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Bitumen and bituminous binders - Determination of equi-shear modulus temperature and phase angle using a Dynamic Shear Rheometer (DSR) - BTSV test

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This standard includes the English version of the European Standard.

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English Version

Bitumen and bituminous binders - Determination of equi-shear modulus temperature and phase angle using a Dynamic Shear Rheometer (DSR) - BTSV test

Bitumes et liants bitumineux - Détermination de la température d'équi-module de rigidité et de l'angle de phase à l'aide d'un rhéomètre à cisaillement dynamique (DSR) - Essai BTSV

Bitumen und bitumenhaltige Bindemittel - Bestimmung der Äqui-Schermodultemperatur und des Phasenwinkels im Dynamischen Scherrheometer (DSR) - BTSV-Prüfung

This European Standard was approved by CEN on 13 June 2022.

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

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European foreword

This document (EN 17643:2022) 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of an identical text or by endorsement, at the latest by January 2023, and conflicting national standards shall be withdrawn at the latest by January 2023.

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EN 17643:2022 (E)**1 Scope**

This document specifies the Binder Fast Characterization Test (for short: BTSV test, German: *Bitumen-Typisierung-Schnell-Verfahren*). The test is conducted using a Dynamic Shear Rheometer (DSR). It is used to characterize bitumen and bituminous binders and to assess the deformation behaviour at high service temperatures.

The test procedure described in this document covers the testing of paving grade bitumen or modified bitumen, as fresh (unused) binders, as well as binders after laboratory ageing conditioning (e.g. EN 12607-1, EN 14769), and also binders that have been recovered from asphalt mixtures. The test procedure in accordance with this document is not applicable for bituminous binders with particles larger than 250 µm (e.g. filler material, granulated rubber).

NOTE The test procedure has not been applied on bituminous binders recovered from bitumen emulsions yet.

The test determines the temperature and the associated phase angle at which a bituminous binder exhibits a defined complex shear modulus in stress-controlled oscillation mode at constant frequency and with continuous increase of the test temperature.

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 ensure that regulatory requirements are fulfilled prior to application of this document. This document involves handling of apparatus and binders at very high temperatures. Always wear protective gloves and eyewear when handling hot binders, and avoid contact with any exposed, unprotected skin.

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

EN 12597, *Bitumen and bituminous binders - Terminology*

EN 14770, *Bitumen and bituminous binders - Determination of complex shear modulus and phase angle - Dynamic Shear Rheometer (DSR)*

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