



**SLOVENSKI STANDARD**  
**kSIST FprEN 13197:2010**

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**Materiali za označevanje vozišča - Vrtljiva plošča za simulacijo obrabe**

Road marking materials - Turntable wear simulators

Straßenmarkierungsmaterialien - Verschleißsimulator

**Ta slovenski standard je istoveten z: FprEN 13197 rev**

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**ICS:**

93.080.20      Materiali za gradnjo cest      Road construction materials

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English Version

## Road marking materials - Wear simulator Turntable

Produits de marquage routier - Simulateurs d'usure

Straßenmarkierungsmaterialien - Verschleißsimulator

This draft European Standard is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 226.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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## Contents

Foreword.....	3
1 Scope .....	4
2 Normative references .....	4
3 Terms and definitions .....	4
4 Wear simulator facility .....	5
5 Test plates .....	8
6 Sampling .....	9
7 Preparation of samples (application on the test plates).....	9
8 Test operation .....	12
9 Test reports for a road marking system .....	16
Annex A (normative) Determination of no pickup-time in connection with wear simulator test.....	17
Annex B (informative) Example of a separate record of application proceedings.....	19
Annex C (informative) Determination of layer thickness .....	20
Annex D (informative) Determination of the quantity of drop-on materials( consumption ).....	22
Annex E (informative) Examples of test reports .....	23

## Foreword

This document (FprEN 13197:2010) has been prepared by Technical Committee CEN/TC 226 “Road equipment”, the secretariat of which is held by AFNOR.

This document is currently submitted to the Unique Acceptance Procedure.

This document will supersede EN 13197:2001.

The Annex A of this European Standard is normative and Annexes B to E are informative.

This European Standard is one of a package of inter-related European Standards with a common date of withdrawal (dow) fixed on December 2011 (*including the request of an extension for the co-existence period*):

- FprEN 1790, *Road marking materials — Preformed road markings*,
- FprEN 1824, *Road marking materials — Road trials*,
- FprEN 1871, *Road marking materials — Physical properties*,
- FprEN 12802, *Road marking materials — Laboratory methods for identification*,
- FprEN 13197, *Road marking materials — Turntable wear simulators*
- FprEN 13212, *Road marking materials — Requirements for factory production control*,
- FprEN 13459, *Road marking materials — Sampling and testing*.

## FprEN 13197:2010 (E)

### 1 Scope

This document specifies the requirements for wear simulator test for road marking materials intended for use in both permanent and temporary road markings including those with increased retroreflection under wet and rain conditions, without road studs.

It gives description for the equipment and for test plate's characteristics; it also gives description for the test method involving road marking materials application, test conditions during wear test, parameters to be measured, frequency of the measurements and expression of the results as a test report.

This document gives also the requirements to be followed when the test is to be used for CE marking purposes.

### 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 1436, *Road marking materials — Road marking performance for road users*

EN 1824, *Road marking materials — Road trials*

EN 13036-1, *Road and airfield surface characteristics — Test methods — Part 1: Measurement of pavement surface macrotexture depth using a volumetric patch technique*

### 3 Terms and definitions

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

#### 3.1

##### **support angle**

angle between a plane perpendicular to the axle of the loading wheel and the vertical

#### 3.2

##### **steering angle**

angle between a plane perpendicular to the axle of the loading wheel and a plane tangential to the movement of the loaded wheel relative to the test plates

#### 3.3

##### **wheel passages (wp)**

number of loading wheels that have passed over a test plate

#### 3.4

##### **measurement area**

summary of those areas of all the test plates of one tested product that are subject to wheel passages, which makes it possible to determine the required measurements

#### 3.5

##### **control plate**

test plate of a standard material and with a standard road marking material included in each test run for indication of correct procedure

