



SLOVENSKI STANDARD
SIST ENV 13459-1:2002
01-september-2002

Materiali za označevanje vozišča - Kontrola kakovosti - 1. del: Zajem vzorcev iz skladišča in preskušanje

Road marking materials - Quality control - Part 1: Sampling from storage and testing

Straßenmarkierungsmaterialien - Qualitätskontrolle - Teil 1: Probenahme an rückgestellter Produktion und Prüfung

Produits de marquage routier - Contrôle de la qualité - Partie 1: Echantillonnage sur stock et essais

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93.080.20 Materiali za gradnjo cest Road construction materials

SIST ENV 13459-1:2002 **en**

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EUROPEAN PRESTANDARD
PRÉNORME EUROPÉENNE
EUROPÄISCHE VORNORM

ENV 13459-1

September 1999

ICS 93.080.20

English version

Road marking materials - Quality control - Part 1: Sampling from storage and testing

Produits de marquage routier - Contrôle de la qualité -
Partie 1: Echantillonnage sur stock et essais

Straßenmarkierungsmaterialien - Qualitätskontrolle - Teil 1:
Probenahme an rückgestellter Produktion und Prüfung

This European Prestandard (ENV) was approved by CEN on 19 August 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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This European Prestandard has been prepared by Technical Committee CEN/TC 226 "Road equipment", the secretariat of which is held by AFNOR.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

This European Prestandard consists of the following Parts under the general title: Road marking materials – Quality control:

- Part 1: Sampling from storage and testing
- Part 2: Guidelines for preparing quality plans for materials application
- Part 3: Performance in use

Road studs are included in Part 1 and 2 but not in Part 3.

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1 Scope

This Part specifies methods to obtain representative samples of road marking materials for testing and gives the appropriate test methods. The methods to obtain representative samples are described as appropriate for the main product types, i.e. paint, cold plastics, thermoplastics, premix glass beads, drop-on materials, preformed road markings and retroreflecting road studs.

This Part applies to the verification and/or identification of road marking materials held in stock, for example in a warehouse or at the manufacturer's storage facility, or for materials delivered to a customer, which require checking prior to application.

2 Normative references

This European Prestandard 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 Prestandard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 1423	Road marking materials - Drop on materials - Glass beads, antiskid aggregates and mixtures of the two
EN 1424	Road marking materials - Premix glass beads
EN 1463-1	Road marking materials - Retroreflecting road studs – Part 1: Initial performance requirements

EN 1790	Road marking materials – Preformed road markings
prEN 1871	Road marking materials - Physical properties
prEN 12802	Road equipment - Horizontal signalization - Laboratory methods and identification
ISO 1512:1991	Paints and varnishes - Sampling of products in liquid or paste form

3 Definitions

For the purposes of this Prestandard, the following definitions apply:

- 3.1 Original product container:** The primary packaging of each batch of a road marking material.
- 3.2 Intermediate bulk container (IBC):** Container with a capacity of up to 1000 kg, used as an intermediate size between bags and tins (25 kg to 50 kg) and bulk transport.
- 3.3 Hardener:** A component of the road marking material which through chemical action will cause the product to harden.

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4 Sampling procedures

NOTE: Clause 4 specifies the procedure for the selection of original product containers and for obtaining representative samples from a stock for subsequent inspection and testing.

4.1 General

- 4.1.1** When a series of original product containers to be examined can be identified as being from a single batch, the number of containers to be selected for sampling shall be 1%. Not less than two and not more than five containers shall be selected for sampling.
- 4.1.2** When a series of original product containers to be examined can be identified as being from different batches, the sampling shall be organized as follows.
Determine the number of batches and refer to table 1 to obtain the number of batches to be selected for sampling. The number of original product containers to be selected for sampling from each batch for testing shall be 1 %. Not less than two and not more than five containers shall be selected for sampling for each batch.

4.1.3 When the consignment to be examined is not classified as being from different batches, or when the batch information is not known, determine the number of containers and refer to table 1 to obtain the number of containers to be selected for sampling.

Table 1: Selection of batches or containers from a multi-batch stock

Number of batches or containers in consignment (M)	Number of batches or containers to be sampled (n)
2 to 8	2
9 to 18	3
19 to 32	4
33 to 50	5
51 to 72	6
73 to 98	7
99 to 128	8
129 to 162	9
163 to 200	10
and thereafter at a rate of	$n = \sqrt{\frac{N}{2}}$
<p>NOTE: Where the calculation of n does not yield an integer, the number shall be rounded up to the next whole number.</p>	

The samples shall be labelled with the information required to accompany the sample as specified in annex A.

