SLOVENSKI STANDARD

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Stalna vertikalna cestna signalizacija - 4. del: Kontrola proizvodnje v tovarni

Fixed, vertical road traffic signs - Part 4: Factory production control

Ortsfeste, vertikale Straßenverkehrszeichen - Teil 4: Werkseigene Produktionskontrolle

Signaux fixes de signalisation routière verticale - Partie 4 : Contrôle de la production en usine

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EUROPEAN STANDARD

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English Version

Fixed, vertical road traffic signs - Part 4: Factory production control

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Ortsfeste, vertikale Straßenverkehrszeichen - Teil 4: Werkseigene Produktionskontrolle

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.

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Contents

Page

Foreword

This document (EN 12899-4:2007) 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of an identical text or by endorsement, at the latest by May 2008, and conflicting national standards shall be withdrawn at the latest by August 2012.

No existing European Standard is superseded.

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

Fixed, vertical road traffic signs —

Part 1: *Fixed signs*

Part 2: *Transilluminated traffic bollards (TTB)*

Part 3: *Delineator posts and retroreflectors*

Part 4: (This part) *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

The following products are covered under Mandate M/111 Circulation Fixtures: Road Equipment. [Council Directive relating to construction products 89/106/EEC(CPD)]

Fixed vertical road traffic signs, either as products or unassembled as kits, and components of signs:

sheeting, (glass bead technology), supports, sign plates including lighting and fixings together with any combination of these components.

Also included are transilluminated traffic bollards, delineator posts and fixed retroreflectors.

This standard specifies which sorts of parameters and tests have to be taken into consideration within the FPC system, but leaves the precise test methods to be applied to be chosen depending on the manufacturer's facilities and production methods. The precise parameters and methods will be found in the manufacturer's written FPC procedures.

1 Scope

This Part of EN 12899 describes the requirements for Factory production control (FPC), for Parts 1, 2 and 3 of EN 12899.

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

EN 12899-1:2007, *Fixed, vertical road traffic signs — Part 1: Fixed signs*

EN 12899-2:2007, *Fixed, vertical road traffic signs — Part 2: Transilluminated traffic bollards (TTB)*

EN 12899-3:2007, *Fixed, vertical road traffic signs — Part 3: Delineator posts and retroreflectors*

EN ISO 9000:2005, *Quality management systems — Fundamentals and vocabulary (ISO 9000:2005)*

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

ISO 2859, *Sampling procedures for inspection by attributes*

3 Terms, definitions, symbols and abbreviations

For the purposes of this document, the terms and definitions given in EN ISO 9000:2005, EN 12899-1:2007, EN 12899-2:2007, EN 12899-3:2007 and the following apply.

3.1
factory production control (FPC)
permanent internal control of production exercised by the product manufacturer

3.2
batch
quantity of a product manufactured from one (or more, in so far as the performance of the product is not adversely affected) traceable delivery of raw material or components and for which there has been no change in the manufacturing process (in so far as the performance of the product is not adversely affected by any such change)

NOTE Production that is interrupted does not imply a new batch provided that there is no change in the raw material and component properties or in the manufacturing process.

3.3
manufacturer
person or organization with legal responsibility for placing the product on the market

3.4
supplier
producer of raw materials and components (e.g. sign faces, fixing devices etc.) of the product

4 System requirements

4.1 General

The manufacturer shall establish, document and maintain a FPC system to ensure that the products placed on the market conform to the declared performance characteristics. The FPC system shall consist of written procedures (works manual), regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or components, equipment, the production process and the product. Records shall remain legible, readily identifiable and retrievable and reviewed for effectiveness at least once per year which shall be recorded. This shall include testing of samples in accordance with a prescribed test plan defined in this European Standard.

A FPC system conforming to the requirements of EN ISO 9001, and made specific to the requirements of this standard, is considered to satisfy the above requirements.

In each factory, the manufacturer may delegate action to a person having the necessary authority to:

a) monitor procedures to demonstrate conformity of the product at appropriate stages;

b) identify and record any instance of nonconformity;

c) monitor procedures to correct instances of nonconformity.

All FPC systems shall achieve and maintain an adequate level of confidence that the product is in conformity with the requirements of this European Standard.

The results of inspections, tests or assessments requiring action shall be recorded, as shall any action taken. The action to be taken when control values or criteria are not met shall be recorded and retained for the period specified in the manufacturer's FPC procedures.

Components having the necessary performance levels already demonstrated (e.g. by conformity to an appropriate European Standard or by CE marking in accordance with an appropriate ETA) may be considered to have the declared performance levels and do not require any further testing for the purposes of conformity with this European Standard, providing the component's performance is not detrimentally affected by the manufacturing process when it is incorporated into the product.

In the case of new factories, new production lines or units, if the FPC system is temporarily unable to meet requirements that apply for normal production, as specified in this standard, the provisions of Table 1 shall apply to final quality testing. This shall continue until the FPC system is capable of meeting the other requirements of this standard.

4.2 Production control system

4.2.1 The manufacturer shall establish procedures to ensure that the production tolerances allow the product performances to conform to the declared values, demonstrated by initial type testing.

The production control system shall at least include the necessary procedures for the:

a) relevant constituents;

b) controls and tests to be carried out during manufacture;

c) verifications and tests carried out on finished products in accordance with the test regime specified in Clause 5;

d) control of the necessary installations, equipment and trained personnel to execute the tests on the raw materials, the tests during production and the final quality control tests as specified in Clause 5;

e) operation maintenance and calibration of appropriate testing and manufacturing equipment by qualified personnel.

NOTE 1 This does not preclude the manufacturer from concluding a sub-contracting agreement with one or more organizations or persons having the necessary skills and equipment in order to perform the above tasks.

The test methods to be applied and the tolerances for the results of all the tests used shall be documented in the FPC system.

The minimum frequency of testing shall be in accordance with the test plan of the manufacturer, or as specified in Table 1, whichever is the more rigorous.

NOTE 2 These methods would normally be direct methods. In the case of certain characteristics, indirect test methods could be appropriate if a relationship can be established between the specific characteristic (the one to be verified) and another characteristic which is more practicable to measure such that conformity to this standard is demonstrated.

Samples that have been subjected to destructive testing cannot be used. Other samples may be returned to the production line.