#### 3.6

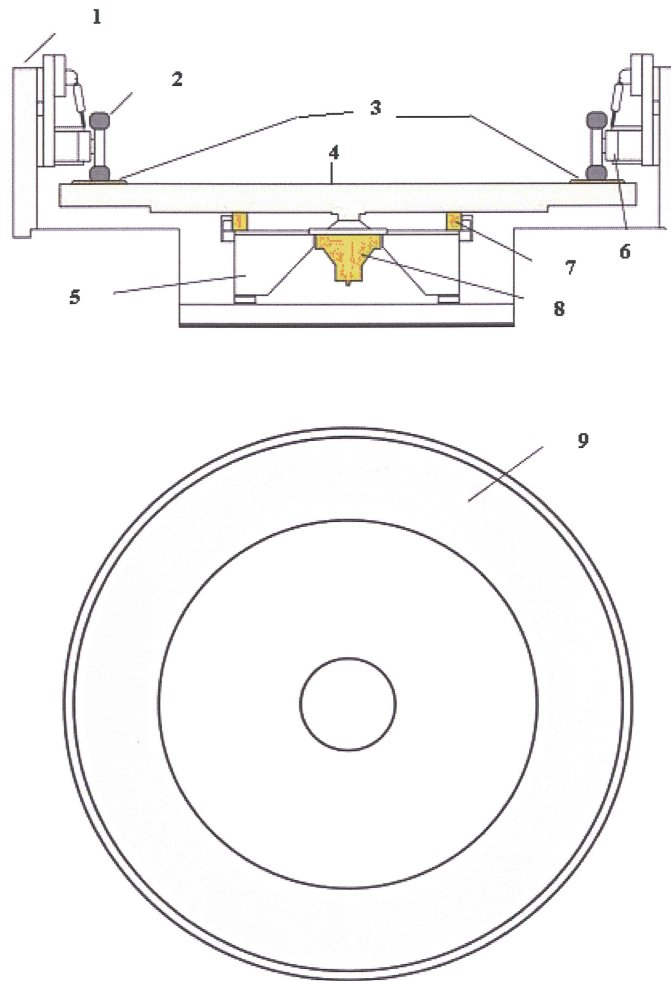
##### **rolling line**

circumferential line characterised by the central line of the contact area of loading tyre

## 4 Wear simulator facility

### 4.1 Turntable

The mobile part of the wear simulator consists of a turntable with an external diameter of 6,4 m comprising a number of running wheels with loaded axles, a number of test plates mounted in a plane and driving mechanism capable of a relative movement, in which the wheel(s) overrun the test plates repeatedly. The rotation can be done in both directions (see Figure 1) at a tangential speed up to a maximum of 120 km/h.



#### Key

- |                              |                             |
|------------------------------|-----------------------------|
| 1 wheel stations             | 6 wheel suspension          |
| 2 test tyre                  | 7 bearing                   |
| 3 road marking samples       | 8 electric/hydraulic engine |
| 4 turntable diameter 6,40    | 9 samples, test surface     |
| 5 turntable bearing assembly |                             |

Figure 1 – Scheme of the wear simulator

## FprEN 13197:2010 (E)

### 4.2 Test plates housing

#### 4.2.1 General

The turntable's rim is provided with a number of housings to fix the test plates. These housings shall comply with the following requirements.

#### 4.2.2 Dimensions

They have to be sufficient to allow the use of the appropriate measurement equipment. The minimum required dimension on the parallel direction to the movement of the loading wheels is 190 mm, although the use of some commercial measuring equipment requires longer distances.

#### 4.2.3 Location

All of them shall be fixed at a position in the rim to provide a rolling-line defined by a diameter of  $585 \text{ cm} \pm 5 \text{ cm}$  measured by the central line of the contact area of tyre. The layout shall guarantee that the location of the test plates has no influence in the results.

#### 4.2.4 Fixation system

The fixation of the test plates allows

- the top of the test plates to be at the same level that the housing external part to avoid create jumping,
- a uniform rolling surface without skidding or vibration and
- an absolute immobility of the test plates on their housings.

### 4.3 Cleaning system

The wear simulator shall have appropriate equipment in order to eliminate effectively and in a few wheel passages the particles that, potentially, could leave the film and to keep the tyres clean and cool; they may be:

- brushes;
- jet air;
- vacuum cleaner;
- water and air atomizers;
- others.

NOTE 1 During the wearing process, some components of the road marking materials (mainly particles of drop-on materials) may leave the film and, if not removed, may adhere the tyres and cause an additional and uncontrolled wear. This effect may be especially serious when the materials under test are thermoplastics and the tyres, if not sufficient cool and clean, may become tacky as consequence of the adherence of thermoplastic binder.

NOTE 2 The test method may also specify additional cleaning possibilities such as to include an initial short cycle with the aim of removing in a first stage the particles badly adhered to the applied road marking and the possibility of allowing the tyres to wheel passages the road marking and the pavement (test plates without road marking material) alternatively.

### 4.4 Water dispenser

The wear simulator shall have a water dispenser able to add water over the test plates.