SLOVENSKI STANDARD
SIST ENV 13282:2001

01-februar-2001

Hidravliļ na veziva za ceste - Sestava, zahteve in merila skladnosti

Hydraulic road binders - Composition, specifications and conformity criteria

Hydraulische Tragschichtbinder - Zusammensetzung, Anforderungen und Konformitätskriterien

Liants hydrauliques routiers - Composition, spécifications et critères de conformité

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: **ENV 13282:2000**

SIST ENV 13282:2001
https://standards.iteh.ai/catalog/standards/sist/20422d68-9334-4a46-925e-3609cd126333/sist-env-13282-2001

ICS:

93.080.20 Materiali za gradnjo cest Road construction materials

SIST ENV 13282:2001 **en**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

SIST ENV 13282:2001

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST ENV 13282:2001
https://standards.iteh.ai/catalog/standards/sist/20422d68-9334-4a46-925e-3609cd126333/sist-env-13282-2001

SIST ENV 13282:2001

EUROPEAN PRESTANDARD
PRÉNORME EUROPÉENNE
EUROPÄISCHE VORNORM

ENV 13282

June 2000

ICS 93.080.20

English version

Hydraulic road binders - Composition, specifications and conformity criteria

Liants hydrauliques routiers - Composition, spécifications et critères de conformité

Hydraulische Tragschichtbinder - Zusammensetzung, Anforderungen und Konformitätskriterien

This European Prestandard (ENV) was approved by CEN on 18 February 1999 as a prospective standard for provisional application.

The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into a European Standard.

CEN members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

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

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ENV 13282:2001
https://standards.iteh.ai/catalog/standards/sist/20422d68-9334-4a46-925e-3609cd126333/sist-env-13282-2001

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

© 2000 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No. ENV 13282:2000 E

SIST ENV 13282:2001

Contents

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ENV 13282:2001
https://standards.iteh.ai/catalog/standards/sist/20422d68-9334-4a46-925e-3609cd126333/sist-env-13282-2001

SIST ENV 13282:2001

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 51 "Cement and building limes", the secretariat of which is held by IBN.

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 2000, and conflicting national standards shall be withdrawn at the latest by December 2000.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

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.

0 Introduction

Depending on the local experience and availability of products and materials, different binders are used for roadbases and sub-bases, capping layers, soil stabilization and soil improvement in Europe. These include cements conforming to ENV 197-1, building limes conforming to ENV 459-1 and hydraulic road binders presently defined in existing national standards or technical approvals.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Hydraulic road binders are finished products, produced in a factory and supplied ready for use.

SIST ENV 13282:2001

Certain hydraulic road binders have particular properties relevant to their intended use and these properties are declared by the manufacturer subject to agreement with the user.

Bound mixtures, as well as constituents to be mixed on site (e.g. fly ash, slag, lime ...) fall within the scope of European standards being prepared by CEN/TC227 "Road materials" and are consequently outside the scope of this European standard.

Cements, masonry cements and building limes are also outside the scope of this European standard, as they are defined in specific European standards. However, cements, masonry cements, building limes, and road materials covered by CEN/TC227 may be used in hydraulic road binder production.

1 Scope

This European standard is applicable to hydraulic road binders produced in a factory and supplied ready for use in roadbases, sub-bases, capping layers, and for soil stabilization or soil improvement. It specifies the mechanical, physical and chemical requirements for hydraulic road binders, together with the conformity criteria and evaluation procedures to be applied by the manufacturer.

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

SIST ENV 13282:2001

amendment or revision. For undated references the latest edition of the publication referred to applies.

