

**Vertikaalsed
püsiliikluskorraldusvahendid. Osa 1:
Püsiva kujutisega liiklusmärgid**

Fixed, vertical road traffic signs - Part 1: Fixed signs

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12899-1:2007 sisaldab Euroopa standardi EN 12899-1:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.12.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12899-1:2007 consists of the English text of the European standard EN 12899-1:2007.</p> <p>This document is endorsed on 18.12.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
--	---

<p>Käsitlusala: This Part 1 of EN 12899 specifies requirements for complete sign assemblies (including supports), signs (sign plates with sign faces), sign plates (without sign faces) and for other major components (retroreflective sheeting, supports and luminaires). The main intended use of fixed signs is for the instruction and guidance of road users on public and private land. Matters not covered by this standard: a) sign gantry and cantilever structures;b) signs with discontinuous messages, e.g. using light emitting diodes (LED), or fibre optics;c) variable message signs;d) signs used for temporary purposes;e) foundations;f) tests for extremely low temperatures.</p>	<p>Scope: This Part 1 of EN 12899 specifies requirements for complete sign assemblies (including supports), signs (sign plates with sign faces), sign plates (without sign faces) and for other major components (retroreflective sheeting, supports and luminaires). The main intended use of fixed signs is for the instruction and guidance of road users on public and private land. Matters not covered by this standard: a) sign gantry and cantilever structures;b) signs with discontinuous messages, e.g. using light emitting diodes (LED), or fibre optics;c) variable message signs;d) signs used for temporary purposes;e) foundations;f) tests for extremely low temperatures.</p>
---	---

ICS 93.080.30

Võtmesõnad: management, measurement, perform, properties, reflective, retroreflecting, road safety, road signs, road transport, signal systems, specification (approval), specifications, stationary, testing, tolerances, tolerances (measurement), traffic signals, traffic signs

English Version

Fixed, vertical road traffic signs - Part 1: Fixed signs

Signaux fixes de signalisation routière verticale - Partie 1 :
Panneaux fixesOrtsfeste, vertikale Straßenverkehrszeichen - Teil 1:
Verkehrszeichen

This European Standard was approved by CEN on 4 February 2007.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists 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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

Page

Foreword	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms, definitions, symbols and abbreviations	7
4 Retroreflective sign face material	8
4.1 Glass bead material	8
4.2 Microprismatic material	12
5 Structural performance	12
5.1 General	12
5.2 Partial safety factors	14
5.3 Loads	14
5.4 Deflections	16
6 Supports	20
6.1 Tops	20
6.2 Base compartments	20
6.3 Performance under vehicle impact	20
6.4 Corrosion resistance	21
6.5 Base plates	21
7 Sign plates, sign faces, transilluminated signs, externally illuminated signs and supports	21
7.1 Design	21
7.2 Sign faces	24
7.3 Transilluminated signs	25
7.4 Externally illuminated signs	28
8 Sign assemblies	30
9 Marking, labelling and product information	30
9.1 General	30
9.2 Marking and labelling	30
9.3 Product information	30
9.4 Luminaires	31
10 Evaluation of conformity	31
11 Dangerous substances	31
Annex A (normative) Test points for horizontal and vertical loads	32
A.1 Wind load	32
A.2 Snow clearance, dynamic load, load combination	41

Annex ZA (informative) Clauses of this European Standard addressing the provisions of the EU Construction Products Directive	44
ZA.1 Scope and relevant characteristics	44
ZA.2 Procedure for attestation of conformity of fixed vertical road traffic signs.....	51
ZA.3 CE marking and labelling.....	52

This document is a preview generated by EVS

Foreword

This document (EN 12899-1:2007) has been prepared by Technical Committee CEN/TC 226 "Road equipment" the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2008, and conflicting national standards shall be withdrawn at the latest by August 2009.

This document supersedes EN 12899-1:2001.

This European Standard 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 Directives.

For relationships with EU Directives, see informative Annex ZA, which is an integral part of this standard.

This European Standard consists of the following Parts under the general title:

Fixed, vertical road traffic signs —

Part 1: (This part) Fixed signs

Part 2: *Transilluminated traffic bollards (TTB)*

Part 3: *Delineator posts and retroreflectors*

Part 4: *Factory production control*

Part 5: *Initial type testing*

It is based on performance requirements and test methods published in CEN, CENELEC, CIE (International Commission on Illumination) and ISO documents together with standards of the CEN member organizations.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

This European Standard is designed for use by road authorities. It can also be used by private developers who wish to use signs on their own land similar to those used on public highways.

