



# SLOVENSKI STANDARD

## SIST EN 12272-2:2004

01-junij-2004

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### **Površinske prevleke - Preskusne metode - 2. del: Vizualna ocena pomanjkljivosti**

Surface dressing - Test methods - Part 2: Visual assessment of defects

Oberflächenbehandlung - Prüfverfahren - Teil 2: Visuelle Beurteilung von Inhomogenitäten

Enduits superficiels d'usure - Méthodes d'essai - Partie 2: Evaluation visuelle des défauts

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**Ta slovenski standard je istoveten z: EN 12272-2:2003**

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#### **ICS:**

93.080.20      Materiali za gradnjo cest      Road construction materials

**SIST EN 12272-2:2004**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 12272-2**

June 2003

ICS 93.080.20

English version

## Surface dressing - Test methods - Part 2: Visual assessment of defects

Enduits superficiels d'usure - Méthodes d'essai - Partie 2:  
Evaluation visuelle des défauts

Oberflächenbehandlung - Prüfverfahren - Teil 2: Visuelle  
Beurteilung von Inhomogenitäten

This European Standard was approved by CEN on 21 February 2003.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Contents

	Page
Foreword.....	3
1 Scope .....	4
2 Normative references .....	4
3 Terms and definitions.....	4
4 Visual assessment of defects.....	8
4.1 General.....	8
4.2 Qualitative assessment.....	8
4.2.1 Procedure .....	8
4.3 Quantitative assessment.....	9
4.3.1 Fattening up, tracking, bleeding, scabbing, and tearing .....	9
4.3.2 Fretting.....	10
4.3.3 Streaking.....	11
5 Expression of results .....	11
5.1 General.....	11
5.2 Qualitative assessment.....	11
5.3 Quantitative assessment.....	11
5.3.1 Fattening up, tracking and bleeding.....	11
5.3.2 Scabbing and tearing .....	12
5.3.3 Fretting.....	12
5.3.4 Streaking.....	12
6 Test report .....	12
Annex A (normative) Qualitative assessment .....	13
Annex B (normative) Quantitative assessment.....	14
Bibliography .....	15

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SIST-EN 12272-2:2004

[https://standards.iteh.ai/catalog/standards/sist/3cd593b9-735c-42b2-ac8b-](https://standards.iteh.ai/catalog/standards/sist/3cd593b9-735c-42b2-ac8b-47d9887719bc/sist-en-12272-2-2004)

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## Foreword

This document (EN 12272-2:2003) 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 December 2003, and conflicting national standards shall be withdrawn at the latest by December 2005.

This European Standard is one of a series of standards as listed below:

EN 12272-1, *Surface dressing — Test methods — Part 1: Rate of spread and accuracy of spread of binder and chippings*

EN 12272-2, *Surface dressing — Test methods — Part 2: Visual assessment of defects*

EN 12272-3, *Surface dressing — Test method — Part 3: Determination of binder aggregate adhesivity by the Vialit plate shock test method*

Annexes A and B are normative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

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**EN 12272-2:2003 (E)****1 Scope**

This European Standard is applicable to all surface dressings (roads, airfields and other trafficked areas) and specifies qualitative and quantitative methods of the visual assessment of defects of surface dressing.

The results of the qualitative evaluation carried out by visual assessment when specified shall be reported in annex A. This is a rapid practical test and may be specified as the primary test so that if the results are obvious or are without any doubt the more time consuming quantitative test method may be avoided. The quantitative test method shall be carried out when specified and the table of results in annex B reported.

The visual assessment reports for both methods have identical records and thus both may be used to check the specification for visual assessment of defects (prEN 12271-4). The rapid qualitative test methods is dependent on the skill and experience of the operator and therefore the repeatability and the reproducibility values will not be as precise, but the convenience of the method and lack of disruption to traffic will ensure its use.

The national application document may state whether either or both or sequentially the qualitative and quantitative tests are to be used and may relate this to types of site (for example lightly trafficked roads may not be required to be quantitatively assessed).

The test may be used to evaluate the durability or performance of a surface dressing. For example fretting may indicate poor adhesion of the binder to chippings.

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**2 Normative references**

Not applicable.

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**3 Terms and definitions**

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

**3.1 mosaic**  
arrangement of chippings such that they are in shoulder to shoulder contact and are thus supported laterally

**NOTE** The initial stability of a surface dressing is dependent upon the formation of a close mosaic and the cohesion and adhesion of the binder. Subsequent durability is gained by re-orientation of the chippings by traffic to form a tight mosaic, and sufficient binder to secure the chippings to the existing road surface before the onset of embedment.

**3.2 embedment**  
process whereby chippings are forced into an existing road surface by the action of traffic (see Figure 1) resulting in a reduction of macrotexture with time, which is rapid in the first summer and thereafter stabilises for well designed surface dressings

**NOTE** Factors affecting embedment are

- increased traffic, especially heavy goods vehicles, increases the rate of embedment;
- road hardness: cement concrete, for example, does not allow embedment;
- summer months, when the average road temperature is higher, results in softer roads with less resistance to embedment;
- size of chippings: large chippings reduce the rate of embedment;

- traffic speed: slow traffic experienced on hills and at junctions increases embedment by extending the loading time. Conversely, fast traffic, such as that in the overtaking lane of a dual carriageway, results in less embedment;
- shaded areas: a reduction in average road temperature reduces embedment;

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## EN 12272-2:2003 (E)

