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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 Management Centre has the same status as the official versions.

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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 12899-3:2007/prA1:2010) 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 amendment of the following parts of EN 12899-3:2007 have become necessary to incorporate Part 6 of this Standard which deals with the visual performance of retroreflective sheeting materials.

1 Modification to Foreword

In paragraph 2,

line 2 – delete “May 2008” and replace with “month year”

line 3 – delete “August 2012” and replace with “month year”

Insert the following text between paragraphs 2 and 3:

“This document includes Amendment 1 which became necessary to incorporate Part 6 of this Standard which deals with the visual performance of retroreflective sheeting materials.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.”

In paragraph 3, delete existing text and replace with “This document supersedes EN 12899-3:2007.”

In paragraph 6, add “Part 6: Performance of retroreflective sign face materials” to the end of the list

2 Modification to Clause 2, Normative references

Amend reference to “EN 12899-1:2007” to read “EN 12899-1” and make consequential changes throughout the document

Amend reference to “EN 12899-4:2007” to read “EN 12899-4” and make consequential changes throughout the document

Amend reference to “EN 12899-5:2007” to read “EN 12899-5” and make consequential changes throughout the document

Add reference to:

“EN 12899-6, *Fixed vertical road traffic signs — Part 6: Performance of retroreflective sign face materials*”

3 Modification to 6.3.1

Sub-clause title – delete “Daytime” and replace with “Daylight”

4 Modification to 6.3.2.1

Sub-clause title – delete “Daytime” and replace with “Daylight”

Line 2 – delete “EN 12899-1:2007, Table 1 or 2” and replace with “EN 12899-6, Table 6 or 7”

5 Modification to 6.3.2.2, Night-time chromaticity of retroreflectors

Delete paragraph 2

Delete table 2 and replace with the following:

Table 2 - Corner points of chromaticity regions for retroreflected radiation of retroreflectors

	1		2		3		4		5	
Colour:	x	y	x	y	x	y	x	y	x	y
White Type R1	0,475	0,452	0,360	0,415	0,392	0,370	0,515	0,409		
White Type R2 & R3	0,390	0,410	0,440	0,440	0,500	0,440	0,500	0,390	0,420	0,370
Yellow	0,513	0,487	0,500	0,470	0,545	0,425	0,572	0,425		
Amber	0,560	0,440	0,530	0,440	0,583	0,387	0,612	0,387		
Orange	0,645	0,355	0,615	0,355	0,565	0,405	0,595	0,405		
Red	0,652	0,348	0,622	0,348	0,714	0,256	0,735	0,265		
Green Type R1	0,007	0,570	0,200	0,500	0,322	0,590	0,193	0,782		
Green Type R2 & R3	0,320	0,675	0,320	0,520	0,245	0,400	0,028	0,400		
If two of the points lie on the spectrum locus line, they shall not be connected by a straight line but shall be joined by the boundary of the spectrum locus.										

Insert note with the following text:

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

6 Modification to 6.3.2.3

Delete sub-clause title and replace with “Retroreflection”

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

“Retroreflection performance class and application class requirements for type R1 retroreflectors shall be specified in accordance with EN 12899-6, Clause 4.”

Delete table 3 and renumber following tables accordingly

Delete note after table 3

7 Modification to 6.4.1.6, Natural weathering

Paragraph 1, line 1 – delete “daytime visibility” and replace with “daylight visual performance”

Paragraph 2, line 1 – delete “Daytime visibility” and replace with “Chromaticity coordinates and luminance factor”

8 Modification to 6.4.2.4, Durability

Delete paragraph 1 and replace with the following text:

“The durability of type R1 retroreflectors shall be in accordance with EN 12899-6, Clause 6.”

Paragraph 2, line 1 – delete “R1, class 3, type”

9 Modification to 7.3.1

Sub-clause title – delete “Daytime visibility” and replace with “Daylight chromaticity coordinates and luminance factor”

10 Modification to 7.3.2.1

Delete sub-clause title and replace with "Daylight chromaticity coordinates and luminance factor"

Line 1 – delete “, class RA1 and class RA2”

11 Modification to 7.3.2.3

Delete sub-clause title and replace with "Retroreflection"

Insert new paragraph 1 with the following text:

“Type R1 retroreflectors shall be tested in accordance with EN 12899-6, annexes A and B.”

