SLOVENSKI STANDARD
kSIST FprEN 1871:2011

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Materiali za označevanje vozišča - Barve, vroča in hladna plastika - Specifikacije

Road marking materials - Paint, thermoplastic and cold plastic materials - Specifications

Straßenmarkierungsmaterialien - Markierungsfarben, Heißplastikmassen und Kaltplastikmassen - Physikalische Eigenschaften

Ta slovenski standard je istoveten z: **FprEN 1871**

ICS:

93.080.20 Materiali za gradnjo cest Road construction materials

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English Version

Road marking materials - Paint, thermoplastic and cold plastic materials - Specifications

Straßenmarkierungsmaterialien - Markierungsfarben, Heißplastikmassen und Kaltplastikmassen - Physikalische Eigenschaften

This draft European Standard is submitted to CEN members for unique acceptance procedure. 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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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (FprEN 1871:2011) 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 UAP.

This document will supersede EN 1871:2000.

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 EC Directive(s).

For relationship with the Council Directive 89/106/EEC, see informative Annex ZA, which is an integral part of this document.

This European Standard is one of the following package of inter-related European Standards:

— FprEN 1790, *Road marking materials — Preformed road markings*,

— FprEN 1824, *Road marking materials — Road trials*,

— FprEN 1871, *Road marking materials — Physical properties*,

— FprEN 12802, *Road marking materials — Laboratory methods and identification*,

— FprEN 13197, *Road marking materials — Turntable wear simulators*,

— FprEN 13212, *Road marking materials — Requirements for factory production control*,

— FprEN 13459, *Road marking materials — Sampling and testing*.

1 Scope

The construction products covered and specified by this European Standard are white and yellow paint, cold plastic and thermoplastic materials, with or without premix glass beads, to be used for permanent and/or temporary road markings in circulation areas. Other products and colours intended for road markings are not covered in this European Standard.

This European Standard gives also specifications for the evaluation of conformity for white and yellow paint, cold plastic and thermoplastic materials to be used for permanent and/or temporary road markings in circulation areas including type testing and factory production control.

This European Standard also includes an Annex ZA with the clauses addressing the provisions of the EU Construction Product Directive, for permanent road markings.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1436:2007+A1:2008, *Road marking materials — Road marking performance for road users*

FprEN 1824:2010, *Road marking materials — Road trials*

FprEN 12802:2010, *Road marking materials — Laboratory methods and identification*

FprEN 13197:2010, *Road marking materials — Turntable wear simulators*

FprEN 13459:2010, *Road marking materials — Sampling and testing*

EN ISO 787-11:1995, *General methods of test for pigments and extenders — Part 11: Determination of tamped volume and apparent density after tamping (ISO 787-11:1981)*

EN ISO 1514:2004, *Paints and varnishes — Standard panels for testing (ISO 1514:2004)*

EN ISO 2812-1:2007, *Paints and varnishes — Determination of resistance to liquids — Part 1: Immersion in liquids other than water (ISO 2812-1:2007)*

EN ISO 4892-2:2006/A1:2009, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps — Amendment 1 (ISO 4892-2:2006/Amd 1:2009)*

EN ISO 4892-3:2006, *Plastics — Methods of exposure to laboratory light sources — Part 3: Fluorescent UV lamps (ISO 4892-3:2006)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
paint
liquid product which contains binders, pigments, extenders, solvents and additives, which can be supplied in single or multi-component systems and which, when applied, produces a cohesive film by the process of solvent/water evaporation and/or a chemical reaction

3.2
thermoplastic
solvent-free marking substance which is supplied in block, granular or powder forms, which is heated to a molten state and then applied, and which forms a cohesive film by cooling

3.3
cold plastic
viscous products supplied in multi-component forms (at least one main component and a hardener system) and free from solvents, the cohesive film being formed after mixing of all components only by a chemical reaction following which the cold plastic becomes a solid

3.4
base road marking material
base road marking material, for the purpose of this European Standard, is a paint, a thermoplastic or a cold plastic with a unique identification complying with the definitions above and which may, or may not, include premix glass beads

3.5
road marking assembly
base road marking material together with the precise application instructions including the identification of the manufacturer, dosages, types and proportions of drop-on materials and/or premix glass beads needed to build up the applied road markings. Every change to these is a new assembly and it is identified with the name of the base road marking material followed by the word assembly and a correlative number (e.g. Thermo AX – Assembly 1; Thermo AX – assembly 2, etc)

3.5.1
structured road marking assembly
road marking assembly without areas of regular dimensions and tap surfaces, which has flat areas of a maximum width of 75,7 mm, a maximum length of 125 mm at the top of the structure. The areas may be crossed by gaps that take up minimum 25% of the total surface area and have widths of minimum 5 mm. The areas may have ridges or edges of blocks with a height of minimum 1,2 mm

3.5.2
non structured road marking assemblies
road marking assembly with areas of regular dimensions and tap surfaces, which has flat areas of a minimum width of 75,7 mm and a minimum length of 125 mm at the top of the structure. The areas can be crossed by gaps that take up maximum 75% of the total surface area and have widths of maximum 5 mm. The areas can have ridges or edges of blocks with a height of maximum 1,2 mm

4 Requirements

4.1 General

This clause gives two separate lists of requirements.

1) Requirements of the base road marking materials;

2) Requirements of road marking assemblies.

4.2 Requirements of the base road marking materials (paint, thermoplastic and cold plastic)

4.2.1 Paint

4.2.1.1 Chromaticity co-ordinates and luminance factor: the colour shall be defined by (x,y) chromaticity co-ordinates and luminance factor β of the CIE standard system.

When measured according to 5.2.1.1, the results of the test for the luminance factor shall comply with Table 1a).

Table 1a) — Classes of luminance factor

Colour	Class	Luminance factor β
White	LF5	≥ 0,75
	LF6	≥ 0,80
	LF7	≥ 0,85
Yellow	LF1	≥ 0,40
	LF2	≥ 0,50

When measured according to 5.2.1.1, the chromaticity co-ordinates shall lie within the regions defined by the corner points given in Table 1b).

Table 1b) — Chromaticity co-ordinates of white and yellow road marking products

Chromaticity co-ordinates		Corner point N°			
		1	2	3	4
White	*x*	0,355	0,305	0,285	0,335
	y	0,355	0,305	0,325	0,375
Yellow	*x*	0,494	0,545	0,465	0,427
	y	0,427	0,455	0,535	0,483

4.2.1.2 Hiding power: it is the capacity of the paint to reduce the contrast between a black surface and a white surface over which the paint has been applied and dried.

When measured according to 5.2.1.2, the result, expressed as the contrast ratio, shall comply with Table 2.

Table 2 — Classes of hiding power

Colour	Class	Hiding Power (contrast ratio)
White	HP0	No value requested
	HP2	≥ 90%
	HP3	≥ 92%
	HP4	≥ 95%
Yellow	HP0	No value requested
	HP1	≥ 88%
	HP2	≥ 90%