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David Norbury  
Engineering Geologist

**N**

# **THE NEW BS5930:2015**

## **What is in it for you?**

**Professor David Norbury**  
**Director - David Norbury Ltd**

# EC7 COVERAGE

- EN 1990
  - Basis of design
- EN 1997-1
  - General Rules
- EN 1997-2
  - Geotechnical Investigation and Testing
- TC 341
  - Test Standards
- TC 288
  - Execution of geotechnical works

# HOW MANY STANDARDS?

TOTAL

Eurocodes	EC 0 - 9	<u>0</u> <u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u> <u>6</u> <u>7</u> <u>8</u> <u>9</u>	
Eurocode 7	Parts 1 - 2	<u>1</u> * <u>2</u> *	2
National Annexes		<u>1</u> <u>2</u>	4
Execution Standards		<u>1</u> * <u>2</u> * <u>3</u> * <u>4</u> <u>5</u> <u>6</u> <u>7</u> <u>8</u> <u>9</u> <u>10</u> <u>11</u> <u>12</u> <u>13</u>	17

## Test Standards

\* = Corr/Amend/ Rev

22475	<u>1</u> <u>2</u> <u>3</u>	20
22476	<u>1</u> <u>2</u> * <u>3</u> * <u>4</u> <u>5</u> <u>6</u> <u>7</u> <u>8</u> <u>9</u> <u>10</u> <u>11</u> <u>12</u> <u>13</u>	33
22477	1 2 3 4 5 6 7 8	41
22282	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u> <u>6</u>	47
17892	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u> <u>6</u> <u>7</u> <u>8</u> <u>9</u> <u>10</u> <u>11</u> <u>12</u>	59
14688	<u>1</u> <u>2</u> <u>3</u>	62

**YES THAT IS 62 – so far**

# STANDARDS TO COME

- 22476-6, 8, 9, 13 SBP, FDP, FV, PLT
  - 22477-1 to 8 Geotechnical structure tests
  - 17892-3 to 12 Laboratory testing
  
  - 22476-15: Measurement of parameters while drilling
  - 18674: Geotechnical monitoring by field instrumentation (6 parts)
  - 17628: Geothermal testing methods for geothermal heat exchanger – Technical principles for execution
- That is a further 28 in the middle distance (and maybe more)
- Significant implementation task

Watch my web site [www.drnorbury.co.uk](http://www.drnorbury.co.uk)

# EFFECT ON BS 5930 AMENDMENTS & REVISIONS

- Initial Amendment 1 2007
  - Section 6 on description
- Amendment 2 2010
  - Dynamic probing
  - Standard Penetration Test
  - Effects of 22475 on sampling and testing

***REVISION*** 2015

***Expected publication mid July 2015***

# 5930 REVISION

- Change of title from 'site' to 'ground' investigations
- Update best practice
- Accommodate EN ISO standards
- New methods of test
- Cut repetition, improve logical flow
- Restructure

# PUBLIC COMMENT

- Dec 2014 – Jan 2015
- Public engagement very good
- Over 1000 comments
  - Hooray – UK industry reacted
  - Ugh – had to address each one in turn
- Comments resolution complete
- Editorial complete

# NEW CONTENTS of 5930

1. Preliminary considerations
2. Desk studies and field reconnaissance\*\*
3. Planning ground investigations
4. Field work
5. Geophysical field investigations\*\*
6. Description of soils and rocks
7. Field tests
8. Field instrumentation\*\*
9. Laboratory tests on samples
10. Reports and interpretation
11. Review during and after construction

# NEW CONTENTS (Annexes)

1. National safety legislation\*\*
2. General information required for desk study
3. Sources of information
4. Notes on field reconnaissance\*\*
5. Detailed information for design and construction
6. GI in ground affected by voids \*
7. Photographic records\*\*
8. Integrated investigations\*\*

- Section 1 –
  - ground model starts here
  - ‘single’ section on safety including CDM 2015
  - personnel led by ‘geotechnical adviser(s)’
  - registration might be advisable
- Section 2
  - Desk study – factual core and interpretative elements
- Section 3 –
  - UT100 and other samplers in context of area ratios

# GENERAL

- Descriptions to be carried out in accordance with BS EN ISO 14688-1, 14688-2 and 14689-1
  - These were implemented into UK practice in 2007
  - They have been incorporated into
    - BS 5930:1999 Amendment 1 (Dec 2007)
    - BS 5930:1999 Amendment 2 (Dec 2010)
  - NB reference to 5930:1999 means Amendment 2
- Know what Standard you are following

# CHANGES TO SECTION 6

## Soil and Rock Description

- Made Ground is now called Anthropogenic Ground
- Descriptive terms provided for description of Relative Density in situ using spade or geological pick
  - Not at front of word order, as second sentence with description of test used and outcome
- Hard fine soils no longer possible
  - these are rock so described using rock strengths

# Changes (2)

- New Flow chart on broad categories
  - See Fig 4.1 in the book
- Changes to Table 7:
  - Relative Density Terms removed
  - Hard fine soils removed
  - Organics removed (see below)
  - Col 10 'Tertiary Constituents' renamed 'Mineralogy'
- Description of shape clarified
  - always Angular towards Rounded

# Changes (3)

- Multiple sentences clarified:
  - First sentence to include quantification of constituents and adjectives for principal fraction
  - Second and other sentences to give adjectives for secondary fractions
- Description of organic soils consolidated in once place together with material ex Table 7 as new sub-section
  - Gyttja now 'removed' as it is not a peat
  - Humus sorted = Topsoil not Peat

# Changes (4)

- Addition of 'slightly calcareous' as a permitted term
- All example Legends, Symbols and example Logs deleted

- Section 8 Instrumentation
- Section 10 -
  - reports = field, GIR, GDR, S&M
  - digital data in accordance with BS8574
- Section 11 ongoing review

# For you to help!

## Existing Documents (EN and BS)

- Tell us if there are technical errors/issues
- Tell us if there are problems
- Tell us if changes are needed – and whether essential or desirable

us = UK Mirror committee (B/526/3)

## Future Documents

- Watch for opportunities to comment, much easier to get changes at the public comment stages

**Don't assume others will do it for you!**

# THANKS to the team

- Myself as Chair
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  - a range of informal contributors
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