



SLOVENSKI STANDARD
SIST EN 1423:1999/A1:2004
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Road marking materials - Drop on materials - Glass beads, antiskid aggregates and mixtures of the two

Straßenmarkierungsmaterialien - Nachstreumittel - Markierungs-Glasperlen, Griffigkeitsmittel und Nachstreugemische

ITeH STANDARD PREVIEW

Produits de marquage routier - (produits de saupoudrage) Microbilles de verre, granulats antidérapants et mélange de ces deux composants

[SIST EN 1423:1999/A1:2004](https://standards.iteh.ai/catalog/standards/sist/932a583b-aa84-49f2-9d46-70614c13550/sist-en-1423-1999-a1-2004)

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ICS:

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English version

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Straßenmarkierungsmaterialien - Nachstreumittel -
Markierungs-Glasperlen, Griffigkeitsmittel und
Nachstreugemische

This amendment A1 modifies the European Standard EN 1423:1997; it was approved by CEN on 2 May 2003.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant 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 amendment 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
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

This document (EN 1423:1997/A1:2003) has been prepared by Technical Committee CEN/TC 226 "Road equipment", the secretariat of which is held by AFNOR.

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 January 2004, and conflicting national standards shall be withdrawn at the latest by April 2005.

This document 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)**.

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

This amendment is included in a package with EN 1463-1:1997/prA1 and EN 13212:2001, with a common DOW fixed on 2003-09-30.

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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Amendments of Technical nature:

- Page 3, add two new sentences to the foreword
- Add the following amendments, originally included in document CEN/TC226 N503E and that correspond to the above mentioned EN 1423:1997/A1 (amendment):
 - Page 5/4.1, delete a part of the second paragraph
 - Page 6/4.4, complete the first paragraph
 - Page 7/4.4, complete the second paragraph and table 4
 - Page 8/5.1, modify the maximum value for the pH (9,5 instead of 9,0)
 - Page 8/5.4, delete a part of the second paragraph
 - Page 10, delete clause 8 "Marking"
 - Page 15/Annex B-B.4.1, deletion and substitution of the 4th item
 - Page 19/Annex C-C.8, deletion and substitution of the 1st paragraph
 - Page 29, after Annex G, add a new Annex H (Informative)
- End of the standard, after (new) Annex H, add Annex ZA (informative)

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Amendments of Editorial nature:

- Page 4/clause 2 "Normative references", add the following references mentioned in amendment A1:

EN 13212:2001	Road marking materials – Requirements for the factory production control
EN ISO 5725	Precision of test methods – Determination of repeatability and reproducibility for a standard test method by inter-laboratory tests
- Page 8/5.2 "Friability index", delete the NOTE.
(reason: not needed and wrong information)
- Page 12/A.2.2 "Liquids with known refractive index":
 - replace "cedar oil" by cedar wood oil"
 - replace "diphenylethylen" by "1,1 - diphenylethylen"
 - replace "monobromnaphthalin" by "1-bromnaphthalin"

(reason: those terms are not correct)

 - delete "methylen iodide"

(reason: is the same as "diiodomethane")

- delete "arsenic tribromide"

(reason: very dangerous substance)

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Foreword

- At the end, add the following sentence related to the “**transitional period**”:

Twelve (12) months after the date of publication of the harmonised part of this European standard (Annex ZA) in the Official Journal of the European Communities (which follows its availability and notification to the European Commission by CEN/CENELEC), compliance with all the provisions of the Construction Products Directive (CE-marking) becomes compulsory for all products falling within the scope of this European standard that are placed on the EEA market.

- The following (two) sentences shall be added after the first paragraph of the foreword:

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

For relationship with the Construction Products Directive (89/106/EEC), see informative Annex ZA, which is an integral part of this document. **(standards.iteh.ai)**

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Page 5: Chapter 4.1 “Granulometry”

Delete a part of the second paragraph as follows:

“For a period of 5 years after the date of publication of this European Standard existing national standard granulometries can be used, even if they use sieves other than those defined in ISO 565 - Sizes R 40. Thereafter,”

The second paragraph shall be:

Granulometries shall be described by selecting sieves in accordance with the following rules (see Table 1)

Page 6: Chapter 4.4 “Quality requirements”

Complete the first paragraph as follows:

"When tested in accordance with annex D (***reference method***), glass beads with imperfections as described in annex C, shall be considered defective.

Page 7: Chapter 4.4 “Quality requirements”

- Complete the paragraph (beginning) above Table 4, as follows:

Using the reference method, and taking into consideration only one defect per bead,..."

