SLOVENSKI STANDARD
SIST EN 15626:2009

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Bitumen in bitumenska veziva - Določanje obstojnosti rezanih in fluksiranih bitumenskih veziv s preskusom s potapljanjem v vodo - Metoda z agregatom

Bitumen and bituminous binders - Determination of adhesivity of cut-back and fluxed bituminous binders by water immersion test - Aggregate method

Bitumen und bitumenhaltige Bindemittel — Bestimmung des Haftverhaltens von verschnittenen und gefluxten bitumenhaltigen Bindemitteln für den Straßenbau durch Wasserlagerung — Verfahren mit Gesteinskörnung

Bitumes et liants bitumineux - Détermination de l'adhésivité des liants bitumineux fluidifiés et fluxés par l'essai d'immersion dans l'eau - Méthode utilisant des granulats

Ta slovenski standard je istoveten z: **EN 15626:2009**

ICS:

75.140	Voski, bitumni in drugi naftni proizvodi	Waxes, bituminous materials and other petroleum products
91.100.50	Veziva. Tesnilni materiali	Binders. Sealing materials

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 15626:2009) 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of an identical text or by endorsement, at the latest by September 2009, and conflicting national standards shall be withdrawn at the latest by September 2009.

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1 Scope

This document specifies a method for the determination of the adhesivity of cut-back and fluxed bituminous binders coated onto aggregate when immersed in water.

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

2 Normative references

The following referenced documents are indispensable for the application 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 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 13357, *Bitumen and bituminous binders – Determination of the efflux time of petroleum cut-back and fluxed bitumens*

EN 13702-1, *Bitumen and bituminous binders – Determination of dynamic viscosity of modified bitumen – Part 1: Cone and plate method*

EN 14896, *Bitumen and bituminous binders – Dynamic viscosity of bituminous emulsions, cut-back and fluxed bituminous binders – Rotating spindle viscometer method*

prEN 15322, *Bitumen and bituminous binders – Framework for specifying cut-back and fluxed bituminous binders*

EN ISO 3696, *Water for analytical laboratory use – Specification and test methods (ISO 3696:1987)*

3 Terms and definitions

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

3.1
adhesion
ability of a binder to coat the surface of an aggregate and to remain bonded over time in the presence of water

3.2
adhesivity
qualitative assessment of the measurement of adhesion

3.3
ambient temperature
temperature between 18 °C and 28 °C

4 Principle

The binder is mixed thoroughly with a dry and clean reference aggregate under specified temperature conditions. After specified pre-conditioning procedures depending on the viscosity of the binder, the mixture is immersed in water in a glass container. After a given time under specified conditions, the percentage of the aggregate surface covered with binder is assessed visually.

5 Reagents and materials

5.1 Reference aggregate, as light in colour as possible, or aggregate from a specific job site, which either passes through a sieve having a mesh size of 10 mm and is retained on a sieve having a mesh size of 6,3 mm (sieve sizes belonging to the “basic set plus set 2” sizes specified in EN 13043), or passes through a sieve having a mesh size of 11 mm and is retained on a sieve having a mesh size of 8 mm (sieve sizes belonging to the “basic set plus set 1” sizes specified in EN 13043)

NOTE Each country should define petrographically its own reference aggregates, for instance, in a national informative annex.

5.2 Water, distilled or deionised, conforming to EN ISO 3696, water quality 3.

5.3 Cleaning agents, conventionally used in a laboratory.

6 Apparatus

6.1 Ventilated oven, capable of maintaining a temperature of (60 ± 3) °C.

6.2 Ventilated oven, capable of maintaining a temperature at ± 5 °C for temperatures ranging from 30 °C to 150 °C.

Temperature shall be checked **in the surroundings** of the sample.

6.3 Spatula.

6.4 Heat resistant dishes, diameter approximately 150 mm to 200 mm.

6.5 Stop watch, accurate to at least 1 s over 60 s.

6.6 Two beakers, approximate 400 ml capacity.

6.7 Watch glasses, diameter approximately 100 mm to 150 mm.

6.8 Balance, capable of reading up to 500g, and enabling weighing to ± 1 g.

6.9 Measuring cylinder, 250 ml to 500 ml capacity.

6.10 Thermometers, of adequate range, allowing to measure the specified temperatures with an accuracy of ± 1 °C.

6.11 Heating plate, or any other heating device allowing to maintain temperature without overheating.

7 Sampling

The material under test shall be sampled in accordance with EN 58 and prepared in accordance with EN 12594.

8 Procedure

8.1 Preparation of aggregates and binders

8.1.1 Wash the aggregate (5.1) with water (5.2) and dry it in the ventilated oven (6.2) for a minimum of 12 h at (110 ± 5) °C.

8.1.2 The quantities of aggregates needed for the tests to be carried out under 8.2 and 8.3 shall be weighed into adequate containers by batches of (200 ± 2) g and/or (400 ± 4) g.

Depending on the binder to be tested, bring the aggregates and the dish(es) to be used for the mixing procedure to the temperature indicated in Table 1 and maintain this temperature for about 2 h.

8.1.3 A binder sample of a minimum amount of 200 g shall be prepared in accordance with EN 12594 and brought to the temperature indicated in Table 1. The efflux time shall be determined in accordance with EN 13357 and dynamic viscosity at 60 °C in accordance with EN 14896 or EN 13702-1. Closed containers shall be used and care shall be taken to avoid local overheating and any loss of volatile constituents.

Leave the binder in the oven for the minimum time to ensure that it reaches the temperature given in Table 1.

NOTE Binder formulated with an adhesion improver should be tested under the representative conditions of its use, i.e. after one or several days of storage in a closed container at the typical storage temperature for that binder.

Table 1 — Heating temperatures

Binder	Viscosity classes as specified according to prEN 15322	Heating temperature for the binder and the aggregates °C ± 5 °C
Low viscosity cut -back and fluxed bituminous binders of low viscosity	**Efflux time 4 mm 25 °C**	
	15 s to 25 s	23 (ambient)
	26 s to 50 s	30
	51 s to 100 s	40
	101 s to 200 s	50
	Efflux time 10 mm 25 °C	
	15 s to 50 s	75
	51 s to 150 s	80
	151 s to 300 s	90
	301 s to 500 s	95
	Efflux time 10 mm 40 °C	
	50 s to 100 s	100
	101 s to 200 s	110
	201 s to 400 s	115
	401 s to 500 s	120
High viscosity cut -back and fluxed bituminous binders of high viscosity	**Dynamic viscosity at 60 °C**	
	10 Pa s to 30 Pa s	125
	31 Pa s to 50 Pa s	130
	51 Pa s to 80 Pa s	135
	> 80 Pa s	140