BRITISH STANDARD

BS EN
12274-6:2002

Slurry surfacing — Test methods —

Part 6: Rate of application

The European Standard EN 12274-6:2002 has the status of a British Standard

ICS 93.080.20

National foreword

This British Standard is the official English language version of EN 12274-6:2002.

The UK participation in its preparation was entrusted by Technical Committee B/510, Road materials, to Subcommittee B/510/2, Surface dressing, sprays and slurry surfacing, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;

— monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

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Slurry surfacing - Test methods - Part 6: Rate of application

Matériaux bitumineux coulés à froid - Méthodes d'essai - Partie 6: Taux d'épandage

Dünne Asphaltschicht in Kaltbauweise - Prüfverfahren - Teil 6: Bestimmung der Einbaumasse

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Foreword

This European Standard 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of an identical text or by endorsement, at the latest by July 2002, and conflicting national standards shall be withdrawn at the latest by June 2004.

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 12274-7, *Slurry surfacing – Test methods – Part 7: Shaking abrasion test in suitability of mineral aggregates to slurry mixes*[1]

EN 12274-8, *Slurry surfacing – Test methods – Part 8: Visual assessment*[1]

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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

[1] In preparation.

1 Scope

This European Standard specifies test methods for determination the average rate of application of a slurry surfacing in kilograms per square metre (kg/m²).

The European Standard applies to slurry surfacings for roads, airfields and other trafficked areas.

2 Terms and definitions

For the purposes of this European Standard, the following term and definition apply.

2.1
rate of application, *Y,*
mass of slurry surfacing applied on the covered area divided by this area, measured in kilograms per square metre (kg/m²)

3 Principle

The total mass of slurry surfacing mixture applied to a known area is measured. The mass is determined either by weighing each of the mixture constituents separately (see 4.1) or by weighing the slurry surfacing machine and determining its mass both before and after laying the slurry mixture (see 4.2).

4 Procedure

4.1 Methods based on the separate weighing of the constituents

4.1.1 Weighing on a fixed weighbridge

4.1.1.1 Before laying

Before laying, determine the masses of the various constituents (stone, sand, filler, any additives, bitumen emulsion) by weighing each vehicle delivering materials to the jobsite being considered.

Determine the masses of the materials delivered by each vehicle by deducting the tare from the gross weight of the vehicle as determined on a fixed weighbridge.

Record the following parameters on each weighing ticket:

— gross weight;

— tare of the vehicle;

— material in vehicle;

— date and hour;

— identification of the vehicle.

Record the sum of the masses of all the constituents, *A*, in kilograms (kg).

4.1.1.2 After completion

After finishing the job, weigh the quantity of each of the constituents which has been left on the stockpile.

Record the sum of the masses of the remains of all the constituents, *B*, in kilograms (kg).

Measure the area covered, *C*, in square metres (m^2). Calculate the total quantity of slurry surfacing applied on the covered area, *X,* in kilograms (kg), using the following equation:

$$X = A - B \quad (1)$$

where

X is the mass of slurry surfacing applied on the covered area, expressed in kilograms (kg);

A is the sum of the masses of all the constituents before laying, expressed in kilograms (kg);

B is the sum of the masses of the remains of all the constituents after laying expressed in kilograms (kg).

4.1.2 Weighing by built-in devices in the slurry machine

If the slurry surfacing machine is fitted with continuously operating devices to weigh the aggregates (including mineral additives) and monitor the flow rate of the bitumen emulsion, display and print the masses of the aggregates and bitumen emulsion consumed on a given section of road.

Record the sum of the masses of all the constituents, *A*, in kilograms (kg), the sum of the masses of the remains of all the constituents, *B*, in kilograms (kg), and the area covered, *C*, in square metres (m^2).

Calculate the total quantity of slurry surfacing applied on the covered area, *X,* in kilograms (kg), using the following equation:

$$X = A - B \quad (2)$$

where

X is the mass of slurry surfacing applied on the covered area, expressed in kilograms (kg);

A is the sum of the masses of all the constituents before laying, expressed in kilograms (kg);

B is the sum of the masses of the remains of all the constituents after laying; expressed in kilograms (kg).

4.2 Methods based on weighing the slurry surfacing machine

4.2.1 Procedure for fixed weighing systems

The rate of spread for slurry surfacings can be checked on site by weighing the slurry machine using a fixed system.

Determine the quantity of slurry surfacing materials laid by a machine, *X*, in kilograms (kg), by deducting the mass of the machine after laying from its mass before laying.

Measure the area covered, *C*, in square metres (m^2).

NOTE Water may be or not included in calculating the rate of spread at the discretion of the user. If the water is not included in determining the rate of spread, the water tank of the machine must be filled up before each weighing.

4.2.2 Procedure for portable weighing systems

Check the rate of spread for slurry surfacing check on site by weighing the slurry machine using a portable system. Weighing shall be performed on ground with a resultant slope (crossfall and gradient) smaller than 3 % (under conditions according to the operating manual of the balance).

4.2.2.1 Equipment

The weighing system shall comprise at least two connected plates, so as to be able to weigh each axle at one time. The size of the plates shall be such that the double wheels can pass over them. The minimum capacity of the weighing system shall be 15 000 kg. The limit deviation shall be ± 25 kg for axles up to 2 500 kg, and ± 50 kg for axles up to 15 000 kg. The system shall be connected to a printer recording the mass per axle as well the date and hour.

4.2.2.2 Procedure

Determine the quantity of slurry surfacing materials laid by a machine, *X*, in kilograms (kg), by deducting the mass of the machine after laying from its mass before laying.

Measure the area covered, *C*, in square metres (m^2).

4.3 Calibration

Weighing systems used shall be calibrated and regularly checked by an officially recognised inspection body.

5 Expression of results

Determine the rate of application, *Y*, in kilograms per square metre (kg/m^2) by means of the equation:

$$Y = \frac{X}{C} \tag{3}$$

where

Y is the rate of application, expressed in kilograms per square metre (kg/m^2);

X is the mass of slurry surfacing applied on the covered area, expressed in kilograms (kg);

C is the covered area, expressed in square metres (m^2).

6 Test report

The report shall contain:

a) statement that the test has been performed in accordance with this European Standard;

b) date of application;

c) location;

d) covered area in square metre;

e) total mass of all the constituents supplied to the job site;

f) total mass of all the constituents which are not used for the job;

g) results as calculated in clause 5;

h) name and signature of person conducting test;

i) procedure used (4.1.1,4.1.2 or 4.2);

j) in case of use of the procedure described under 4.2.1, statement that the weighing includes water or not.

Bibliography

[1] ISSA, Recommended Performance Guidelines for Micro-Surfacing Jan. 1991

[2] Normas España NLT-317/87

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