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BSI Standards Publication

# Bituminous mixtures — Test methods

## Part 50: Resistance to scuffing

bsi.

**National foreword**

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# Bituminous mixtures - Test methods - Part 50: Resistance to scuffing

Mélanges bitumineux - Méthodes d'essai - Partie 50: Résistance aux arrachements superficiels

Asphalt - Prüfverfahren - Teil 50: Widerstand gegen Oberflächenverschleiß

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## European foreword

This document (CEN/TS 12697-50:2016) has been prepared by Technical Committee CEN/TC 227 "Road materials", the secretariat of which is held by DIN.

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# 1 Scope

This European Technical Specification specifies a test method for determining the resistance to scuffing of asphalt mixtures which are used in surface layers and are loaded with high shear stresses in road or airfield pavement. These shear stresses occur in the contact area between tyre and pavement surface and can be caused by cornering of the vehicle. Due to these shear stresses, material loss will occur at the surface of these layers. The test is normally performed on asphalt layers with a high amount of air voids (e.g. porous asphalt), but can also be applied on other asphaltic mixtures. Test specimens are used either produced in a laboratory or cut from the pavement.

NOTE The test is developed to determine the resistance to scuffing for noise reducing surface layers where raveling is the normative damage criterion. The test can also be performed on other surface mixtures with a high resistance to permanent deformation. In case a mixture has a low resistance to permanent deformation, rutting can occur during the test. This can influence the test results.

# 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 12697-6, *Bituminous mixtures — Test methods for hot mix asphalt — Part 6: Determination of bulk density of bituminous specimens*

EN 12697-29, *Bituminous mixtures — Test method for hot mix asphalt — Part 29: Determination of the dimensions of a bituminous specimen*

EN 12697-33, *Bituminous mixtures — Test methods for hot mix asphalt — Part 33: Specimen prepared by roller compactor*

# 3 Principle

Laboratory compacted asphalt specimens or asphalt specimens cut from a pavement is fixed in a test facility. In this facility, the asphalt material is loaded simultaneously with both normal and shear stresses. Due to these stresses, material loss will occur from the surface of the slab. This material loss depends on the resistance to scuffing of the tested asphalt mixture: the higher the resistance, the less material will disappear.

To determine the resistance to scuffing, two slabs or (set of) cores shall be tested. The average of both test results is reported as the resistance to scuffing.

In this Technical Specification four different kinds of loading facilities are described:

— The ARTe (the Aachener Raveling Tester);

— The DSD (the Darmstadt Scuffing Device);

— The RSAT (the Rotating Surface Abrasion Test) and

— The Triboroute.