specification	Public comment period ended 16 March.
ISO/CEN GEOTECHNICAL STANDARDS		
BS EN ISO 18674 -3:2017 + A1:2020	Geotechnical investigation and testing – Geotechnical monitoring by field instruments – Part 3 Measurement of displacements across a line: Inclinometers	Published May 2020
BS EN ISO FDIS 18674 -4:	Geotechnical investigation and testing – Geotechnical monitoring by field instruments – Part 4: Measurement of pore water pressure: Piezometers	Comment period ended 22 April 2020
ISO DIS 22282-4	Geotechnical investigation and testing – Geohydraulic testing – Part 4: Pumping tests	Comment period ended 14 June 2020
BS EN ISO FDIS FprEN 22475-1	Geotechnical investigation and testing – Sampling of soil, rock and groundwater – Technical principles	FDIS ballot launched 25 February. Comment period ended 7 April
BS ISO FDIS FprEN 22476-9	Geotechnical investigation and testing – Field testing – Part 9: Field vane test (FVT and FVT-F)	Comment period ends 14 July 2020
OTHER ISO STANDARDS ON SOIL & SITE ASSESSMENT Etc.		
BS ISO FDIS 11063 (revision of 11063:2012)	Direct extraction of soil DNA	Comment period ends 7 August 2020
ISO DIS 12404 (revision of BS EN ISO 12404: 2015)	Soil & Waste - Selection & application of analytical screening methods for on-site use	Comment period ended 4 May.
ISO WD 18400-301	Sampling and measuring of volatiles in soil quality field investigations	ISO project initiated
BS EN ISO 21365: 2020	Conceptual site models for potentially contaminated sites	Published June 2020

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ISO DIS 23400	Guidelines for the determination of organic carbon and nitrogen stocks and their variations in mineral soil at plot scale	DIS to be launched May 2020
ISO NP 24212	Remediation techniques applied at contaminated sites	Work in progress in ISO

SELECTED DRAFT ANALYTICAL AND BIOLOGICAL TESTING STANDARDS etc.

ISO FDIS 10390	Soil, sludge and treated biowaste – Determination of pH	Comment period ended 1 March 2020
ISO DIS 11916-3	Soil quality – Determination of selected explosives and related compounds – Part 3: Method using liquid chromatography-tandem mass spectrometry (LC-MS/MS)	Comment period ended 12 April 2020
CEN FprEN 13656	Soil, treated biowaste, sludge and waste – Digestion with hydrochloric (HCl), nitric (HNO ₃) and tetrafluoroboric (HBF ₄) or hydrofluoric (HF) acid mixture for subsequent determination of elements	Comments required by 1 August.
CEN prEN 14735	Characterization of waste – Preparation of waste samples for ecotoxicity tests	Comment period ended 11 May 2020.
ISO DIS 15192	Characterization of soil and waste – Determination of Chromium (VI) in solid material by alkaline digestion and ion chromatography with spectrophotometric detection	Comment period ended 10 June.
CEN prEN 15216	Environmental matrices – Determination of dissolved solids (TDS) in water and eluates – Complementary element	Comment period ended 9 December
CEN prEN 15935	Sludge, treated biowaste, soil and waste – Determination of loss on ignition	Comment period ended 18 May
CEN prEN 15936	Sludge, treated biowaste, soil and waste – Determination of total organic carbon (TOC) by dry combustion	Comments required by 17 August
CEN pr EN 16166	Sludge, treated biowaste, soil and sediments – Determination of adsorbed organically bound halogens (AOX)	Comments required by 17 August
CEN prEN 17503	Environmental solid matrices – Determination of polycyclic aromatic hydrocarbons (PAH) by gas chromatography (GC) and high performance liquid chromatography (HPLC)	Comment period ended 30 June
CEN prEN 17505	Soil and waste characterization – Temperature dependent differentiation of total carbon (TOC400, ROC, TIC900)	Comment period ended 9 June.
CEN prEN 17516	Waste – Characterization of granular solids with potential for use as construction material – Compliance leaching test – Up-flow percolation test	Comments required by 17 August
ISO CD 24032	In-situ caging of snails to assess bioaccumulation of contaminants	Comment period ended 26 September 2019

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ISO CD TS 29843-2	Soil quality – Determination of soil microbial biodiversity – Part 2: Method by phospholipid fatty acid analysis (PLFA) using the simple PLFA extraction method	Comments required by 7 August
ISO FDIS 54321	Soil, treated biowaste, sludge and waste – Digestion of aqua regia soluble fractions of elements	Comment period ended 1 June
CEN NWIP	Characterization of environmental solid matrices – Halogen and sulfur by oxidative pyrohydrolytic combustion followed by ion chromatography detection and complementary determination methods	Subject to approval by CEN TC444
CEN NWIP	Environmental solid matrices – Determination of selected low boiling point alcohols using gas chromatography with mass spectrometry detection after static head-space extraction (HS-GC-MS)	Subject to approval by CEN TC444
ISO/CEN NWIP	Sludge, treated biowaste and soil – Determination of elements using inductively coupled plasma optical spectrometry	Subject to approval by CEN TC444 & ISO TC190

