

Testing aggregates —

Part 102: Methods for sampling

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- Association of Consulting Engineers
- Association of Consulting Scientists
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Foreword

This Part of BS 812 has been prepared under the direction of the Cement, Gypsum, Aggregates and Quarry Products Standards Policy Committee. This is a new edition of this Section of BS 812. This edition introduces technical changes to bring the standard up-to-date but it does not reflect a full review of the standard, which will be undertaken in due course. BS 812-102:1984¹⁾ was a revision of clauses 3, 5 and 6 of BS 812-1:1975 and this edition re-introduces, in the form of an appendix, the description of particle shape and surface texture of aggregates previously contained therein. The remainder of the 1975 edition is being revised and as each of the tests, or collection of related tests is revised it is intended to issue it as a separate Part or Section of this standard.

As part of the new approach to harmonization and standards in Europe, work on testing of aggregates will become part of the programme of work to be undertaken by CEN/TC 154, Aggregates. If the methods described in this standard are to be included in that programme then, under the CEN Regulations, they will become subject to standstill. The standstill is an obligation on the part of members of CEN/CENELEC not to publish during a given period a new or revised national standard which is not completely in line with a European Standard (EN) or a Harmonized Document (HD) in existence or in preparation, or to take any other action which could prejudice the intended harmonization. The next edition of this standard could therefore be a dual British/European (EN) Standard.

It is intended that other British Standards should call up BS 812 test methods as the basis of the compliance. Nevertheless, it is *not* intended that all aggregates should be subjected regularly to all the listed tests. Specifications in other standards should call up only relevant test methods.

Some of the tests in other Parts of this standard are of limited application, and advice on the use of simpler tests is given, for example when they can be used for a preliminary sorting of aggregates to see whether more expensive testing is justified.

Reference should be made to BS 812-101 for general guidance on testing aggregates, precision of test methods and variance arising from sampling errors. A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

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.

¹⁾ Now withdrawn.

0 Introduction

All the stages of sampling leading to the production of proper test portions require skill and care.

Problems of several kinds arise.

- a) Sampling may expose the operator to difficulty and possible danger. Due considerations should be given to the safety of the operator at all times. Sampling within the body of a vehicle or under chutes pose particular difficulties.
- b) Often it is not easy to discern a batch, and thus specifications that rely on this standard should state the maximum quantity that a bulk sample should represent.
- c) Aggregates often segregate by size and, ideally, they should be sampled from large quantities during loading or unloading, but this is often impractical.

The general principles of BS 5309-1 and BS 5309-4 should be followed in drawing up sampling plans. The method set out in clause 5 should be used as the basis for tests for compliance with specifications for aggregates.

Materials finer than 75 μm , used as fillers in bituminous mixtures, should be sampled in accordance with BS 4550-1, using procedures appropriate to the type of delivery to produce a laboratory sample having a mass of at least 7 kg.

The definitions of the several stages in the production of the test portions are given in clause 2. In some cases the bulk sample is inconveniently large to send for testing and has to be reduced. If not, it becomes the laboratory sample.

At the laboratory, the laboratory sample is reduced to the test portions required. If adequate facilities exist at the point of taking the bulk sample, all necessary reduction to the stage of producing the test portions may be done before despatch to the laboratory. If several kinds of tests are to be done, an intermediate stage of reduction is necessary. In other cases, the test portion is reduced directly from the laboratory sample. It is again emphasized that care has to be taken to ensure that the test portions are representative of the bulk sample.

1 Scope

This Part of BS 812 describes methods for obtaining samples of aggregates of the quantity required for carrying out testing in accordance with other Parts of BS 812. The method to be used for recording the nominal description of materials sampled is also given.

NOTE The titles of the publications referred to in this standard are listed on the inside back cover.

2 Definitions

For the purposes of this British Standard the definitions of petrological terms in BS 6100-5.2 apply (see also Appendix A) together with the following.

2.1

batch

a definite quantity of some commodity manufactured or produced under conditions which are presumed uniform

NOTE With a continuous process the quantity produced during a specified period should be treated as a batch.

2.2

sampling increment

a quantity of material taken at one time from a larger body of material

NOTE When sampling aggregates, the material taken by a single operation of the scoop should be treated as a sampling increment.

2.3

bulk sample

an aggregation of the sampling increments

2.4

laboratory sample

a sample intended for laboratory inspection or testing

2.5

test portion

the material used as a whole in testing or inspection

NOTE When sampling a batch of aggregates, the aggregation of the sampling increments yields the bulk sample. If the bulk sample is of an appropriate size it is sent to the laboratory as a laboratory sample, otherwise it is reduced by a sample reduction process as described in clause 6 to the laboratory sample. At the laboratory, the laboratory sample is reduced by one or more reduction operations to the quantity required by a particular test method; the quantity of material produced at the final stage of sample reduction is referred to as the test portion. A particular test method may then require several specimens to be made from a test portion.

3 Principle

Unless an explicit statement to the contrary is made in other Parts of this standard, the aim is to obtain a test portion that is representative of the average quality of the batch.

4 Apparatus

4.1 *A small scoop*, to hold a volume of at least 1 L (i.e. about 1.5 kg of aggregate of normal density). This scoop is used for sampling aggregates of nominal sizes less than 5 mm.