- Replace Table 4 as follows:

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Diameter of glass beads mm	Maximum weighted percentage of defective glass beads ¹⁾ %	Maximum weighted percentage of grains and foreign particles %
< 1	20	3
≥ 1	30	3

1) When alternative test methods are used as in Annex H (informative) of this European Standard, the correlated values shall be applied. Method described in annex D (normative) of EN 1423:1997 shall be always considered as the reference test method.

Page 8: Chapter 5.1 “Chemical characteristics”

Modification of the text, as follows:

"When tested in accordance with ISO 787-9, the pH value of the antiskid aggregates shall be not less than 5 and not greater than **9.5**"

Page 8: Chapter 5.4 “Granulometry”

Delete a part of the second paragraph as follows:

For a period of 5 years after the date of publication of this European Standard existing national standard granulometries can be used, even if they use sieves other than those defined in ISO 565 - Sizes R 40. Thereafter, granulometries shall be described by selecting sieves in accordance with the following rules (also see Table 1):

Page 10: Chapter 8 “Marking”

Delete the complete Clause 8.

Page 15: Annex B/B.4.1 “Apparatus and reagents”

- Delete the sentence (4th item):

a solution, containing by mass : * 50 % sodium sulfide as Na₂S ;

* 48 % distilled water;

**** 2 % anionic wetting agent (1)***

- and replace it by:

a saturated solution of sodium sulphide in distilled water at 20 °C with the addition of 2,0 % anionic wetting agent

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Page 19: Annex C/C.8 “Gas inclusions (see Figure C.8)”

Replace the existing paragraph by the following text:

When the ratio of the sum of the projected area of the bubbles inside a glass bead $\sum s_i$ to the projected area of the glass bead S is greater than 0,25 ($\sum s_i/S > 0,25$), the glass bead is considered defective.

Annex H

(informative)

Alternative test methods to determine the quality of glass beads

H.1 Scope

This annex establishes two alternative methods to determine the quality of glass beads. The test method defined in Annex D shall be considered as the reference test method.

These alternative methods incorporate the correlated values to be used, in accordance with the maximum weighted percentage of defective glass beads given in Table 4.

H.2 VISUAL TEST METHOD

H.2.1 Equipment and materials

- A complete series of 1/1 splitters.
- A projector shall be fitted with a 25 x magnification lens placed at a distance which gives an image diameter of between 750 mm and 800 mm onto a screen provided with a 500 mm square screen divided into 25 squares, or an optical magnifying device which allows a glass bead projection of between 50 and 150 units.
- A plane base capsule, between 60 mm and 70 mm in internal diameter or a glass plate with a minimum area of 700 mm².
- A silicone grease or a transparent adhesive tape.
- A liquid with a similar refractive index to that of the glass beads.

H.2.2 Procedure

A representative sample of an approximate mass of 0,3 g shall be prepared by reductions with splitters 1/1.

The representative sample so obtained is placed in the plane base capsule, previously wetted with a thin coat of silicone grease, or on a transparent adhesive tape, distributed uniformly in order to cover completely the square part of the screen with a single thickness of glass beads.

In case of obtaining a projection of over 150 glass beads, the count of the total number of glass beads is made in three alternate diagonal squares. The obtained number is multiplied by 25 and is divided by 3. In case of obtaining a projection of below 150 glass beads, the counting operation will include the total glass beads in the visual field. The total number of glass beads shall include between 150 and 400.

After that, a second count is made of the number of non-round defective glass beads existing in the whole squared screen, that is to say oval, satellites, tear shaped, fused together, roundish glass beads, grains and foreign particles.

The sample is then covered by the liquid with refraction index similar to glass beads. In these conditions, only the shape of those will be seen, and the glass inclusions will appear as black spots.

A third count is made of the number of round defective glass beads existing in the whole squared screen, that is to say those which present black spots over 25 % of their surface, opaque and milky glass beads.

The defective glass beads will be counted only once although they present several defects.

H.2.3 Results of counting

The percentage of defective glass beads will be calculated by the formula:

$$Md = (100 \times Nmd)/Nm$$

Where Md is the percentage of defective glass beads

Nmd is the total number of defective glass beads resulting from the sum obtained in those last two counts.

Nm is the total number of glass beads

The final result of Md is the average of, at least, three determinations.

H.2.4 Correlated values

When this alternative visual test method is used, the maximum weighted percentage of defective glass beads, as defined in Table 4, shall comply with Table H.1.

Table H.1 - Maximum weighted percentage of defective glass beads

Diameter of glass beads mm	Maximum weighted percentage of defective glass beads %	Maximum weighted percentage of grains and foreign particles %
< 1	18	3
≥ 1	28	3