

The replacement of BS1377 has begun!

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WHY DO WE NEED TO REPLACE BS1377?

BS1377 is a high quality document that has served the UK well since 1948, and many other countries have used it as the basis for their National Standards,

BS1377 was last updated in 1990, and refers to 25-plus year old technology,

Our knowledge of how best to perform some tests has moved on,

BS1377 is not written complying with the current thinking on the content and style of Standards.

WHY DO WE NEED TO REPLACE BS1377?

We should all be using BS EN 1997-1 & -BS EN 1997-2 (“Eurocode 7”).

Lab testing is an integral part of EC7: need our lab testing to comply with EC7 requirements.

Part of the Europe-wide process of harmonising Standards to remove trade barriers.

Intention is to replace all the existing European National Standards for these tests, e.g. BS1377, NF, DIN ...

ISO has no equivalent Standards, so will adopt them simultaneously.

WHAT IS REPLACING BS1377?

BS EN ISO 17892 which will consist of an initial twelve geotechnical laboratory test methods:

Part 1 – Water content test

Part 2 – Bulk density tests

Part 3 – Particle density tests

Part 4 – Particle size distribution tests

Part 5 – Incremental oedometer tests

Part 6 – Fall-cone test

WHAT IS REPLACING BS1377?

BS EN ISO 17892 which will consist of an initial twelve geotechnical laboratory test methods:

Part 7 – UCS test

Part 8 – UU “quick” triaxial test

Part 9 – Consolidated triaxial tests in compression

Part 10 – Shear-box and ring-shear tests

Part 11 – Permeability tests

Part 12 – Plastic and liquid limit tests

WHERE HAS BS EN ISO 17892 COME FROM?

CEN identified an urgent need for a set of European testing methods when EC7 was being drafted.

CEN (and ISO) adopted a set of methods closely based on work by ETC/5 in the late 1990s.

These were published in 2004 as EN ISO TS/17892.

Technical Specifications are not Standards, hence they are optional rather than mandatory.

WHY DON'T WE ADOPT EN ISO TS/17892?

The UK has chosen not to adopt them as:

- there was no public consultation on the content of the TS documents,
- there are no calibration requirements in these TS documents,
- the TS documents are poorly translated and edited.

However Denmark and Ireland have adopted them as their National Standards.

CEN TC341 appointed a Working Group (WG6) in 2009 to convert the TS documents into full Standards.

HOW DOES A METHOD BECOME A STANDARD?

A method needs wide-spread support from CEN or ISO member countries, before it can become a Standard.

CEN (EU plus Norway and Switzerland) has a qualified majority voting system with the National Standards Body casting the vote on behalf of each country.

Conflicting National Standards must be withdrawn within 6 months of publication of an EN.

CEN member countries cannot opt out.

CEN TC341 WORKING GROUP 6:

UK Convenor (Chairman) and UK Technical Editor.

Expert Members from:

Belgium

Norway

Finland

Portugal

France

Spain

Germany

Sweden

Greece

Switzerland

Netherlands

UK

Japan (ISO TC182 observers).

CEN TC341 WG6 – WORKING PRINCIPLES:

Re-writing the TS documents to:

- focus on existing best practice / fit for purpose,
- be inclusive of as many existing working practices as possible, in order to minimise changes for any lab,
- focus on the requirements, rather the means to achieve them,
- be careful in the use of “shall”, “should” and “may”, and write in simple plain English, for easy translation,
- complete by the end of 2017 ahead of the planned 2020 revision of EC 7.

BS EN ISO 17892 – WHAT STAGE ARE WE AT?

BS EN ISO 17892-1 (Water content) and
BS EN ISO 17892-2 (Bulk density)

were both published by BSI on 31st December 2014,
and by e.g. NF, DIN etc by 30th June.

On the same day, these superseded:

BS1377-2:1990 Clause 3.2 (Moisture content) and
BS1377-2:1990 Clauses 7.1 to 7.4 (Density)

i.e. these two BS1377 tests no longer exist!

Some labs already accredited to the two new Standards.

BS EN ISO 17892 – WHAT STAGE ARE WE AT?

BS EN ISO 17892-3 (Particle density) has been:

- out for public comment (summer 2014),
- revised to account for the public comments,
- with CEN and ISO for final Formal Vote.

Voting closes 3rd November.

Translation and approval of proofs will then take ~2 months, hence:

publication is expected around the year end.

