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To: National Brownfield Forum

Please feel free to pass on to any of your contacts who might be interested.

INTRODUCTION

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, standards relating to soil and climate change, and ecosystem services.

BSI EH4 shadows ISO (International Organization for Standardization) Technical Committee *TC 190-Soil Quality* and CEN *TC444-Environmental characterization of solid matrices*. CEN is the European standards organisation.

EH4 actively seeks to broaden its membership. The wider the membership, the greater the confidence that the standards produced are technically sound and known about by potential users from a wide variety of backgrounds. Participation in BSI, CEN and ISO committees can contribute to CPD. Contact the Committee Manager, Joanna Macnamara (joanna.macnamara@bsigroup.com) for more information.

Mike Smith

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11 April 2024

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REVISION OF BS10175:2011+A2:2017

The expected date for publication of a Draft for Public Consultation (DPC) of the revised BS 10175 is the late May or early June 2024. There will be a two-month long period for comments.

POSSIBLE REVISION OF BS8576:2013

BS 8576:2013 Guidance on investigations for ground gas – Permanent gases and Volatile Organic Compounds (VOCs) was subjected early in 2023 to a 5-yearly review to decide whether revision is necessary. BSI committee *EH/4-Soil quality* decided, based on comments received, that revision is needed. A business case for revision is being prepared. It is likely to be several months before work on the revision can start.

PROPOSED BS 10777 - USE ON SITE OF [HANDHELD/PORTABLE] ENERGY DISPERSIVE X-RAY FLUORESCENCE SPECTROMETERS

Work has started on a new British Standard:

> **BS 10777** *Soil and soil-like materials quality assessment – Use on site of [handheld/portable] energy dispersive x-ray fluorescence spectrometers – Code of Practice*

The standard will provide guidance on how handheld/portable XRF equipment can be used during investigations in accordance with BS 10175, including to provide quantitative data of sufficient quality and reliability to be used in human health risk assessments. It is intended for use in conjunction with **BS EN ISO 13196** *Soil quality – Screening soils for selected elements by energy dispersive X-ray fluorescence spectrometry using a handheld or portable instrument* which is currently being revised.

Asbestos – PD CEN/TS 18020:2024

BSI has published PD CEN/TS18020:2024 *Construction products – Assessment of release of dangerous substances – Sampling and quantitative determination of asbestos in construction products.*

A robustness validation study is to be carried out. Arrangements for this study have yet to be agreed. Assuming the results of the validation study are satisfactory, an updated version of the TS will be published as a full standard (EN) following a further consultation phase.

The TS summarizes methods for sampling, sample preparation and identification of asbestos in construction products. It specifies appropriate sample preparation procedures for the quantitative analysis of the asbestos mass fraction in natural, manufactured or recycled large mineral aggregates and construction products of fine mineral particle size materials. It describes the identification of asbestos by polarized light microscopy (PLM) and dispersion staining, scanning electron microscopy

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(SEM) with energy dispersive X-ray analysis or transmission electron microscopy (TEM) with energy dispersive X-ray and electron diffraction analysis.

This project is being dealt with in the UK by BSI committee B/557 *Construction products - Assessment of dangerous substances* which "shadows" CEN TC/351. Stephen Forster has been an active member of the Task Group (CEN/TC351/WG5/TG51).

Standards Relating to Investigation, Assessment, Remediation and Development of Potentially Contaminated and Contaminated Sites

This AGS document provides key information required for a proper understanding and use of Standard Guidance documents and Standard Specifications. It also provides information about in which Standards guidance on various topics such as investigation, reporting and remediation can be found. It can be downloaded from:

https://www.ags.org.uk/item/standards-relating-to-investigation-assessment-remediation-and-development-of-potentially-contaminated-and-contaminated-sites/

SOIL HUB

The on-line hub for 'all things soil' (**uksoils**) brings together the best available resources, including educational information and school activities, books and films, data and maps, plus guidance for farmers and land managers on how to support healthy soils. It is also a forum to enable the sharing of knowledge and experiences, encouraging people to link up and carry out initiatives to improve soil health and share locations around the country where soil health pioneers are trying out new technologies and management practices.

The hub is supported by a partnership comprising the UK Centre for Ecology & Hydrology (UKCEH), the Sustainable Soils Alliance, Earthwatch, the University of Sheffield, the British Soil Science Society and Scotland's Rural College (SRUC).

LEACHING OF SOILS, WASTES AND CONSTRUCTION PRODUCTS

A web-site concerning leaching tests supported among others by CEN TC444/WG1 and is now available at:

http://www.leachingtests.com/

This website aims to inform the reader about the availability and suitability of standardized leaching tests to solve their questions. It focusses on interrelationships between existing leaching tests to improve understanding of the meaning of a test result. In addition, it provides information on characteristic leaching behaviour of a range of bulk material streams, for which leaching information may be sought to compare one's own material of product.

Note that the web-site, which is largely funded by the Dutch government, is still under development.

