Bitumen and bituminous binders - Determination of the efflux time by the efflux viscometer - Part 2: Cut-back and fluxed bituminous binders

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Bitumen and bituminous binders - Determination of efflux time by the efflux viscometer - Part 2: Cut-back and fluxed bituminous binders

Bitumes et liants bitumineux - Détermination du temps d'écoulement à l'aide d'un viscosimètre à écoulement - Partie 2: Bitumes fluidifiés et fluxés

Bitumen und bitumenhaltige Bindemittel - Bestimmung der Ausflusszeit mittels Ausflussviskosimeter - Teil 2: Verschnittene und gefluxte bitumenhaltige Bindemittel

This European Standard was approved by CEN on 22 January 2011.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Contents

Page

Foreword

This document (EN 12846-2:2011) 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of an identical text or by endorsement, at the latest by September 2011, and conflicting national standards shall be withdrawn at the latest by September 2011.

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 13357:2002.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 89/106/EEC.

This European Standard EN 12846 consists of the following parts under the general title *Bitumen and bituminous binders — Determination of efflux time by the efflux viscometer:*

— *Part 1: Bituminous emulsions*;

— *Part 2: Cut-back and fluxed bituminous binders*.

EN 12846-2 has been created as the result of the merging of EN 12846:2002 and EN 13357:2002 under a single EN 12846 reference (two different parts), since both standards describe very similar procedures with identical equipment. The two different parts have been made as consistent as possible by eliminating all existing minor differences between both methods.

Compared with EN 13357:2002, test temperatures were detailed in the scope, a restriction was added in the principle, tolerances were specified or modified in the apparatus dimensions, details were added in the test procedure and measurements made and the precision data were reviewed.

According to the CEN/CENELEC Internal Regulations, the national standards organizations 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies a method for the determination of the efflux time at 25 °C of petroleum cut-back and fluxed bituminous binders in seconds using an efflux viscometer. Alternative test temperatures are 40 °C, 50 °C and 60 °C.

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 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 13302, *Bitumen and bituminous binders — Determination of dynamic viscosity of bituminous binder using a rotating spindle apparatus*

EN ISO 4788, *Laboratory glassware — Graduated measuring cylinders (ISO 4788:2005)*

3 Terms and definitions

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

3.1
viscosity
internal resistance of a fluid to flow

3.2
efflux time
time needed for a specified volume of a material to flow through a specified orifice at a specified temperature

NOTE The efflux time is an indirect measure for viscosity and is referred to as “pseudo-viscosity”.

4 Principle

The efflux time of a petroleum cut-back or fluxed bituminous binder is determined using an efflux viscometer known as the Standard Tar Viscometer (STV) which determines the time of efflux of a 50 ml sample through a 4 mm or a 10 mm orifice at a specified temperature.

Whatever temperatures or orifice diameters used, the efflux time shall not exceed 600 s. For highly viscous cut-back or fluxed bituminous binders, EN 13302 shall be used.