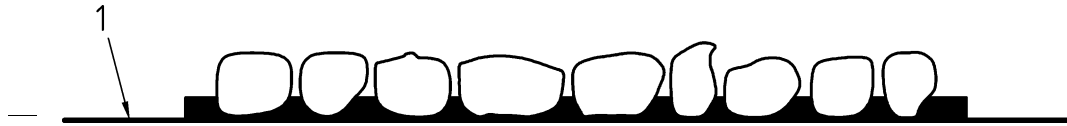


Figure 1a — No embedment (very hard substrate and/or low traffic volume)



Figure 1b — Typical embedment

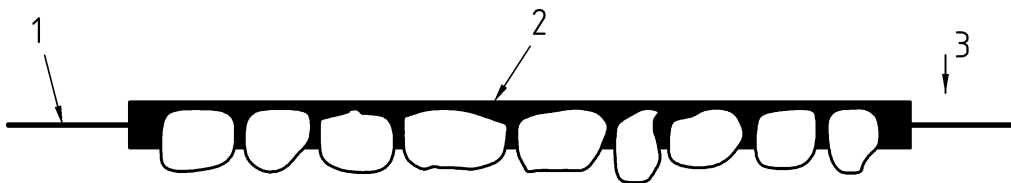


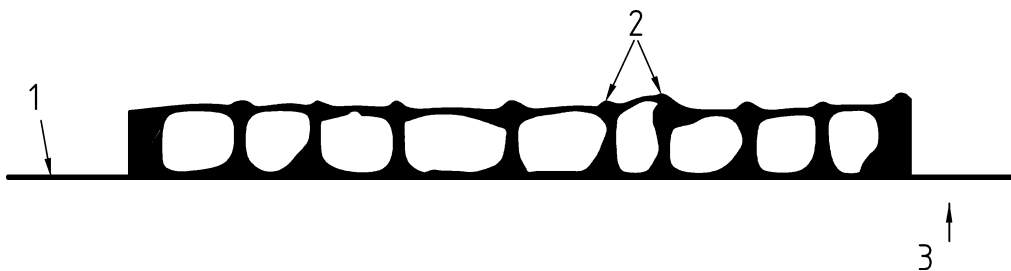
Figure 1c — Fatting up (nearly total embedment soft substrate chipping size too small – poor design)

## Key

- 1 Road surface level before treatment
- 2 Blackened surface (especially in wheel tracks) and loss of texture
- 3 Chippings embedded by traffic

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## Figure 1 - Embedment



## Key

- 1 Road surface level before treatment
- 2 Typical bituminous globules at the surface
- 3 Binder flow

Figure 2 — Bleeding

### 3.3 defect

state of a surface dressing where the mosaic is covered by binder as in the case of fatting up, tracking and bleeding or is disrupted as in the case of scabbing, tearing, fretting or streaking (see 3.4 to 3.10)

NOTE Defects also occur due to poor methods of construction such as inadequate traffic control. Surface dressings are vulnerable to traffic stress in their early life before the binder has sufficient cohesion or emulsion binders have had a chance to break. Turning of the chippings by warm rubber tyres on exposed binder leads to disruption of the mosaic, scabbing and tearing often with an appearance similar to tracking. Missed areas and ridges caused by overlaps and other installation faults such as poor traffic management should in any case be picked up by the contractor's factory production control document.



**3.4****fattening up**

result of almost total embedment (see Figure 1a, b, c)

NOTE The result of fattening up is an undesirable smooth surface (loss of macrotexture) often with excess binder at the surface leading to a very low skid resistance. Fattening up in the wheel tracks is known as tracking and is caused by channelised traffic.

**3.5****tracking**

fattening up in the wheel tracks caused by channelised traffic, sometimes initiated by bleeding or poor construction techniques

**3.6****bleeding**

exudation of bituminous binder from a road surface (see Figure 2)

NOTE 1 The binder rises to the surface through the mosaic of chippings. This is especially noticeable with low viscosity fluxed bituminous binders.

NOTE 2 Bleeding is more likely to occur with binder rich substrates.

NOTE 3 High road temperatures, low viscosity binder, excess binder, and water pressure causing stripping of the binder from underlying materials are the common causes of bleeding.

NOTE 4 The result of bleeding is an undesirable smooth surface (loss of macrotexture) often with excess binder at the surface leading to a very low skid resistance. The effect is similar to fattening up although not restricted to the wheel tracks and the causes are different.

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**3.7****scabbing**

detachment of both binder and chippings after application from the existing road surface

NOTE 1 Scabbing often occurs when the surface of the existing road is contaminated with mud, oil, dust, animal droppings, etc.

NOTE 2 Scabbing also occurs when the existing road surface is too wet for successful adhesion of the binder.

NOTE 3 Scabbing may occur when adhesion of the dressing to the existing road is less than the cohesion of the binder in the mosaic. This is noticeable on roads where bleeding has taken place and traffic has torn away areas of binder and chippings at points of high traffic stress.

**3.8****tearing**

concentrated (localised) loss of chippings from the mosaic of a completed surface dressing or excessive fretting over a continuous area of more than 0,01 m<sup>2</sup>

NOTE 1 Excessive fretting on badly constructed asphalt patch-repairs or areas under trees, is a common problem that may be corrected by careful design.

NOTE 2 Tearing may occur at points of high traffic stress.

NOTE 3 Tearing may occur as a result of snow or ice removal.

**3.9****fretting**

random loss of chippings from the mosaic of a completed surface dressing. Concentrated loss of chippings over a continuous area of more than 0,01 m<sup>2</sup> is not random loss and is considered as tearing

NOTE 1 Fretting occurs mainly where there is insufficient binder to hold the chippings. It is particularly noticeable when the existing road surface varies in macrotexture, porosity or road hardness.