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Testing concrete

Part 122: Method for determination of water absorption

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Contents

Summary of pages
This document comprises a front cover, and inside front cover, pages i to iv, pages 1 to 6, an inside back cover and a back cover.

Foreword

Publishing information

This part of BS 1881 is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 July 2011. It was prepared by Subcommittee B/517/30, *Concrete production and testing, under the authority of* Technical Committee B/517, *Concrete and related products*. A list of organizations represented on this committee can be obtained on request to the committee manager.

Supersession

This part of BS 1881 superseded BS 1881-122:1983, which has been withdrawn.

BS 1881-122:2011+A1:2020 supersedes BS 1881-122:2011, which is withdrawn.

Relationship with other publications

BS 1881 contains test methods for concrete currently used in the United Kingdom which are not covered by BS EN 12350, BS EN 12390 or BS EN 12504. Reference is made to the relevant part of BS EN 12350, BS EN 12390 and BS EN 12504 where appropriate. These test methods may be used in conjunction with BS EN 206-1.

BS 1881 is published in the following parts:

- Part 113, *Method for making and curing no-fines cubes*
- Part 119, *Method for determination of compressive strength using portions of beams broken in flexure (equivalent cube method);*
- Part 122, *Method for determination of water absorption*;
- Part 124, *Methods for analysis of hardened concrete*;
- Part 125, *Method for mixing and sampling fresh concrete in the laboratory*;
- Part 128, *Method for analysis of fresh concrete*;
- Part 129, *Method for the determination of density of partially compacted semi-dry fresh concrete*;
- Part 204, *Recommendations on the use of electromagnetic covermeters*;
- Part 206, *Recommendations for determination of strain in concrete*;
- Part 207, *Recommendations for the assessment of concrete strength by near-to-surface tests*;
- Part 208, *Recommendations for the initial surface absorption of concrete*;
- Part 209, *Recommendations for the measurement of dynamic modulus of elasticity of concrete*; and
- DD 216, *Method for the determination of chloride content of fresh concrete*.

Information about this document

This is a full revision of the standard for determination of water absorption into cores and has been extended to cover the testing of cast specimens.

BS ISO 5725-2 gives further information on the determination of repeatability and reproducibility.

Text introduced or altered by Amendment No. 1 is indicated in the text by tags 〈A1〉 〈A1〉. Minor editorial changes are not tagged.

Hazard warnings

CAUTION. When cement is mixed with water, alkali is released. Take precautions to avoid dry cement entering the eyes, mouth and nose whilst mixing concrete. Prevent skin contact with wet cement or concrete by wearing suitable protective clothing. If cement or concrete enters the eye, immediately wash it out thoroughly with clean water and seek medical treatment without delay. Wash wet concrete off the skin immediately.

Use of this document

It has been assumed in the preparation of this British Standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is "shall".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. "organization" rather than "organisation").

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

1 Scope

This Part of BS 1881 specifies a method for the determination of water absorption of concrete specimens cored from a structure or a precast component.

The method may also be used to determine the water absorption of concrete cast into prisms or cylinders where the surface to volume ratio can be calculated and where no point in the specimen is more than 50 mm from a free surface.

A1 *NOTE 1 The results from different types of specimens should not be compared.* A1

The measured water absorption of the specimen is corrected to that equivalent to a surface to volume ratio of a core 75 mm long with a diameter of 75 mm.

NOTE 2 Absorption values for cast specimens are normally slightly lower than those for a core from the same concrete but the difference can be more significant if the aggregate is absorbent.

A1 *NOTE 3 Cast specimens are normally used in comparative testing between a specified test concrete and an equivalent control.* A1

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 8500-1, *Concrete – Complementary British Standard to BS EN 206-1 – Part 1: Method of specifying and guidance for the specifier*

BS 8500-2, *Concrete – Complementary British Standard to BS EN 206-1 – Part 2: Specification for constituent materials and concrete*

BS EN 206-1, *Concrete – Part 1: Specification, performance, production and conformity*

BS EN 12390-1, *Testing hardened concrete – Part 1: Shape, dimensions and other requirements for specimens and moulds*

BS EN 12390-2, *Testing hardened concrete – Part 2: Making and curing specimens for strength tests*

BS EN 12390-7, *Testing hardened concrete – Part 7: Density of hardened concrete*

BS EN 12504-1, *Testing concrete in structures – Part 1: Cored specimens – Taking, examining and testing in compression*

3 Terms and definitions

For the purposes of this Part of this British Standard the definitions given in BS 8500-1, BS 8500-2 and BS EN 206-1 apply.

4 Apparatus

4.1 *Balance*, capable of weighing specimens up to 5 kg to an accuracy of 0.001 kg. It shall be calibrated on first use and at least annually thereafter, using weights of which the accuracy can be traced to the national standard of mass and shall be checked after relocation or disturbance. A certificate stating the accuracy shall be obtained from the organization carrying out the check.

4.2 *Coring machine*, with a cylindrical bit having an impregnated or set diamond cutting edge for cutting a (75 ±3) mm diameter core.

