



SLOVENSKI STANDARD
SIST EN 12899-3:2008/kFprA1:2012
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Stalna vertikalna cestna signalizacija - 3. del: Smerniki in svetlobno odbojna telesa

Fixed, vertical road traffic signs - Part 3: Delineator posts and retroreflectors

Ortsfeste, vertikale Straßenverkehrszeichen - Teil 3: Leitpfosten und Retroreflektoren

Signaux fixes de signalisation routière verticale - Partie 3: Délinéateurs et rétroréfecteurs

Ta slovenski standard je istoveten z: EN 12899-3:2007/FprA1

ICS:

93.080.30	Cestna oprema in pomožne naprave	Road equipment and installations
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English Version

Fixed, vertical road traffic signs - Part 3: Delineator posts and retroreflectors

Signaux fixes de signalisation routière verticale - Partie 3:
Délinéateurs et rétroreflecteurs

Ortsfeste, vertikale Straßenverkehrszeichen - Teil 3:
Leitpfosten und Retroreflektoren

This draft amendment is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 226.

This draft amendment A1, if approved, will modify the European Standard EN 12899-3:2007. If this draft becomes an amendment, 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.

This draft amendment was established by CEN 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 CEN-CENELEC Management Centre has the same status as the official versions.

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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 (EN 12899-3:2007/FprA1:2012) 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 Unique Acceptance Procedure.

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.

The main reason for this amendment is to incorporate in the series of existing standards EN 12899:2007 (Parts 1 to 5), a new standard EN 12899-6, which deals with the visual performance of retroreflective sign face materials.

EN 12899-3:2007/FprA1:2012 (E)**1 Modification to the Contents**

Update the table of contents.

2 Modifications to the Foreword

Insert the following text as 3rd paragraph:

"The main reason for this amendment is to incorporate in the series of existing standards EN 12899:2007 (Parts 1 to 5), a new standard EN 12899-6, which deals with the visual performance of retroreflective sign face materials."

Replace the introductory sentence to the list of parts, as given in paragraph 6, with the following text:

"This document is European Standard in the series of standards EN 12899 on "Fixed, vertical road traffic signs", with the followings parts:"

In paragraph 6, add also "Part 6: Performance of retroreflective sign face materials" to the end of the list.

3 Modifications to the Introduction

Replace paragraph 1 with the following:

"This European Standard is designed for use by manufacturers, who are placing their fixed vertical, road traffic signs on the market, as well as for road authorities and private developers who wish to use these signs."

Delete paragraph 2 completely.

4 Modifications to Clause 1

Replace paragraph 1 with the following:

"This European Standard specifies the requirements for delineator posts and for reflectors as separate products or for those combined together in assembled delineators to be used in traffic circulation areas."

Replace paragraph 2 with the following paragraph and new note:

"This European Standard specifies also the provisions on the corresponding test methods, evaluation of conformity and marking.

NOTE Provisions for the evaluation of conformity with regards to initial type testing (ITT) are further specified in EN 12899-5; provisions with regards to factory production control (FPC) are further specified in EN 12899-4."

Delete paragraphs 3 to 6 completely.

In the 7th paragraph, replace "No requirements are given for the" with "This European Standard does not specify".

5 Modifications to Clause 2

Delete the reference to EN 12899-1:2007.

Replace "EN 12899-4:2007" with "EN 12899-4".

Replace "EN 12899-5:2007" with "EN 12899-5".

Delete the reference to EN ISO 9001.

Replace "ISO 9227, Corrosion tests in artificial atmospheres — Salt spray tests" with "EN ISO 9227, Corrosion tests in artificial atmospheres — Salt spray tests (ISO 9227)".

Add the following new reference:

"EN ISO 1461, Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods (ISO 1461)"

6 Modification to Clause 4

Add "corresponding" between "and" and "tolerances" in the heading of Clause 4.

7 Modifications to Clause 6

In the title of 6.3.1 delete "Daytime" and replace it with "Daylight".

In the title of 6.3.2.1 delete "Daytime" and replace it with "Daylight".

In 6.3.2.1, delete the existing text and replace it with the following new one:

"When tested in accordance with the relevant procedure specified in CIE 15, using CIE standard daylight illuminant D65 and the standard CIE 45/0 viewing conditions, the chromaticity and the luminance factor β of type R1 retroreflectors shall conform to Table 2 or Table 3 as appropriate.

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Table 2 — Chromaticity boxes and luminance factors for class CR1

Colour	Point 1		Point 2		Point 3		Point 4		Luminance factor β
	x	y	x	y	x	y	x	y	
White	0,355	0,355	0,305	0,305	0,285	0,325	0,335	0,375	$\beta \geq 0,27$
Yellow	0,545	0,455	0,487	0,423	0,427	0,483	0,465	0,535	$\beta \geq 0,16$
Orange	0,631	0,369	0,552	0,359	0,506	0,404	0,570	0,430	$\beta \geq 0,12$
Red	0,735	0,265	0,674	0,236	0,569	0,341	0,655	0,345	$\beta \geq 0,030$
Blue	0,078	0,171	0,150	0,220	0,210	0,160	0,137	0,038	$\beta \geq 0,015$
Green	0,007	0,703	0,248	0,409	0,177	0,362	0,026	0,399	$\beta \geq 0,030$
Dark green	0,313	0,682	0,313	0,453	0,248	0,409	0,007	0,703	$0,070 \geq \beta \geq 0,010$
Brown	0,455	0,397	0,479	0,373	0,558	0,394	0,523	0,429	$0,090 \geq \beta \geq 0,030$
Grey	0,355	0,355	0,305	0,305	0,285	0,325	0,335	0,375	$0,18 \geq \beta \geq 0,11$