It will supersede BS1377-2:1990 Clauses 8.3 and 8.4.

BS EN ISO 17892 – WHAT STAGE ARE WE AT?

BS EN ISO 17892-4 (Particle size distribution) has been:

- out for public comment (summer 2014),
- revised to account for the public comments,
- with CEN and ISO for final Formal Vote.

Voting closes early in January.

Translation and approval of proofs will then take ~2 months, hence:

publication is expected in ~March next year.

It will supersede BS1377-2:1990 Clauses 9.1 to 9.5.

BS EN ISO 17892 – WHAT STAGE ARE WE AT?

BS EN ISO 17892-5 (Incremental oedometer) and
BS EN ISO 17892-6 (Fall-cone):

- were out for public comment (winter 2014/15),
- are being revised to account for the public comments.

These are expected to be submitted to CEN and ISO for final Formal Vote by the year-end, and if approved to be:

published by mid-2016.

The first will supersede BS1377-5:1990 Clauses 3.1 to 3.7. There is no fall-cone test in BS1377.

BS EN ISO 17892 – WHAT STAGE ARE WE AT?

BS EN ISO 17892-7 (UCS test),
BS EN ISO 17892-8 (UU triaxial test),
BS EN ISO 17892-9 (CD/CU triaxial tests),
BS EN ISO 17892-12 (Plasticity Index tests).

Working drafts are being finalised, and are expected to be available for public comment for three months in the first half of 2016, at <http://drafts.bsigroup.com>

expect these four to be published by early 2017.

These will superseded part of BS1377-2, large parts of BS1377-7, and all of BS1377-8.

BS EN ISO 17892 – WHAT STAGE ARE WE AT?

BS EN ISO 17892-10 (Shear-box & Ring-shear tests),
BS EN ISO 17892-11 (Permeability tests)

Not yet started to review the existing TS documents in the Working Group.

Aiming to do so next year, and for them to be out for public comment in early 2017, hence:

expect publication by the end of 2017.

These will supersede large parts of BS1377-5, BS1377-6 and BS1377-7.

WHERE DOES THIS LEAVE BS1377?

- BS1377-1 Minor changes (e.g. balance cal interval).
- BS1377-2 Almost everything will be superseded:
[smc/chalk remains \(3 pages\)](#).
- BS1377-3 No effect.
- BS1377-4 No effect.
- BS1377-5 Incremental Oedometer will be superseded:
[Swell/collapse/dispersions remain \(8 pages\)](#).
- BS1377-6 Txl Perm will be superseded (probably):
[Rowe cell/Txl consol remain \(45 pages\)](#).
- BS1377-7 Most tests will be superseded:
[Lab-vane and UUm remain \(4 pages\)](#).
- BS1377-8 Will be withdrawn in its entirety.
- BS1377-9 No effect.

WHERE DOES THIS LEAVE BS1377?

The new BS EN ISO 17892 series replaces a large proportion of BS1377 in stages to the end of 2017.

BS1377-2, -5, -6, -7 and -8 will reduce from 232 pages of technical text, to 60.

Question – should BS1377 be updated / amended several times in the next ~2 years, as the remaining ten parts of 17892 are published?

If yes, this will be time consuming and expensive!

If no, BS1377 will be very messy for two to three years!

WHAT DOES BSI PROPOSE TO DO WITH BS1377?

Last week BSI Committee B/526/3 agreed to plan to review / revise / restructure BS1377 into:

- BS1377-1 General requirements
- BS1377-2 Geotechnical tests
- BS1377-3 Chemical & electrochemical tests
- BS1377-4 In situ tests

Review will consider whether we need the test at all. Do we still need e.g a Rowe cell or a UUm Standard? And would e.g. BS EN ISO 10390 (Soil pH) be ok for us?

Review can also consider if new tests need adding.

IN CONCLUSION.

The replacement of BS1377 has started. BS1377-2 Clause 3.2 and Clauses 7.1 to 7.4 have gone!

Ten more Standards in the BS EN ISO 17892 series will be published by the end of 2017.

Large parts of BS1377-2, -5, -6 and -7 will be superseded, and BS137-8 will be withdrawn completely.

BS1377 will be substantially revised and restructured over roughly the same time-line (maybe, plus a year!).

We (and UKAS) are going to have fun and games keeping up with the changes!

THANK YOU