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LISTINGS

Note: *This is not necessarily a complete listing of on-going projects in ISO TC190 and CEN TC444 and, in the case of geotechnical standards, ISO TC182 and CEN TC341. At any one time there are also likely to be a number of other chemical analytical, biological testing, geotechnical and ground engineering standards, progressing through the ISO/CEN/BS system.*

KEY
Drafts - New or amended entries – 1 January to 31 December 2023
Drafts - New or amended entries – 1 to 31 January 2024
Drafts - New or amended entries – 1 to 29 February 2024
Drafts - New or amended entries – 1 to 31 March 2024
Published standards – 1 to 31 January 2024
Published standards – 1 to 29 February 2024
Published standards – 1 to 31 March 2024

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

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

Draft International Standards (DISs) and their CEN equivalents are publically available documents. Some are posted for comment on the standards dvelopment area of BSI's web-site. Committee Drafts and their CEN equivalents are not publically available but can be distributed within organisations represented on the relevant BSI committee.

Copies of draft standards are available from the representatives of organisations that are members of the BSI Technical Committee concerned. In the case of EH4, these include for example, AGS, EIC, SCI (see "background" note at the end of this Newsletter for other members). 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. However, in most cases I can supply copies for review. The BSI Committee Manager might also be willing to supply a copy.

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RECENTLY PUBLISHED STANDARDS		
(bsi) PD CEN/TR 16110:2024	**Characterization of waste – Guidance on the use of ecotoxicity tests applied to waste** ***(Supersedes CEN/TR16110:2010)***	**Published February 2024**
(bsi) PD CEN/TS 18020:2024	**Construction products – Assessment of release of dangerous substances – Sampling and quantitative determination of asbestos in construction products**	**Published March 2024**
BS EN ISO 22036:2024	**Environmental solid matrices – Determination of elements using inductively coupled plasma optical emission spectrometry (ICP-OES)**	**Published January 2024**
(bsi) PD ISO/TS 22171:2023	**Soil quality – Determination of potential cation exchange capacity (CEC) and exchangeable cations buffered at pH 7 using a molar ammonium acetate solution**	**Published January 2024**

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DRAFT ISO/CEN GEOTECHNICAL STANDARDS ***These standards form part of the programme of work of BSI committee B526/3.***		
CEN EN 1997-1	Eurocode 7 - Geotechnical design – General Rules *Will partially replace BS EN 1997-1: 2004 + A1: 2013*	BS EN 1990:2023 *Basis of structural and geotechnical design* was published in April 2023. Publication of EN1997-1 and EN 1997-2 is expected by about July 2024. Publication of EN 1997-3 is likely about January 2025. *For more information see: Bond A, Ground Engineering, 2023 (November) 30-32.*
CEN EN 1997-2	Eurocode 7 - Geotechnical design – Ground properties *Will replace BS EN 1997-2: 2007*	
CEN EN 1997-3	Eurocode 7 - Geotechnical design – Geotechnical structures *Will partially replace BS EN 1997-1: 2004*	
ISO CD 18674-6	Geotechnical investigation and testing -Geotechnical monitoring by field instrumentation — Part 6: Measurement of settlement: Hydraulic settlement systems	Commenting period ended 8 April 2024
CEN prEN, ISO DIS 18674-7	Geotechnical investigation and testing – Geotechnical monitoring by field instrumentation – Part 7: Measurement of strains: Strain gauges	Commenting period ended 15 March 2024
CEN, ISO NP 18674-9	Geotechnical investigation and testing — Geotechnical monitoring by field instrumentation — Part 9: Measurement of displacements by geodetic means	New standard proposed. Approved to proceed January 2024.
CEN FprEN, ISO FDIS 22476-16	Geotechnical investigation and testing – Field testing – Part 16: Borehole shear test	Comment period ended 19 November 2023

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DRAFT ANALYTICAL AND BIOLOGICAL TESTING STANDARDS etc. ***These standards form part of the programme of work of BSI committee EH4***		
ISO CD 7303	Soil quality – Simplified method for oral bioaccessibilty of metal(loids) in soils *Will complement BS ISO 17924 – see also NWIP 8259*	BSI Comment period ended 8 April 2023 A further validation study was completed in March 2024.
ISO DIS 8259	Soil quality – Bioaccessibility of organic and inorganic pollutants from contaminated soil and soil-like material *Based on DIN 19738. Will complement BS ISO 17924 – see also NWIP 7303*	BSI Comment period ended 31 August 2023. Proceeding to FDIS.
ISO DIS 11074	Soil quality – Vocabulary	December 2023 – Proceeding to FDIS
ISO CD 11265	Environmental solid matrices – Determination of the specific electrical conductivity *(Proposal with CEN TC444 to merge with CEN/TS 15937:2013 awaiting approval).*	Proceeding to DIS (November 2023).
ISO FDIS 11267 CEN FprEN 11267	Soil quality – Inhibition of reproduction of Collemba (Folsomia candida) by soil contamination *(will replace BS EN ISO 11267:2014)*	BSI comment period ended 17 June 2023
ISO DIS 11464	Sludge, treated biowaste, soil and waste – Determination of dry residue or water content and calculation of the dry matter fraction on a mass basis *(Merger of ISO 11464 with EN 12889 & EN 15934)*	
ISO CD 13196.2 CEN prEN 13196	Soil quality – Screening soils for selected elements by energy dispersive X-ray fluorescence spectrometry using a handheld or portable instrument *(Revision of BS EN ISO 13196:2013)*	BSI comment period ended 7 March 2024
ISO DIS 13536	Soil quality – Determination of the potential cation exchange capacity and exchangeable cations using barium chloride solution buffered at pH = 8.1	Comment period ended 11 February 2024
ISO DIS 15192 CEN prEN 15192	Soil and waste – Determination of chromium (VI) in solid material by alkaline digestion and ion chromatography with spectrometric detection *Will replace ISO 15192:2010*	Comment period ended 21 February 2024