Table 3 — Chromaticity boxes and luminance factors for class CR2

Colour	Point 1		Point 2		Point 3		Point 4		Luminance factor β
	x	y	x	y	x	y	x	y	
White	0,305	0,315	0,335	0,345	0,325	0,355	0,295	0,325	$\beta \geq 0,27$
Yellow	0,494	0,506	0,470	0,480	0,513	0,437	0,545	0,455	$\beta \geq 0,16$
Red	0,735	0,265	0,700	0,250	0,607	0,343	0,655	0,345	$\beta \geq 0,030$
Blue	0,100	0,109	0,146	0,156	0,183	0,115	0,137	0,038	$\beta \geq 0,015$
Green	0,007	0,703	0,216	0,448	0,147	0,400	0,018	0,454	$\beta \geq 0,030$
Grey	0,305	0,315	0,335	0,345	0,325	0,355	0,295	0,325	$0,18 \geq \beta \geq 0,11$

NOTE Class CR1 defines fairly large chromaticity boxes that allow some change of the colours with time and is intended for application over the functional life of a retroreflective sheeting or at least within a specified guarantee period. Class CR2 defines smaller chromaticity boxes and is intended for colour matching and similar purposes, for new materials only."

Renummer all the following tables accordingly.

In 6.3.2.2, paragraph 1, replace the reference to "Table 2" with the one to "Table 4".

In 6.3.2.2, delete paragraph 2.

In 6.3.2.2, replace the Note to Table 2 (new Table 4) with the following note:

"NOTE It is recommended that Orange is not used in the same field of view as Red."

In 6.3.2.3, delete sub-clause title and replace with "Retroreflection".

Delete paragraph 2 (including three bullet points) and replace it with the following text:

"The minimum initial coefficient of retroreflection R_A of type R1 retroreflectors shall conform to Table 5 multiplied by the appropriate colour factor given in Table 8."

Delete Table 3 (new Table 5) and replace it with the following:

"

Entrance angle β_2 ($\beta_1 = 0^\circ$)	Observation angle α	Coefficient of retroreflection R_A ($\text{cd}\cdot\text{lx}^{-1}\cdot\text{m}^{-2}$) Type R1		
		Class 1	Class 2	Class 3
+5°	0,33°	50	180	300
+30°	2,0°	2,5	2,5	2,5

"

Delete the note after Table 3 (new Table 5).

In paragraph 3 replace references to "Table 4" and "Table 6" with the ones to "Table 6" and "Table 8", respectively.

In paragraph 4 replace references to "Table 5" and "Table 6" with the ones to "Table 7" and "Table 8", respectively.

In 6.4.1.1, 1st paragraph, replace the reference to "Table 7" with the one to "Table 9".

In 6.4.1.5, replace the reference to "ISO 1461" with "EN ISO 1461"

In 6.4.1.6, in paragraph 1 delete "daytime visibility" and replace it with "daylight visual performance".

In 6.4.1.6, in paragraph 2, delete "Daytime visibility" and replace it with "Chromaticity coordinates and luminance factor".

In 6.4.2.1, replace the reference to "Table 8" with the one to "Table 10".

In 6.4.2.4, delete paragraph 1.

In 6.4.2.4, paragraph 2, sentence 1, delete "class 3,".

8 Modifications to Clause 7

In the heading of 7.3.1, delete "Daytime visibility" and replace it with "Daylight chromaticity coordinates and luminance factor".

Delete the title of 7.3.2.1 and replace it with "Daylight chromaticity coordinates and luminance factor".

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In 7.3.2.1, delete replace "three type R1, class RA1 and class RA2" with "type R1" to read "Measurements shall be made on $\overline{A_1}$ type R1 $\overline{A_1}$ retroreflector test products in accordance with the procedures specified in CIE 15 using Standard Illuminant D65 and CIE 45/0 geometry."

Delete the title of 7.3.2.3 and replace it with "Retroreflection".

In 7.4.1.5, replace the reference to "ISO 9227" with "EN ISO 9227".

In 7.4.1.5, replace the reference to "ISO 1461" with "EN ISO 1461"

In 7.4.1.6, last sentence delete "daytime visibility" and replace it with "daylight chromaticity coordinates and luminance factor".

In 7.4.2.2, in paragraph 2 replace the reference to "Table 8" with the one to "Table 10".

In 7.4.2.2, in paragraph 2, insert "three additional retroreflectors for a second test at a temperature of", after "a temperature of $(-20\pm 2)^\circ\text{C}$ and" and insert "After the respective preconditioning" at the beginning of the third sentence.

In 7.4.2.3, paragraph 2, delete the first bullet point completely and in the second one "class 3,".

In 7.4.2.3, replace the reference to "ISO 9227" with "EN ISO 9227"

In 7.4.2.5, delete paragraph 2 and replace it with the following new paragraph:

"Type R1, R2 and R3 retroreflectors shall be exposed for 2 years and tests shall be made on the carefully cleaned test products. The following tests shall then be made:"

Insert the following paragraph:

"7.5 Dangerous substances

National regulations on dangerous substances may require verification and declaration on release, and sometimes content, when construction products covered by this standard are placed on those markets.

In the absence of European harmonized test methods, verification and declaration on release/content should be done taking into account national provisions in the place of use.

NOTE An informative database covering European and national provisions on dangerous substances is available at the Construction web site on EUROPA accessed through:

<http://ec.europa.eu/enterprise/construction/cpd-ds/>

9 Modification to Clause 9

Delete all 3 sub-clauses and replace them with the following ones:

"

9.1 General

The conformity of a product (i.e. delineator post and reflector as separate product or that combined with both of them) with the requirements of this standard and with the declared performances for the stated characteristics (e.g. values, classes) shall be demonstrated by:

— initial type testing,