



**SLOVENSKI STANDARD**  
**oSIST prEN 13459:2009**

**01-februar-2009**

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Road marking materials - Sampling from storage and testing

Straßenmarkierungsmaterialien - Probenahme an rückgestellter Produktion und Prüfung

Produits de marquage routier - Echantillonnage sur stock et essais

**Ta slovenski standard je istoveten z: prEN 13459**

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## Road marking materials - Sampling from storage and testing

Produits de marquage routier - Echantillonnage sur stock et essais

Straßenmarkierungsmaterialien - Probenahme an rückgestellter Produktion und Prüfung

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 226.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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## Foreword

This document (prEN 13459:2008) has been prepared by Technical Committee CEN/TC 226 "Road equipment", the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede ENV 13459-1:2001.

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## prEN 13459:2008 (E)

## 1 Scope

This European Standard 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.

**NOTE** This European Standard may apply 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 which require checking prior to application.

## 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 amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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*

EN 1871, *Road marking materials - Physical properties*

EN 12802, *Road marking materials - Laboratory methods for identification*

ISO 15528, *Paints, varnishes and raw materials for paints and varnishes. Sampling*

## 3 Definitions

For the purposes of this Standard, 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 used as an intermediate size between bags and tins and bulk transport.

## 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.

### 4.1.1 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 ( <i>N</i> )	4.1.1.1 Number of batches or containers to be sampled ( <i>n</i> )
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	$n = \sqrt{\frac{N}{2}}$
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<p>NOTE Where the calculation of <i>n</i> does not yield an integer, the number shall be rounded up to the next whole number.</p>	

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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 (*N*) in accordance with 4.1.

Representative samples of paint shall be taken from each selected container in accordance with ISO 15528.

## 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.

**prEN 13459:2008 (E)****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 ( $N$ ) 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 ( $N$ ) 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 ( $N$ ) 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 ( $N$ ) in accordance with 4.1.

Representative samples of each component shall be taken from each selected container in accordance with ISO 15528.

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 ( $N$ ) in accordance with 4.1.

Representative samples of each component shall be taken from each container in accordance with ISO 15528.

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 ( $N$ ) 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.

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

Smaller representative samples of preformed road marking shall be taken from each selected container in order to carry out all the tests required in accordance with EN 1790.

If a preformed road marking material is to be installed using a primer and/or an adhesive then a sample shall be taken in accordance with 4.2.

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#### 4.7 Drop on materials and premix glass beads

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

Representatives samples of drop-on materials and premix glass beads shall be taken from each selected container in accordance with EN 1423 and EN 1424 respectively.

NOTE Only containers without damage or deterioration of the packaging which could directly affect the quality of the sample, should be selected for sampling.

### 5 Testing of samples

#### 5.1 Minimum sample quantities

Table 2 gives the minimum sample quantities for conducting all of the tests specified in 5.2 and 5.3.

**Table 2 - Minimum sample quantities to conduct tests** (see note 1)

Product	Sample quantity
Paint	5 l
Thermoplastics	8 kg
Cold plastics (total of all components in correct proportions)	5 kg
Retroreflecting road studs (see note 2)	3 units
Preformed road markings (see note 2)	0,75 m <sup>2</sup>
Premix glass beads and drop-on materials	1,5 kg

NOTE 1: In the case of a reduced test programme, or when this standard is being used for other tests not defined in this standard, then different sample quantities may be used.

NOTE 2 If a sample of adhesive is to be taken for testing for road studs and preformed road markings, a minimum quantity of 1 kg of sample is recommended.

## 5.2 Identification testing

When samples of paint, thermoplastics and cold plastics have been obtained for the purpose of testing material for identification, the tests shall be carried out in accordance with the methods specified in prEN 12802.

If required for identification purposes, samples of paint, thermoplastics and cold plastics shall be obtained. Tests, as required, shall be carried out in accordance with the relevant methods specified in EN 12802. For preformed road markings the identification methods are specified in EN 1790.

NOTE It may not be necessary to carry out all of the tests described in EN 12802.

## 5.3 Verification testing

### 5.3.1 General

When samples have been obtained for the purpose of verifying conformity to one or more requirements specified in product standards, the tests shall be carried out in accordance with 5.3.2 to 5.3.5.

### 5.3.2 Paint, cold plastics, thermoplastics

Paint, cold plastics, thermoplastics shall be tested in accordance with prEN 1871.

### 5.3.3 Retroreflecting road studs

Road studs shall be tested in accordance with EN 1463-1.

### 5.3.4 Preformed road markings

Preformed road markings shall be tested in accordance with EN 1790.

### 5.3.5 Drop on materials and premix glass beads

Drop-on materials and premix glass beads shall be tested in accordance EN 1423 and EN 1424.