ENV 197-1:1992	Cement - Composition, specifications and conformity criteria - Part 1 : Common cements
ENV 413-1	Masonry cement - Part 1 : Specification
ENV 459-1	Building lime - Part 1 : Definitions, specifications and conformity criteria
EN 459-2:1994	Building lime - Part 2 : Test methods
EN 196-1:1994	Methods of testing cement - Part 1 : Determination of strength
EN 196-2:1994	Methods of testing cement - Part 2 : Chemical analysis of cement
EN 196-3	Methods of testing cement - Part 3 : Determination of setting time and soundness
EN 196-6:1989	Methods of testing cement - Part 6 : Determination of fineness
EN 196-7	Methods of testing cement - Part 7 : Methods of taking and preparing samples of cement
EN 196-21	Methods of testing cement - Part 21 : Determination of the chloride, carbon dioxide and alkali content of cement.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ENV 13282:2001
https://standards.iteh.ai/catalog/standards/sist/20422d68-9334-4a46-925e-3609cd126333/sist-env-13282-2001

3 Definitions

For the purposes of this European Standard, the following definitions apply :

3.1 autocontrol testing : Continuous testing, by the manufacturer, of hydraulic road binder samples taken at the point(s) of release from the factory/depot.

3.2 control period : Period of time fixed for assessment of a set of autocontrol test results.

3.3 characteristic value : The value of a required mechanical, physical or chemical property having a prescribed probability P_k of not being attained in a hypothetical unlimited test series. This value generally corresponds to a specified fractile of the assumed statistical distribution of the particular property.

3.4 allowable probability of acceptance CR : For a given sampling plan, the probability of acceptance of a hydraulic road binder with a percentage of results outside the characteristic value equal to probability P_k (see 3.3).

3.5 limit value : The value of a mechanical, physical or chemical property which is not exceeded by any single test result.

SIST ENV 13282:2001

4 Hydraulic road binder

A hydraulic binder, when mixed with water, hardens both in the air and under water and remains solid, even under water.

A hydraulic road binder is a factory produced hydraulic binder, supplied ready for use, having properties specifically suitable for road and rail bases and sub-bases, capping layers, soil stabilization and soil improvement.

A hydraulic road binder shall consist of a powder made from a blend of different constituents and statistically homogeneous in composition. A high degree of uniformity in all hydraulic road binder properties shall be obtained through continuous mass production processes.

> NOTE : Continuous production refers to the process, the definition of the product, its composition and properties but does not imply a 24 hour production.

Qualified and skilled personnel and the facilities to test, evaluate and adjust product quality are essential for producing hydraulic road binders included in this European standard.

The manufacturing process and its control shall ensure that the composition of hydraulic road binders is kept within the limits fixed in this European standard.

5 Constituents

iTeh STANDARD PREVIEW
(standards.iteh.ai)

5.1 Main constituents

The main constituents of a hydraulic road binder shall be selected from the following :

SIST ENV 13282:2001
https://standards.iteh.ai/catalog/standards/sist/20422d68-9334-4a46-925e-5609cd126333/sist-env-13282-2001

- constituents which conform to clause 4 of ENV 197-1 : 1992
  - Portland cement clinker (K) ;
  - granulated blastfurnace slag (S) ;
  - pozzolanic materials : natural pozzolanas (P) and thermally activated clays and shales (Q) ;
  - fly ash : siliceous fly ash (V) and calcareous fly ash (W) except that when used as a constituent of hydraulic road binders of classes 5 ; 12,5 ; and 22,5 the loss on ignition of the fly ash shall be 10,0 % or less ;
  - burnt shale (T) ;
  - limestone (L) ;

- limes which conform to ENV 459-1 ;

- unslaked calcareous fly ash (Wa) containing at least 15 % reactive calcium oxyde (CaO), to be used only as a constituent of hydraulic road binders of classes 5 and 12,5.

> NOTE : Cements which conform to ENV 197-1 and masonry cements which conform to ENV 413-1 can be used in hydraulic road binder production providing that their constituents comply with the above requirements.

5.2 Minor additional constituents

Minor additional constituents can be added in a proportion not exceeding 5 % by mass. They are specially selected, inorganic natural mineral materials, inorganic mineral materials derived from the clinker production process or constituents as specified in 5.1 unless they are included as main constituents in the hydraulic road binder.