This European Standard:

- can be used to implement type approval and certification testing;
- derives from performance requirements and test methods published in CEN, CENELEC, CIE and ISO documents together with standards of the CEN member organizations;
- does not require the replacement of existing signs;
- covers performance requirements and test methods;
- defines performance limits and a range of performance classes. Colorimetric and retroreflective properties, as well as the luminance and illuminance, are specified;

The retroreflective requirements and tests in respect of materials based on glass bead technology are specified in this standard. The performance of retroreflective materials using microprismatic technology is specified in the relevant ETA which enables CE marking of such material.

Wind actions can be specified by the use of either values in this standard or by the methods specified in EN 1991-1-4.

Structural requirements for signs complete with sign supports include performance under static and dynamic loading. Provision is made for safety in use, including vehicle impact.

1 Scope

This Part 1 of EN 12899 specifies requirements for complete sign assemblies (including supports), signs (sign plates with sign faces), sign plates (without sign faces) and for other major components (retroreflective sheeting, supports and luminaires).

The main intended use of fixed signs is for the instruction and guidance of road users on public and private land.

Matters not covered by this standard:

- a) sign gantry and cantilever structures;
- b) signs with discontinuous messages, e.g. using light emitting diodes (LED), or fibre optics;
- c) variable message signs;
- d) signs used for temporary purposes;
- e) foundations;
- f) tests for extremely low temperatures.

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 1011, *Welding - Recommendations for welding of metallic materials*

EN 1991-1-4, *Eurocode 1: Actions on structures - Part 1-4: General actions - Wind actions*

EN 1993-1-1, *Eurocode 3: Design of steel structures — Part 1-1: General rules and rules for buildings*

EN 1995-1-1, *Eurocode 5: Design of timber structures - Part 1-1: General - Common rules and rules for buildings*

EN 1999-1-1, *Eurocode 9: Design of aluminium structures — Part 1-1: General rules – General rules and rules for buildings*

EN 10240, *Internal and/or external protective coatings for steel tubes - Specification for hot dip galvanized coatings applied in automatic plants*

EN 12665:2002, *Light and lighting – Basic terms and criteria for specifying lighting requirements*

EN 12767, *Passive safety of support structures for road equipment - Requirements and test methods*

EN 12899-4, *Fixed vertical road traffic signs – Part 4: Factory production control*

EN 12899-5, *Fixed vertical road traffic signs – Part 5: Initial type testing*

EN 13032-1, *Light and lighting - Measurement and presentation of photometric data of lamps and luminaires – Part 1: Measurement and file format*

EN 13201-3, *Road lighting – Part 3: Calculation of performance*

EN 60529, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)*

EN ISO 139, *Textiles - Standard atmospheres for conditioning and testing (ISO 139:2005)*

EN ISO 877:1996, *Plastics - Methods of exposure to direct weathering, to weathering using glass-filtered daylight, and to intensified weathering by daylight using Fresnel mirrors (ISO 877:1994)*

EN ISO 1461 *Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods (ISO 1461:1999)*

EN ISO 4892-2, *Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps (ISO 4892-2:2006)*

EN ISO 6272, *Paints and varnishes - Rapid-deformation (impact resistance) tests*

EN ISO 9001, - *Quality management systems - Requirements (ISO 9001:2000)*

ISO 4:1997, *Information and documentation — Rules for the abbreviation of title words and titles of publications*

CIE 15, *Colorimetry*

CIE 54.2, *Retroreflection – Definition and measurement*

CIE 74:1988, *Road signs*

3 Terms, definitions, symbols and abbreviations

For the purposes of this document, the symbols and abbreviations given in ISO 4:1997 apply. The photometric terms and definitions given in EN 12665:2002 and the sign descriptions given in CIE 74:1988 also apply, together with the following.

3.1

sign assembly

complete assembly including the sign plate, sign face material and supports

3.2

sign

sign plate with the sign face material applied

3.3

sign plate

fabrication comprising the substrate, reinforcing members and fixings

3.4

protective edge

fabrication intended to reinforce the edge of the sign and to reduce the severity of personal injury in the event of bodily impact with the sign edge

3.5

substrate

material used to support the sign face material

3.6

sign face material

material or materials applied to the substrate to produce the finished surface of the fixed sign