RECENTLY PUBLISHED ANALYTICAL AND OTHER TESTING SOIL QUALITY STANDARDS

BS EN ISO 11266:2020	Soil quality – Guidance on laboratory testing for biodegradation of organic chemicals in soil under aerobic conditions	Published June 2020
BS ISO 11277:2020	Soil quality – Determination of particle size distribution in mineral soil material – Method by sieving and sedimentation	Published April 2020
BS EN ISO 14239:2020	Soil quality – Laboratory incubation systems for measuring the mineralization of organic chemicals in soil under aerobic conditions	Published June 2020
BS EN ISO 15473:2020	Soil quality – Guidance on laboratory testing for biodegradation of organic chemicals in soil under anaerobic conditions	Published May 2020
BS EN ISO 15685:2020	Soil quality – Determination of potential nitrification and inhibition of nitrification – Rapid test by ammonium oxidation	Published May 2020
BS PD CEN/TR 16192:2020	Waste – Guidance on analysis of eluates	Published April 2020
BS ISO 16751:2020	Environmental availability of non-polar organic compounds – Determination of the potentially bioavailable fraction and the non-bioavailable fraction using a strong adsorbent or complexing agent	Published June 2020

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BS ISO 17512-1: 2020	Soil quality – Avoidance test for determining the quality of soils and effects of chemicals on behaviour – Part 1: Test with earthworms (<i>Eisenia fetida</i> and <i>Eisenia andrei</i>)	Published June 2020
BS ISO 17512-2: 2020	Soil quality – Avoidance test for determining the quality of soils and effects of chemicals on behaviour – Part 2: Test with collembolans (<i>Folsomia candida</i>)	Published June 2020
BS EN ISO 20130:2020	Soil quality – Measurement of enzyme activity patterns in soil samples using colorimetric substrates in micro-well plates	Published June 2020
BS EN ISO 21479:2020	Soil quality – Determination of the effects of pollutants on soil flora – Leaf fatty acid composition of plants to assess soil quality	Published June 2020
BS ISO 22190:2020	Soil quality – Use of extracts for the assessment of bioavailability of trace elements in soils	Published April 2020
BS ISO 23266:2020	Soil quality - A Test for measuring the inhibition of reproduction in oribatid mites (<i>Oppia nitens</i>) exposed to contaminated soil	Published June 2020
BS EN ISO 29200:2020	Soil quality – Assessment of genotoxic effects on higher plants – <i>Vicia faba</i> micronucleus test	Published June 2020

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Background

BSI EH4 Soil Quality is the BSI technical committee responsible for the production of standards relating to soil quality including contaminated land and natural and near-natural sites (e.g. farm land). Standards cover sampling, chemical analysis, physical testing, biological testing, and soil and site assessment. EH4 also deals with standards for the analysis and testing of wastes.

BSI EH4 shadows ISO (International Organization for Standardization) Technical Committee *TC 190 Soil Quality* and CEN TC444 (*Sampling and test methods for Environmental characterization of solid matrices*). CEN is the European standards organisation. EH4 has recently assumed responsibility for European standards (ENs) for analysis and testing of wastes produced by CEN TC444.

EH4 is also responsible for BS10175 (investigation of contaminated sites), BS 8576 (ground gas investigations) and BS8454 (protection of buildings against gas). Work is in progress on a BS on sampling soil for determination of VOCs (proposed BS 10176).

There are about twenty organisations (e.g. trade bodies, learned societies, professional bodies, quasi-government bodies etc.) represented on the committee at present together with a handful of individual experts who represent the UK on various ISO and CEN Working Groups (e.g. Paul Nathanail, Mike Ramsey). To find out who represents a particular organisation, the organisation should be contacted.

Nominated representatives of member organisations receive copies of formal drafts of standards, known in the case of ISO as Committee Drafts (CDs), Draft International Standards (DISs) and Final Draft International Standards (FDISs); and in the case of BSI as Drafts for Public Comment. They also receive copies of published standards for personal use.

Those representing an organisation are expected to circulate papers to, and consult, those they represent. Draft standards can be posted on “members-only” sections of web-sites for downloading or can be e-mailed to all members of the organisation that is represented.

EH4 actively seeks to broaden its membership. The wider the membership of EH4, the greater the confidence there can be that the standards produced are technically sound and known about by potential users from a wide variety of backgrounds. It also increases the pool of people from which it might be possible to draw on from time to time to represent the UK in ISO and CEN Working Groups. BSI can nominate one or more experts to each of the numerous Working Groups in ISO TC190 and CEN TC444. Whilst experts will hopefully attend meetings of the WGs, in practice this is not always possible and participation is limited to receipt and review of papers. BSI makes a contribution towards the costs of UK experts attending ISO and CEN meetings.

Member organisations of EH4 include:

Association of Geotechnical and Geoenvironmental Specialists (AGS), British Society of Soil Science, Centre for Ecology & Hydrology, Chartered Institute of Environmental Health, Environment Agency, Environmental Industries Commission (EIC) , EIC Contaminated Land Working Group, Environmental Services Association, Institution of Civil Engineers, Institution of Environmental Sciences, Ministry of Defence, National House Building Council (NHBC), Royal Society of Biology, Society of Brownfield Risk Assessment (SOBRA), Society of Chemical Industry (SCI), the James Hutton Institute, University of Glasgow, Water UK, Yorkshire & Lincolnshire Pollution Advisory Group.

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