



SLOVENSKI STANDARD

SIST EN 12274-4:2004

01-junij-2004

Obnovitev površine z emulzijo – Preskusne metode - 4. del: Ugotavljanje kohezije zmesi

Slurry surfacing - Test methods - Part 4: Determination of cohesion of the mix

Dünne Asphaltsschicht in Kaltbauweise - Prüfverfahren - Teil 4: Bestimmung der Kohäsion der Mischung

Matériaux bitumineux coulés a froid - Méthode d'essai - Partie 4: Détermination de la cohésion du mélange

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ICS:

93.080.20 Materiali za gradnjo cest Road construction materials

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12274-4

February 2003

ICS 93.080.20

English version

Slurry surfacing - Test methods - Part 4: Determination of cohesion of the mix

Matériaux bitumineux coulés à froid - Méthode d'essai -
Partie 4: Détermination de la cohésion du mélange

Dünne Asphalttschicht in Kaltbauweise - Prüfverfahren - Teil
4: Bestimmung der Kohäsion der Mischung

This European Standard was approved by CEN on 21 November 2002.

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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Foreword

This document (EN 12274-4:2003) 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of an identical text or by endorsement, at the latest by August 2003, and conflicting national standards shall be withdrawn at the latest by December 2005.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 12274-1, *Slurry surfacing – Test methods – Part 1: Sampling for binder extraction.*

EN 12274-2, *Slurry surfacing – Test methods – Part 2: Determination of residual binder content.*

EN 12274-3, *Slurry surfacing – Test methods – Part 3: Consistency.*

EN 12274-4, *Slurry surfacing – Test methods – Part 4: Determination of cohesion of the mix.*

EN 12274-5, *Slurry surfacing – Test methods – Part 5: Determination of wearing.*

EN 12274-6, *Slurry surfacing – Test methods – Part 6: Rate of application.*

EN 12274-7¹, *Slurry surfacing – Test methods – Part 7: Shaking abrasion test in suitability of mineral aggregates to slurry mixes.*

EN 12274-8¹, *Slurry surfacing – Test methods – Part 8: Visual assessment.*

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.

1 Scope

This European Standard describes a test method for determining the minimum cohesion of a slurry surfacing mix which enables the set time and trafficability time to be determined.

This European Standard applies to slurry surfacing to be used in surface layers.

NOTE For some course mixtures the precision is poor due to loss of aggregates comes up, a comment will be made in the report.

¹ In preparation.

EN 12274-4:2003 (E)**2 Normative references**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 12274-3, *Slurry surfacing — Test methods — Part 3: Consistency*.

ISO 48, *Rubber, vulcanized or thermoplastic — Determination of hardness (Hardness between 10 IRHD and 100 IRHD)*.

3 Terms and definitions

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

3.1**set**

end of the non-reversible process in a slurry surfacing when the emulsion coalescence takes place

NOTE 1 The coalescence of an emulsion is the non-reversible phase starting from the beginning of the breaking of the emulsion to the total setting when the bitumen emulsion reverts to bitumen in presence of a mineral.

NOTE 2 After the set of a slurry surfacing

– it is not possible to stir the mixture;

– free emulsion during washing with water cannot be observed;

– an absorbent paper is not stained when pressed slightly onto the surface of the slurry.

3.2**set time**

time elapsed between placing a slurry surfacing and its setting

3.3**trafficability time**

period of time after laying, when the slurry surfacing can accept traffic

3.4**quick setting slurry**

slurry with a set time less than or equal to 30 min

3.5**slow setting slurry**

slurry with a set time more than 30 min

4 Principle

Torque measurements are taken on five samples of the same slurry mix at suitable intervals after casting.

5 Materials

5.1 Coarse aggregates and sand

A sufficient amount of the separated aggregates to be used in the slurry shall be dried in an oven at (110 ± 5) °C to reach constant mass.

NOTE Constant mass is deemed to be achieved when the difference between successive weighings at 30 min intervals does not exceed 0,1 % of the mass.

5.2 Reactive filler

The filler, e.g. cement or hydrated lime, shall be dried in an oven at (110 ± 5) °C to reach a constant mass.

NOTE Constant mass is deemed to be achieved when the difference between successive weighings at 30 min intervals does not exceed 0,1 % of the mass.

5.3 Emulsion

The emulsion shall be manually homogenized using a glass rod.

6 Apparatus

6.1 Apparatus used for preparation of samples

6.1.1 **Oven**, with a minimum capacity of 80 l capable of maintaining a temperature of (110 ± 5) °C.

