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Bitumen and bituminous binders — Determination of breaking behaviour

Part 1: Determination of breaking value of cationic bituminous emulsions, mineral filler method

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National foreword

This British Standard is the UK implementation of EN 13075-1:2016. It supersedes BS EN 13075-1:2009/BS 2000-494:2009 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PTI/13, Petroleum Testing and Terminology.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Bitumen and bituminous binders - Determination of breaking behaviour - Part 1: Determination of breaking value of cationic bituminous emulsions, mineral filler method

Bitumes et liants bitumineux - Détermination du comportement à la rupture - Partie 1 : Détermination de l'indice de rupture des émulsions cationiques de bitume, méthode des fines minérales

Bitumen und bitumenhaltige Bindemittel - Bestimmung des Brechverhaltens - Teil 1: Bestimmung des Brechwertes kationischer Bitumenemulsionen, Verfahren mit Feinmineralstoff

This European Standard was approved by CEN on 27 August 2016.

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European foreword

This document (EN 13075-1:2016) has been prepared by Technical Committee CEN/TC 336 "Bituminous binders", the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by May 2017, and conflicting national standards shall be withdrawn at the latest by May 2017.

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

This document supersedes EN 13075-1:2009.

In comparison with EN 13075-1:2009, the following significant changes have been made:

— Clause 5 : three reference fillers (Forshammer, Sikaisol and Caolin Q92) may be used;

— Subclauses 6.4.3 and 6.4.4: calibration range of the filler feeder and accuracy requirements for the timer are extended so as to cover the case of slow breaking emulsions;

— Subclause 6.4.8 is discarded since this clause is not called by the test procedure (Clause 8) and since requirements on temperature control are already stated in 6.4.1 (oven) and 6.4.6 (temperature bath or climatic chamber);

— Subclauses 8.2 and 8.3: more accurate and more complete description of the test procedure. Calculation and reporting (Clause 12) of the actual filler feeding rate;

— Clause 9: New factors for the conversion of measured breaking values into "Forshammer equivalents". The conversion factors for Sikaisol and Caolin Q92 have been established from an extensive Round Robin test program conducted by TC336/WG2 in 2014 (see bibliographic reference N°2);

— Subclause 11.2: A value for Reproducibility is now stated, as an outcome of the TC336/WG2 Round Robin;

— Annex A: more complete (e.g. particle size distribution envelopes) and more homogeneous description of the three reference fillers.

EN 13075 consists of the following parts under the general title "*Bitumen and bituminous binders – Determination of breaking behaviour":*

— *Part 1: Determination of breaking value of cationic bituminous emulsions, mineral filler method*

— *Part 2: Determination of fines mixing time of cationic bituminous emulsions*

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.

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1 Scope

This European Standard specifies a method for the determination of the breaking value of cationic bituminous emulsions.

WARNING — The use of this European Standard may involve hazardous materials, operations and equipment. This European Standard does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this European Standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

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 58, *Bitumen and bituminous binders - Sampling bituminous binders*

EN 12594, *Bitumen and bituminous binders - Preparation of test samples*

3 Terms and definitions

For the purposes of this document, the following term and definition applies.

3.1
breaking value "*BV*"
dimensionless number corresponding to the mass of reference filler, in grams, needed to coagulate 100 g of bitumen emulsion

4 Principle

A reference filler is added at a uniform rate to a specified quantity of stirred cationic bitumen emulsion. When the emulsion has broken completely, the mass of added filler is determined by weighing. The mass of filler (in grams) multiplied by 100 and divided by the mass of emulsion (in grams) is the breaking value.

NOTE The cationic or anionic nature of an emulsion can be determined with EN 1430 [1].

5 Reagents and materials

5.1 Reference fillers.

The Forshammer filler[1)], the Sikaisol filler[1)] or the Caolin Q92 filler[1)] shall be used as reference fillers while applying the conversion factors given in Clause 9. The characteristics of these fillers are given in Annex A.

In the event of dispute, the same filler and the same procedure (manual or semi-automatic) shall be used by the testing laboratories.

5.2 Cleaning agents, as used conventionally in laboratories.

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1) This information is given for the convenience of users of this European Standard and does not constitute an endorsement by CEN of the products named. Equivalent products may be used if they can be shown to lead to the same results, or if a correlation between the products has been established.

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