

**Concrete pavements - Part 4: Test methods for the
determination of wear resistance of concrete pavements
to studded tyres**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

**Concrete pavements - Part 4: Test methods for the
determination of wear resistance of concrete pavements to
studded tyres**

Revêtements en béton - Partie 4: Méthodes d'essai pour la
détermination de la résistance à l'usure par abrasion
provoquée par les pneus à crampons des revêtements en
béton

Fahrbahnbefestigungen aus Beton - Teil 4: Prüfverfahren
zur Bestimmung des Widerstandes gegen Verschleiß durch
Spikereifen von Fahrbahnbefestigungen aus Beton

This European Standard was approved by CEN on 9 March 2012.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 13863-4:2012) has been prepared by Technical Committee CEN/TC 227 “Road materials”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by October 2012, and conflicting national standards shall be withdrawn at the latest by October 2012.

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 13863-4:2004.

In comparison with the previous version of the Standard published in 2004, the configuration of the test equipment is now more precisely described.

This European Standard is one of a series concerned with test methods for the functional requirements for concrete pavements:

- EN 13863-1, *Concrete pavements — Part 1: Test method for the determination of the thickness of a concrete pavement by survey method*;
- EN 13863-2, *Concrete pavements — Part 2: Test method for the determination of the bond between two layers*;
- EN 13863-3, *Concrete pavements — Part 3: Test methods for the determination of the thickness of a concrete pavement from cores*;
- EN 13863-4, *Concrete pavements — Part 4: Test methods for the determination of wear resistance of concrete pavements to studded tyres*.

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1 Scope

This European Standard describes a test method for the determination of the wear resistance to studded tyres of specimens either cut from hardened concrete pavements or moulded in laboratory.

NOTE The test method is applicable for the finished concrete (end product testing) and not only for the aggregate as described in EN 1097-9. In the report from Swedish Road and Transport Research Institute (1996), *Ring Analysis of Nordic Road Simulators: Proposal for a common test method for the determination of the wear resistance of concrete pavements*, more information of the methods precision is given (see Bibliography).

Three different configurations of the test equipment are considered in this document, one using truck-wheels and the other two using car-wheels.

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 196-6, *Methods of testing cement — Part 6: Determination of fineness*

EN 197-1, *Cement — Part 1: Composition, specifications and conformity criteria of common cements*

EN 1097-9, *Tests for mechanical and physical properties of aggregate — Part 9: Determination of the resistance to wear by abrasion from studded tyres — Nordic test*

EN 12504-1, *Testing concrete in structures — Part 1: Cored specimens — Testing, examining and testing in compression*

3 Test specimen

The sample shall consist of at least two specimens. Specimens shall conform to the dimensions in Table 1 according to road testing machines used.

Table 1 — Dimension of specimens

Method	Thickness mm	Width mm	Edge-length mm
Method 1 ^a Trapezoid specimens	250	900	$L_1 = 1\,340$ $L_2 = 1\,810$
Method 2 ^a Half trapezoid specimens	40	480	$L_1 = 580$ $L_2 = 680$
Method 3 ^a Segment	90	300	1 760 (middle line length)
^a See example of road testing machines in the paper referred to in Bibliography.			

4 Test equipment

Measuring apparatus to determine depth of rut shall have an accuracy $\pm 0,1$ mm.