

Method for

Determination of chloride content of fresh concrete

Committees responsible for this Draft for Development

The preparation of this Draft for Development was entrusted by Technical Committee B/517, Concrete, to Subcommittee B/517/1, Concrete production and testing, upon which the following bodies were represented:

- Association of Lightweight Aggregate Manufacturers
- Association of Metropolitan Authorities
- British Aggregate Construction Materials Industries
- British Cement Association
- British Civil Engineering Test Equipment Manufacturers' Association
- British Precast Concrete Federation
- British Ready Mixed Concrete Association
- Building Employers' Confederation
- Cement Admixtures Association
- Cementitious Slag Makers' Association
- Concrete Society
- County Surveyors' Society
- Department of the Environment (Building Research Establishment)
- Department of the Environment (Property Services Agency)
- Department of Transport
- Electricity Association
- Federation of Civil Engineering Contractors
- Institute of Concrete Technology
- Institution of Civil Engineers
- Institution of Structural Engineers
- Institution of Water and Environmental Management
- National House-building Council
- Quality Ash Association
- Sand and Gravel Association
- Society of Chemical Industry

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Foreword

This Draft for Development, prepared under the direction of the Technical Committee B/517, Concrete, describes a method for determining the water-soluble chloride ion content of fresh concrete. The need for such a method has arisen from the potential hazards which can be present with concretes containing embedded metals when chloride is present in significant amounts. There may also be a need for a rapid determination of chloride content to be made on site to check particular batches of concrete.

The method therefore includes a relatively simple procedure for extraction into solution of chloride from the concrete test sample, together with simplified volumetric titration procedures and a test strip procedure which may be used in the laboratory or on site for measuring the concentration of chloride in the extracted solution. The extraction procedure can be completed in 10 min to 15 min, and the volumetric titrations require only about 5 min, so that the determination of water-soluble chloride ion in a concrete sample can be completed in 15 min to 20 min.

For this method, knowledge of the water content of the fresh concrete is necessary. The cement content of the concrete also needs to be known if the chloride content is to be calculated relative to cement. These water and cement contents can be calculated from the proportions and density of the fresh concrete mix. Alternatively, the water content can be determined by repeating the extraction and titration procedures for a second sample of the concrete, to which a known amount of sodium chloride has been added. The water content is then calculated from its diluting effect upon the chloride concentration of the solution. Details are given in Annex A. This method of determining the water content is suitable for the purposes of this Draft for Development, but no claim is made for its suitability for assessing conformity with the water : cement ratio specified for the concrete.

This publication is not to be regarded as a British Standard

It is being issued in the Draft for Development series of publications and is of a provisional nature because data on repeatability and reproducibility are not yet available. It should be applied on this provisional basis, so that information and experience of its practical application may be obtained.

A review of this Draft for Development will be carried out not later than 2 years after its publication. Notification of the start of the review period, with a request for the submission of comments from users of this Draft for Development, will be made in an announcement in the appropriate issue of *BSI News*.

According to the replies received, the responsible BSI Committee will judge whether the Draft for Development can be converted into a British Standard or what other action should be taken.

Observations which it is felt should receive attention before the official call for comments will be welcomed.

These should be sent to the Secretary of BSI Technical Committee B/517 at BSI, 2 Park Street, London W1A 2BS.

Summary of pages

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This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.