6.1.2 **Balance**, accurate to 0,1 g.

6.1.3 **Timing device**, accurate to 1 s.

6.1.4 Metal square-shaped moulds, having four trunco-conical holes (see Figure 1) of the dimensions given in Table 1.

Table 1 — Dimensions of moulds

Moulds	Dimensions							
	Width (W) mm	Length (L) mm	Height (H) mm	Hole diameter		Tolerances		
				mm		mm		
				upper D	lower D'	(W),(L)	(H)	(D,D')
Type A	140	140	6,3	60	60,3	±1 %	±1 %	±1 %
Type B	140	140	10,0	60	60,4			
Type C	200	200	13,0	90	90,6			
Type D	250	250	19,0	115	115,8			

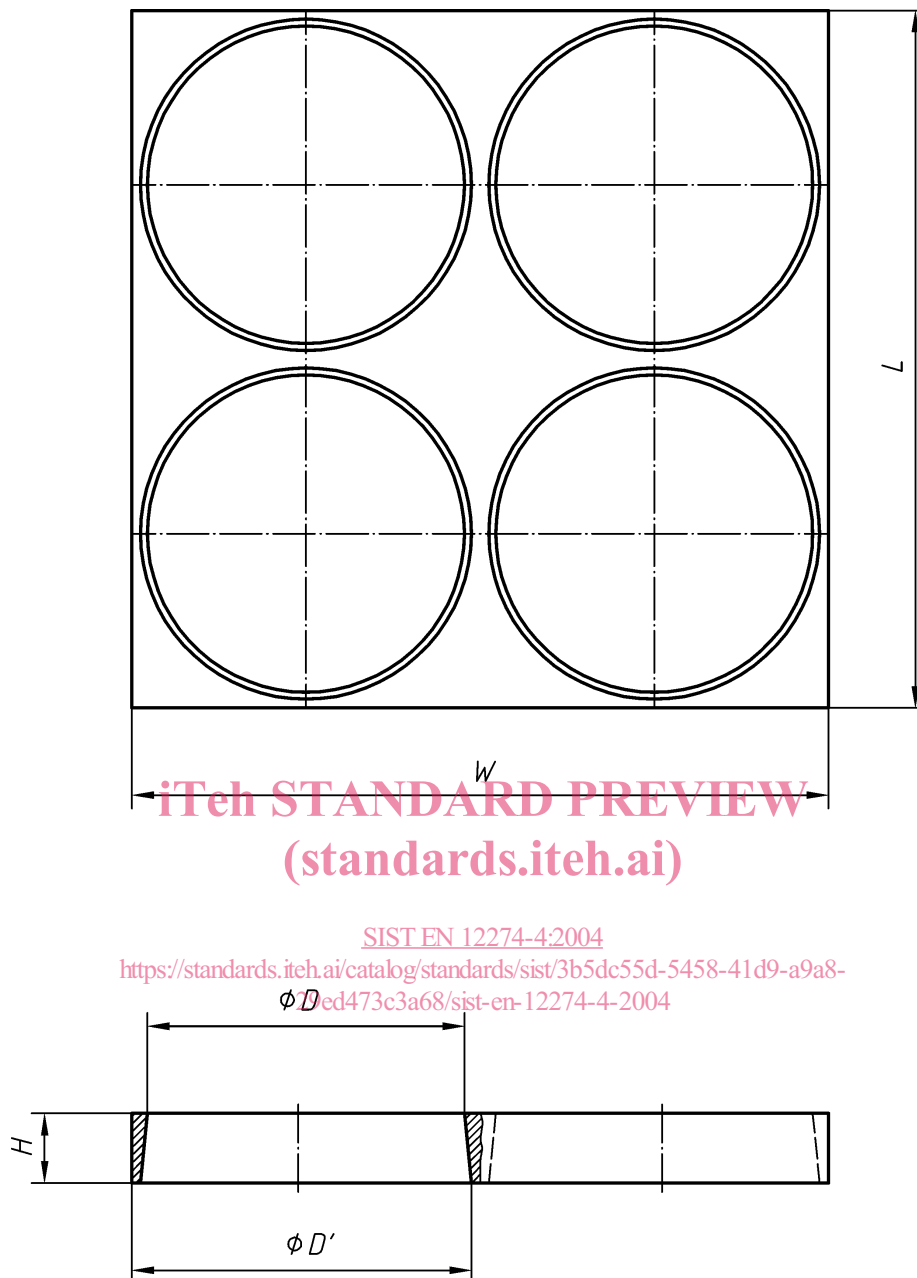
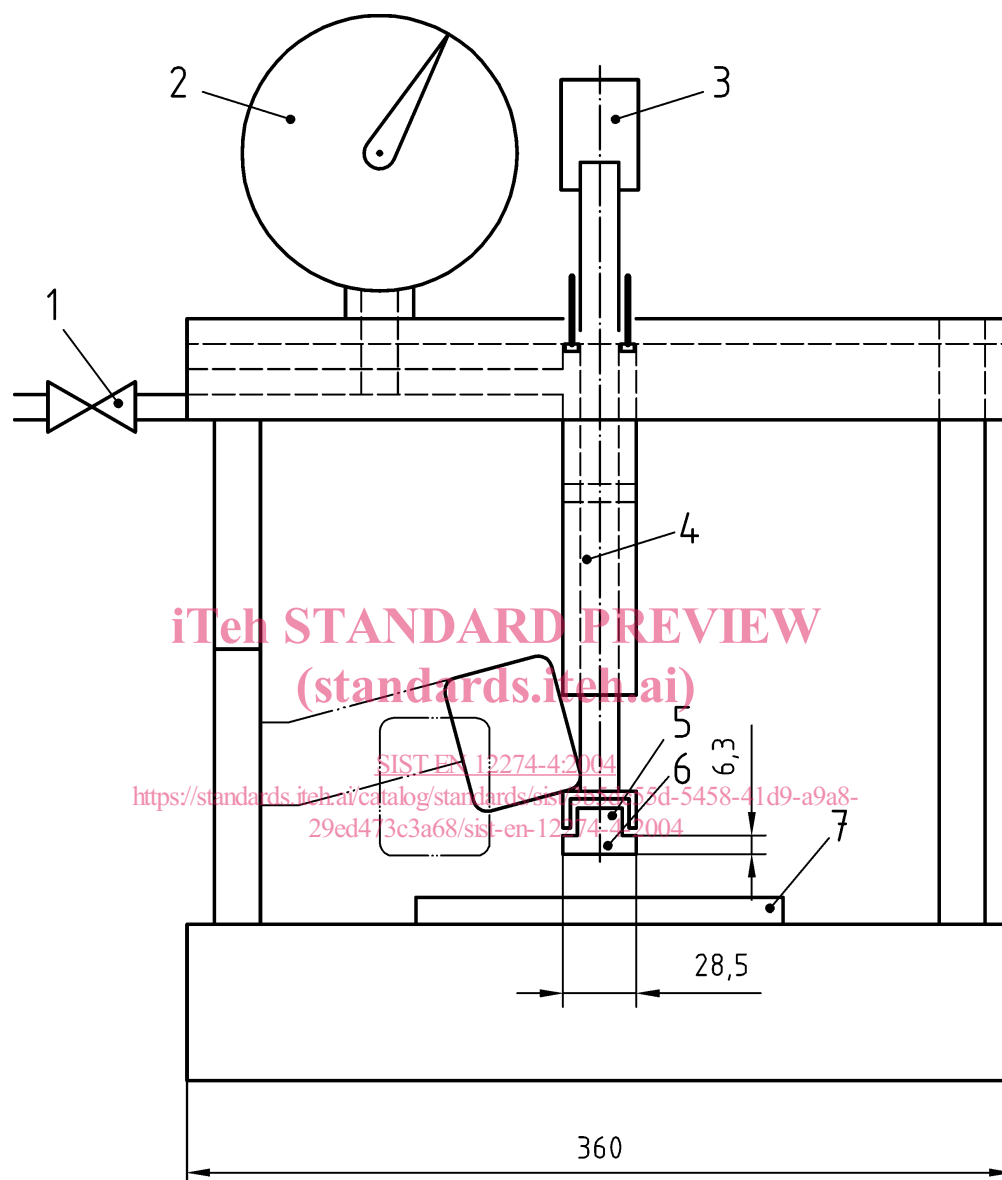


Figure 1 — Metal square-shaped moulds, upper view, side view

Dimensions in millimetres

**Key**

- 1 Control valve
- 2 Air pressure gauge
- 3 Drive socket for straighthandle of torquemeter
- 4 Double acting double endrod pneumatic cylinder
- 5 Rubber foot
- 6 Autotire plug
- 7 Sample

Figure 2 — Metal square-shape moulds, front view