SIST ENV 13282:2001

Minor additional constituents, after appropriate preparation and on account of their particle size distribution, improve the physical properties of the hydraulic road binder (such as workability or water retention). They can be inert or have slightly hydraulic, latent hydraulic or pozzolanic properties. However, no requirements are set for them in this respect.

Minor additional constituents shall be correctly prepared, i.e. selected, homogenized, dried and comminuted depending on their state of production or delivery. They shall not increase the water demand of the hydraulic road binder appreciably or impair the resistance of the bound mixture to deterioration in any way.

5.3 Calcium sulfate (Cs)

Calcium sulfate, gypsum, hemihydrate or anhydrite (natural or artificial), can be added to the other constituents of the hydraulic road binder during its manufacture.

5.4 Additives

Additives, for the purpose of this European standard, are constituents not covered in 5.1 to 5.3 which are added to improve the manufacture or the properties of the hydraulic road binder. The total quantity of additives should not exceed 1 % by mass of the binder. If it does, the quantity shall be stated on the packaging and/or on the delivery note.

iTeh STANDARD PREVIEW

Additives shall not impair the properties of the hydraulic road binder or those of the bound mixtures.

(standards.iteh.ai)

SIST ENV 13282:2001
https://standards.iteh.ai/catalog/standards/sist/20422d68-9334-4a46-925e-3609cd126333/sist-env-13282-2001

6 Classification

The standard strength of a hydraulic road binder is the compressive strength determined in accordance with EN 196-1 at 28 days.

Four classes of strength are covered in this European standard : class 5, class 12,5, class 22,5 and class 32,5, the minimum standard strength being taken as the criterion of classification.

> NOTE : The strength classes are incorporated to enable the manufacturer to control quality and are not related to performance in bound mixtures.

For strength classes 22,5 and 32,5 a subclass E is defined by a minimum content of Portland cement clinker of 20 % and an additional requirement for strength at 7 days.

7 Requirements

7.1 Mechanical requirements

The compressive strength of hydraulic road binders shall be determined in accordance with EN 196-1, the cement being replaced by the hydraulic road binder.

The prisms shall be produced, stored and tested as specified in EN 196-1, unless otherwise specified below.

SIST ENV 13282:2001

The prisms shall be removed from the mould 24 h after preparation and then stored, pending the test, at a relative humidity of not less than 90 %.

Should it not be possible to remove the prisms from the mould after 24 h, it is permitted to remove them at a later age, and this age shall be stated in the test report.

When using moist air storage boxes the prisms shall not be allowed to come into contact with the water poured into the boxes up to a level of about 10 mm. The lid shall close tightly and any felt seals shall be kept damp.

Hydraulic road binders shall comply with the requirements of table 1.

Table 1 : Mechanical requirements

Strength class	Compressive strength, in MPa		
	at 7 days	at 28 days	
5	--	≥ 5	≤ 15
12,5	--	≥ 12,5	≤ 32,5
22,5	--	≥ 22,5	≤ 42,5
22,5 E	≥ 10,0	≥ 22,5	≤ 42,5
32,5	--	≥ 32,5	≤ 52,5
32,5 E	≥ 16,0	≥ 32,5	≤ 52,5
NOTE 1 : The criterion for assessing the acceptability of an alternative method of compaction (as permitted in EN 196-1) should be that the difference between the averages of the two sets of 20 test batches when tested at 28 days should not exceed 1,5 MPa. The use of the 'D' criterion, as defined in EN 196-1:1994, is not valid. In the event of a dispute the reference method should be used. NOTE 2 : A loading rate of (400 ± 40) N/s should be used when testing specimens of classes 5 and 12,5.			

iTeh STANDARD PREVIEW
(standards.iteh.ai)

7.2 Physical requirements

7.2.1 Fineness

The fineness of a hydraulic road binder shall be determined by sieving.

Sieving shall be carried out in accordance with clause 3 of EN 196-6:1989. For this test the sieve residues shall not exceed the value in table 2.

7.2.2 Initial setting time

Initial setting time, determined in accordance with EN 196-3, shall be not less than the value in table 2.