Existing paragraph 1, line 1 – insert “on type R2 and R3 retroreflectors” between “Measurements” and “shall”

12 Modification to 7.4.1.6, Natural weathering test

Line 4 – delete “daytime visibility” and replace with “daylight chromaticity coordinates and luminance factor”

13 Modification to 7.4.2.5

Delete sub-clause title and replace with “Weathering tests”

Insert new paragraph 1 with the following text:

“Type R1 retroreflectors shall be tested in accordance with EN 12899-6, Clause 6.”

Existing paragraphs 1 and 2 – delete and replace with the following text:

“Type R2 and R3 retroreflectors shall be tested in accordance with EN ISO 877:1996, Method A, inclined at an angle of 45° to the horizontal and facing the equator. Three 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.”

14 Modification to Annex ZA

In Table ZA.1,

row 10 – Resistance to UV radiation (accelerated natural weathering test)

column 1 – delete “accelerated”

In Table ZA.2,

row 5 – Chromaticity coordinates (Daytime visibility)

column 1 – delete “Daytime visibility” and replace with “daylight”

column 4 – delete “Only for type R1 classes RA1 and RA2 retroreflectors”

row 6 – Chromaticity coordinates (Night-time chromaticity)

column 1 – delete “Night-time chromaticity” and replace with “night-time”

row 7 – Luminance factor (Daytime visibility)

column 1 – delete “Daytime visibility” and replace with “daylight”

column 4 – delete “Only for type R1 classes RA1 and RA2 retroreflectors”

row 8 – Coefficient of retroreflection R_A

column 1 – delete “Coefficient of retroreflection R_A ” and replace with “Retroreflection”

column 2 – delete “coefficient of retroreflection R_A ”

column 4 – delete and replace with the following text:

“pass/fail

retroreflection performance class/application class combination(s) for type R1 retroreflectors

coefficient of retroreflection R_A for type R2 and R3 retroreflectors”

In Table ZA.3,

row 7 – Daytime chromaticity coordinates and luminance factor

column 1 – delete “Daytime” and replace with “Daylight”

row 9 – Daytime chromaticity coordinates and luminance factor

column 1 – delete “Daytime” and replace with “Daylight”

column 4 – delete “Only for type R1 classes RA1 and RA2 retroreflectors”

row 10 – Night-time chromaticity coordinates and luminance factor

column 1 – delete “and luminance factor”

row 11 – Coefficient of retroreflection R_A

column 1 – delete “Coefficient of retroreflection R_A ” and replace with “Retroreflection”

column 4 – delete and replace with the following text:

“pass/fail

retroreflection performance class/application class combination(s) for type R1 retroreflectors

coefficient of retroreflection R_A for type R2 and R3 retroreflectors”

In Figure ZA.1,

Visual performance

after “Chromaticity coordinates - pass” insert the following text:

“Luminance factor - pass”

Durability

Resistance to UV (Accelerated natural weathering) – delete “Accelerated”

In Figure ZA.2,

Visual performance

delete “Chromaticity coordinates – Table 2 - pass” and replace with the following text:

“Chromaticity coordinates (daylight) – pass

Chromaticity coordinates (night-time) – pass

Luminance factor (daylight) – pass”

delete “Coefficient of retroreflection - Table 5 - pass” and replace with the following text:

“Retroreflection performance class/application class combination(s) – P4 for A34”

Durability

Resistance to UV (accelerated natural weathering) – delete “accelerated”

In Figure ZA.3,

Visual performance (posts)

delete “Daytime chromaticity coordinates and luminance factor Table 1 - pass” and replace with “Daylight chromaticity coordinates and luminance factor - pass”

Visual performance (reflectors)

delete “Daytime chromaticity coordinates and luminance factor - pass” and replace with the following text:

“Daylight chromaticity coordinates and luminance factor - pass”

delete “Night-time Chromaticity coordinates – pass” and replace with the following text:

“Night-time chromaticity coordinates - pass”

delete “Coefficient of retroreflection – Table 5 – pass” and replace with the following text:

“Retroreflection performance class/application class combination(s) – P4 for A34”

Durability

Resistance to UV (posts) (accelerated natural weathering) – delete “accelerated”

Resistance to UV (retroreflectors) (accelerated natural weathering) – delete “accelerated”