NOTE: In order to avoid excessively large amounts of product being removed as samples it may be more appropriate to take representative samples on the storage site. When removing reduced samples from containers, consideration should be given to the amount required for testing (see 5.1). Containers of large capacity should be sampled on the storage site by skilled personnel.

Samples removed for testing from original product containers shall be suitably packaged and stored in conditions in accordance with the manufacturers recommendations.

4.2 Paint

A number (n) of original product containers shall be selected for sampling, at random, from the consignment or stock (M) in accordance with 4.1.

Representative samples of paint shall be taken from each selected container in accordance with ISO 1512: 1991.

4.3 Thermoplastics

4.3.1 General

NOTE: Thermoplastic road marking material is usually supplied in powder form or in block form. In powder form the material can be packed in individual bags and then supplied stacked on a pallet with an outer wrapping. Alternatively the material can be supplied in intermediate bulk containers (IBC).

An appropriate amount of additives and meltable packaging shall also be sampled for subsequent incorporation during testing the thermoplastic road marking.

The selection of packages or containers shall be as specified in 4.3.2 to 4.3.4 as appropriate for the form of the packaging.

4.3.2 Powder mix in bags

A number (n) of full pallets, containing stacked bags, shall be selected for sampling, at random, from the consignment or stock (M) in accordance with 4.1.

Remove three bags from each selected pallet ensuring that they are all from the same production batch.

Either divide each bag separately using a suitable sample divider, having apertures of no more than 50 mm, to obtain three representative samples, each having a mass of approximately 4 kg, and combine the three samples.

Or if according to the manufacturer's recommendations such separate division is not possible, melt the three bags of material. Either divide the sample after cooling as described in 4.3.4, or take the sample directly from the melter.

4.3.3 Powder mix in IBC

A number (n) of IBC shall be selected for sampling, at random, from the consignment or stock (M) in accordance with 4.1.

Representative samples of thermoplastic material shall be taken from each selected IBC. Melt the material and remove samples from the melter to yield a combined sample of 12 kg.

4.3.4 Block material

A number (n) of full pallets of block material shall be selected for sampling, at random, from the consignment or stock (M) in accordance with 4.1.

Remove three blocks from each selected pallet, remove the packaging and break up the material from all three blocks. Discard any material which is not uniform in texture and colour, including burnt material from the production process. Take a portion of not less than 4 kg from the centre of each of the three blocks and combine these portions in a clean container. Do not apply heat at any stage of the sampling procedure.

4.4 Cold plastics

NOTE: This procedure applies to any of the components of cold plastics, which can be in liquid form, in paste form, or in solid form.

4.4.1 Liquid or paste components

A number (n) of original product containers shall be selected for sampling, at random, from the consignment or stock (M) in accordance with 4.1.

Representative samples of each component shall be taken from each selected container in accordance with ISO 1512: 1991. For this purpose the product should be treated as type D (viscous product).

The correct proportion of each component shall be maintained when taking the samples.

4.4.2 Powder (solid) component

A number (n) of original product containers shall be selected for sampling, at random, from the consignment or stock (M) in accordance with 4.1.

Representative samples of each component shall be taken from each container in accordance with ISO 1512: 1991. (standards.iteh.ai)

A solid component delivered as a surface coating on glass beads or aggregates shall be sampled in accordance with EN 1423.

All solid components should be handled with care, following the instructions of the manufacturer.

The correct proportion of each component shall be maintained when taking the samples.

4.5 Retroreflecting road studs

NOTE: This procedure applies to retroreflecting road studs and to retroreflecting inserts for road studs, and assumes that the road studs are stored in original product containers.

A number (n) of original product containers shall be selected for sampling, at random, from the consignment or stock (M) in accordance with 4.1.

Representative samples shall be taken by removing a minimum of three pieces from each selected container.

If the road stud is to be installed using a primer and/or an adhesive, then a sample of this material shall be taken in accordance with 4.2 for one-component products, 4.3.4 for hot-melted adhesives, or 4.4 for two-component products.

4.6 Preformed road markings

NOTE: Preformed road markings are typically supplied in rolls or in packages containing a number of preformed sheets of the material.