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Bitumen and bituminous binders - Determination of breaking behaviour and immediate adhesivity of cationic bituminous emulsions

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 02/24

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 16346**

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Supersedes CEN/TS 16346:2012

English Version

**Bitumen and bituminous binders - Determination of  
breaking behaviour and immediate adhesivity of cationic  
bituminous emulsions**

Bitumes et liants bitumineux - Détermination du  
comportement à la rupture et de l'adhésivité  
immédiate des émulsions bitumineuses cationiques

Bitumen und bitumenhaltige Bindemittel -  
Bestimmung der Brechzeit und des kurzfristigen  
Haftverhaltens von kationischen Bitumenemulsionen

This European Standard was approved by CEN on 20 November 2023.

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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.



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

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## European foreword

This document (EN 16346:2023) has been prepared by Technical Committee CEN/TC 336 “Bitumens and 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 June 2024, and conflicting national standards shall be withdrawn at the latest by June 2024.

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 CEN/TS 16346:2012.

In comparison with the previous edition, the main technical changes are:

- change of the name of the document, new version does not include the 2/4 aggregate size as the document now allows the assessment of various aggregate sizes;
- instead of defining the amount of emulsion, which is to be mixed with aggregate, the residual binder amount was specified (see 8.2.3.);
- assessment of the breaking behaviour (3.3) is now evaluated via washout water appearance in up to eight beakers (see 8.3.1.) instead of using a slow stream of water;
- immediate adhesivity (3.4) and immediate adhesivity after drying (3.5) are now assessed in a quantitative way instead of using indicative sketches;
- time when the immediate adhesivity (3.4) is assessed is fixed at 10 minutes (see 8.3.1);
- new procedure for evaluating the adhesivity after a certain rest time was introduced. This procedure is named “immediate adhesivity after drying” (3.5);
- aggregate (5.2) and washed out aggregate (see 8.3.1 and 8.4.4) are to be dried until a constant mass (3.6) is reached instead of about a 2 hours drying period;
- new aggregate sizes were introduced (5.1) to have a higher level of versatility;
- the maximum mixing time to obtain the full breaking (3.1) is restricted to 45 seconds (see 8.2.4);
- the possibility to use a camera for depicting the actual state of washout water in beakers was introduced (see 8.3.1 and 8.4.4);
- pictures depicting different results of the assessment of the breaking behaviour (3.3) were included in Clause 9.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North

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Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

## 1 Scope

This document specifies a method for the determination of the breaking and immediate adhesivity behaviour of cationic bituminous emulsions in contact with aggregate. The method applies to emulsions used for surface dressing and similar applications and can be used for formulation as well as for production control purposes.

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

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 58, *Bitumen and bituminous binders — Sampling bituminous binders*

EN 1428, *Bitumen and bituminous binders — Determination of water content in bituminous emulsions — Azeotropic distillation method*

EN 1431, *Bitumen and bituminous binders — Determination of residual binder and oil distillate from bitumen emulsions by distillation*

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

EN 13043, *Aggregates for bituminous mixtures and surface treatments for roads, airfields and other trafficked areas*

EN 16849, *Bitumen and bituminous binders — Determination of water content in bituminous emulsions — Method using a drying balance*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**