

**Tests for filler aggregate used in bituminous mixtures -
Part 1: Delta ring and ball test**

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 13179-1:2013 sisaldab Euroopa standardi EN 13179-1:2013 ingliskeelset teksti.	This Estonian standard EVS-EN 13179-1:2013 consists of the English text of the European standard EN 13179-1:2013.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 10.07.2013.	Date of Availability of the European standard is 10.07.2013.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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English Version

Tests for filler aggregate used in bituminous mixtures - Part 1: Delta ring and ball test

Essais sur les fillers utilisés dans les mélanges bitumineux
- Partie 1: Essai bille-anneau

Prüfverfahren für mineralische Füller in bitumenhaltigen
Mischungen - Teil 1: Delta-Ring- und Kugel-Verfahren

This European Standard was approved by CEN on 30 May 2013.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Principle	5
5 Apparatus	5
6 Preparation of test portion	5
7 Procedure	6
8 Calculation and expression of results	7
9 Test report	7
9.1 Required data	7
9.2 Optional data	7

Foreword

This document (EN 13179-1:2013) has been prepared by Technical Committee CEN/TC 154 "Aggregates", the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2014, and conflicting national standards shall be withdrawn at the latest by January 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13179-1:2000.

EN 13179-1:2013 includes the following significant technical change with respect to EN 13179-1:2000:

Clause 7 has been completed by the following sentence: "For some types of filler, the stiffening effect may make the mixture of filler and bitumen so stiff that a homogeneous mixture cannot be obtained by stirring for the specified time. If a homogenous mixture cannot be obtained, the test shall be stopped. The result shall be recorded (9.1 (b)) as "greater than 25 °C".

The other part of EN 13179 are:

Part 2: Bitumen number.

This standard forms part of series of tests for bituminous bound filler aggregates.

Test methods for other properties of aggregates will be covered by parts of the following European Standards:

EN 932, *Tests for general properties of aggregates*

EN 933, *Tests for geometrical properties of aggregates*

EN 1097, *Tests for mechanical and physical properties of aggregates*

EN 1367, *Tests for thermal and weathering properties of aggregates*

EN 1744, *Tests for chemical properties of aggregates*

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the procedure used to determine the stiffening effect of filler aggregate when mixed with bitumen.

2 Normative references

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

EN 932-2, *Tests for general properties of aggregates — Part 2: Methods for reducing laboratory samples*

EN 932-5, *Tests for general properties of aggregates — Part 5: Common equipment and calibration*

EN 1097-7, *Tests for mechanical and physical properties of aggregates — Part 7: Determination of the particle density of filler — Pyknometer method*

EN 1427, *Bitumen and bituminous binders — Determination of the softening point — Ring and Ball method*

EN 12591, *Bitumen and bituminous binders — Specifications for paving grade bitumens*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

delta ring and ball

increase of the softening point of a bitumen/filler aggregate mixture in a composition of 37,5 volume parts of filler aggregate and 62,5 volume parts of bitumen, related to the softening point of the bitumen used in that mixture

3.2

constant mass

mass determined by successive weighings performed at least 1 h apart and not differing by more than 0,1 %

Note 1 to entry: In many cases constant mass can be achieved after a test portion has been dried for a pre-determined period in a specified oven at (110 ± 5) °C. Test laboratories can determine the time required to achieve constant mass for specific types and sizes of sample dependent upon the drying capacity of the oven used.

3.3

laboratory sample

reduced sample derived from a bulk sample for laboratory testing

3.4

test portion

sample used as a whole in a single test