



**SLOVENSKI STANDARD**  
**SIST EN 13286-48:2005**

**01-november-2005**

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Unbound and hydraulically bound mixtures - Part 48: Test method for the determination of degree of pulverisation

Ungebundene und hydraulisch gebundene Gemische - Teil 48: Prüfverfahren zur Bestimmung des Pulverisierungsgrades

Mélanges traités et mélanges non traités aux liants hydrauliques - Partie 48: Méthode d'essai pour la détermination du degré de pulvérisation

**Ta slovenski standard je istoveten z: EN 13286-48:2005**

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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 13286-48**

August 2005

ICS 93.080.20

English version

## Unbound and hydraulically bound mixtures - Part 48: Test method for the determination of degree of pulverisation

Graves traitées aux liants hydrauliques et graves non traitées - Partie 48: Méthode d'essai pour la détermination du degré de pulvérisation

Ungebundene und hydraulisch gebundene Gemische - Teil 48: Prüfverfahren zur Bestimmung des Pulverisierungsgrades

This European Standard was approved by CEN on 27 June 2005.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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

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## Foreword

This European Standard (EN 13286-48:2005) has been prepared by Technical Committee CEN/TC 227 "Road mixtures", 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 February 2006, and conflicting national standards shall be withdrawn at the latest by February 2006.

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

EN 13286-1, *Unbound and hydraulically bound mixtures - Part 1: Test methods for laboratory reference density and water content - Introduction, general requirements and sampling.*

EN 13286-2, *Unbound and hydraulically bound mixtures - Part 2: Test methods for laboratory reference density and water content - Proctor compaction.*

EN 13286-3, *Unbound and hydraulically bound mixtures - Part 3: Test methods for laboratory reference density and water content - Vibrocompression with controlled parameters.*

EN 13286-4, *Unbound and hydraulically bound mixtures - Part 4: Test methods for laboratory reference density and water content - Vibrating hammer.*

EN 13286-5, *Unbound and hydraulically bound mixtures - Part 5: Test methods for laboratory reference density and water content - Vibrating table.*

EN 13286-7, *Unbound and hydraulically bound mixtures - Part 7: Cyclic load triaxial test for unbound mixtures.*

EN 13286-40, *Unbound and hydraulically bound mixtures - Part 40: Test method for the determination of the direct tensile strength of hydraulically bound mixtures.*

EN 13286-41, *Unbound and hydraulically bound mixtures - Part 41: Test method for the determination of the compressive strength of hydraulically bound mixtures.*

EN 13286-42, *Unbound and hydraulically bound mixtures - Part 42: Test method for the determination of the indirect tensile strength of hydraulically bound mixtures.*

EN 13286-43, *Unbound and hydraulically bound mixtures - Part 43: Test method for the determination of the modulus of elasticity of hydraulically bound mixtures.*

EN 13286-44, *Unbound and hydraulically bound mixtures - Part 44: Test methods for binder activity - Determination of alpha coefficient of vitrified blast furnace slag.*

EN 13286-45, *Unbound and hydraulically bound mixtures - Part 45: Test method for the determination of the workability period of hydraulically bound mixtures.*

EN 13286-46, *Unbound and hydraulically bound mixtures - Part 46: Test method for the determination of the moisture condition value.*

EN 13286-47, *Unbound and hydraulically bound mixtures - Part 47: Test method for the determination of California bearing ratio, immediate bearing index and linear swelling.*

EN 13286-48, *Unbound and hydraulically bound mixtures - Part 48: Test method for the determination of degree of pulverisation.*

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EN 13286-49, *Unbound and hydraulically bound mixtures - Part 49: Accelerated swelling test for soil treated by lime and/or hydraulic binder.*

EN 13286-50, *Unbound and hydraulically bound mixtures - Part 50: Method for the manufacture of test specimens of hydraulically bound mixtures using Proctor equipment or vibrating table compaction.*

EN 13286-51, *Unbound and hydraulically bound mixtures - Part 51: Methods for the manufacture of test specimens of hydraulically bound mixtures by vibrating hammer compaction.*

EN 13286-52, *Unbound and hydraulically bound mixtures - Part 52: Method for the manufacture of test specimens of hydraulically bound mixtures using vibrocompression.*

EN 13286-53, *Unbound and hydraulically bound mixtures - Part 53: Methods for the manufacture of test specimens of hydraulically bound mixtures using axial compression.*

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

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## 1 Scope

This European Standard specifies a test method for the determination of the degree of pulverization of cohesive material after mixing with lime and/or hydraulic binder.

## 2 Principle

After mixing and before any compaction, a sample of mixture of known mass is gently shaken on a 5,6 mm sieve, ensuring that the individual lumps of cohesive material are broken as little as possible, and the mass of mixture retained on the sieve is determined. The lumps of mixture retained on the sieve are broken until all particles finer than 5,6 mm pass the sieve. The mass of mixture retained on the sieve is determined. The degree of pulverization is the ratio of the mass passing the sieve before and after breaking the retained lumps.

NOTE The purpose of the test is to measure the effectiveness of mixing and break-down of the cohesive material during mixing.

## 3 Apparatus

- 3.1 **Balance**, of 5 kg minimum capacity, able to measure mass to  $\pm 1$  g.
- 3.2 **5,6 mm test sieve and receiver**, of 300 mm minimum diameter.
- 3.3 **Scoop**, approximately 125 mm diameter  $\times$  200 mm in length, excluding the handle.

## 4 Procedure

Using the scoop take a sample of the un-compacted mixture of approximately 1 kg in mass and weigh to the nearest 1 g ( $m_1$ ).

NOTE It is essential that individual lumps of mixture are not broken down during sampling and sample reduction operations. To avoid breaking-down of the mixture during sampling and sample reduction, it is better to use a sample of the mass required for the test rather than obtain a larger sample and then to reduce this to the required mass by sample reduction.

Spread the sample onto the sieve, taking care not to overload it, and shake it gently. Do not force the mixture through the sieve. Ensure that the lumps of mixture are broken as little as possible. Determine the mass of the mixture retained on the sieve to the nearest 1 g ( $m_2$ ).

Keeping the mixture over the sieve, break any lumps of the mixture retained on the sieve until all individual particles finer than 5,6 mm are separated. Shake the sieve until all the mixture finer than 5,6 mm has passed through it. Determine the mass of the mixture that is still retained on the sieve to the nearest 1 g ( $m_3$ ).

## 5 Calculation and expression of results

5.1 Calculate the degree of pulverization  $p$  from the equation:

$$p = 100 \frac{(m_1 - m_2)}{(m_1 - m_3)} \quad (1)$$

where

$p$  is the degree of pulverization, in percent (%);

$m_1$  is the initial mass of sample, in grams (g);

$m_2$  is the mass of mixture retained on the sieve after initial sieving, in grams (g);

$m_3$  is the mass of mixture retained on the sieve after breaking up the lumps and re-sieving, in grams (g).

5.2 Report the degree of pulverization to the nearest 5 %.

## 6 Test report

The test report shall contain the following information:

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- a) reference to this European Standard, i.e. EN 13286-48;
  - b) type of mixture; [SIST EN 13286-48:2005](https://standards.iteh.ai/catalog/standards/sist/b167ca64-7a14-409b-80e4-c9e3cacc851/sist-en-13286-48-2005)
  - c) origin of the mixture; <https://standards.iteh.ai/catalog/standards/sist/b167ca64-7a14-409b-80e4-c9e3cacc851/sist-en-13286-48-2005>
  - d) degree of pulverisation of the sample to the nearest 5 %;
  - e) any deviations from this European Standard as well as any incidents that could have an effect on the result.