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CEN prEN, ISO CD 16965	Environmental solid matrices – Determination of elements using inductively coupled plasma spectrometry (ICP-MS) *(will supersede BS EN ISO 16965:2018))*	Comment period ended 14 November 2023
ISO DIS 17126	Soil quality – Determination of the effects of pollutants on soil flora – Screening test for emergence of lettuce seedlings (*Lactuca sativa* L.) *Will replace ISO 17126:2005*	Comment period ended 29 September2023
NWIP ISO 17505	*Adoption of:* [BS] EN 17505:2023 Soil and waste characterization – Temperature dependent differentiation of total carbon (TOC400, ROC, TIC900) *as an ISO standard*	
ISO FDIS 18187	Soil quality – Contact test for solid samples using the dehydrogenase activity of *Arthrobacter globiformis* *Will replace [BS] ISO 18187:2016*	Comment period ended 31 March
ISO CD 18227	Environmental soil matrices – Determination of elemental composition by X-ray fluorescence spectrometry *Includes merger of ISO 18277 and EN 15309*	Comment period ended 6 November 2023. Proceeding to DIS (March 2024)
ISO DIS 18386	Soil quality – Screening method for soil temperature – Measurement by IR thermometer	Comment period ends 19 May 2024
ISO CD 18718	Assessment of soil functions and related ecosystem services: definitions, descriptions and conceptual framework	Comment period ended 9 September 2023
ISO CD 18721	Assessment of soil functions: indicators and methods	Comment period ended 9 September 2023
ISO CD 19254	Simultaneous determination of multi-class pesticide residues in soil using GC-MS/MS and LC-MS/MS analysis	Comment period ended 9 March 2024
ISO CEN NP 21251	Soil quality - Guidance for estimating organic carbon stocks according to their biogeochemical stability or residence time	Approved to proceed October 2023

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ISO FDIS 23611-2 CEN FprEN 23611-2	Soil quality -Sampling of soil invertebrates - Part 2: Sampling and extraction of micro-arthropods (Collembola and Acarina)	Comment period on FprEn ends 17 March 2024
ISO DIS 23611-5	Soil quality — Sampling of soil invertebrates — Part 5: Sampling and extraction of soil macro-invertebrates	Comment period ended 21 July 2023
ISO DIS 24212 CEN prEN 24212	Remediation techniques applied at contaminated sites	Comment period ended 8 June 2023

NEW WORK ITEM PROPOSALS ***SUBJECT TO APPROVAL BY CEN TC444 and/or ISO TC190***		
CEN NWIP TS 17883	Environmental characterization of leachates from waste and soil using reproductive and toxicological gene expression in *Daphnia magna*	CEN TS17883:2022 requires technical changes. Comments on NWIP ended 12 April 2023
ISO & CEN WI 21744	Environmental solid matrices – Guidance for sample pretreatment *Will replace several CEN & ISO standards.*	Circulated for comment to relevant CEN TC444 and ISO TC190 Working Groups on 19 January 2024.
ISO NP TS 25008-1	Soil quality — Measurement of sublethal effects of pollutants on soil flora — Part 1: Part 1: Physiological parameters for stress evaluation	Comment period ended 6 March 2024
ISO/NP TS 25008-2	Soil quality — Measurement of sublethal effects of pollutants on soil flora — Part 2: Antioxidant defence enzymes activities	Comment period ended 7 March 2024
ISO WD XXXXX	Determination of inorganic arsenic species in soil and soil-like materials	Project initiated March 2024

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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 produced by CEN TC444.

BSI EH4 shadows ISO (International Organization for Standardization) Technical Committee *TC 190 Soil Quality* and *CEN TC444* (*Environmental characterization of solid matrices*). CEN is the European standards organisation.

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

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. 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.

Member organisations of EH4 include:

> Association of Geotechnical and Geoenvironmental Specialists (AGS), 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 Environmental Sciences, National House Building Council (NHBC), Royal Society of Biology, Society of Brownfield Risk Assessment (SOBRA), Society of Chemical Industry (SCI), the James Hutton Institute, Water UK, Yorkshire & Lincolnshire Pollution Advisory Group.

Note (03.09.23): *A number of the organisations listed above are currently unrepresented on EH/4 as a result of replacement representatives not being named by the organisations concerned.*

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