



SLOVENSKI STANDARD

SIST EN 1463-2:2002

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Road marking materials - Retroreflecting road studs - Part 2: Road test performance specifications

Road marking materials - Retroreflecting road studs - Part 2: Road test performance specifications

Straßenmarkierungsmaterialien - Retroreflektierende Markierungsknöpfe - Teil 2: Feldprüfungen

Produits de marquage routier - Plots rétrofléchissants - Partie 2: Essai routier

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EUROPEAN STANDARD
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Road marking materials - Retroreflecting road studs - Part 2: Road test performance specifications

Produits de marquage routier - Plots rétrofléchissants -
Partie 2: Essai routier

Straßenmarkierungsmaterialien - Retroreflektierende
Markierungsknöpfe - Teil 2: Feldprüfungen

This European Standard was approved by CEN on 12 November 1999.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

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Foreword

This European Standard 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of an identical text or by endorsement, at the latest by July 2000, and conflicting national standards shall be withdrawn at the latest by July 2000.

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

The annexes A and B of this European Standard are informative.

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Introduction

Retroreflecting road studs are horizontal guiding devices that reflect incident light by means of retroreflectors in order to warn, guide or inform road users. They may be constructed in one or more integral parts and may be bonded to, anchored within or embedded within the road surface. Retroreflecting road studs are provided either as permanent or temporary devices for road users.

The initial performance requirements such as dimensions, night-time visibility, night-time colour, daytime visibility etc. are specified in EN 1463-1.

In this Part of this standard, suitable methods are given for conducting road trials with the aim of achieving comparability and reproducibility of test results.

1 Scope

This European Standard describes a test method for carrying out road trials on retroreflecting road studs for use in both permanent and temporary applications. Specifications are given for test sites and for application patterns, and a recommendation is given for the presentation of the results in the form of a test report.

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2 Normative references (standards.iteh.ai)

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 1463-1:1997 Road marking materials – Retroreflecting road studs – Part 1 :
Initial performance requirements

3 Definitions

For the purposes of this standard the definitions of EN 1463-1:1997 and the following apply:

- 3.1 **test stud:** a retroreflecting road stud submitted for conformity testing in accordance with this standard.
- 3.2 **permanent stud:** a retroreflecting road stud providing night-time warning guidance and information to road users in permanent applications.
- 3.3 **temporary stud:** a retroreflecting road stud providing daytime and night-time warning guidance and information to the road user at road construction or maintenance sites.

4 Requirements

4.1 Test sites and their testing conditions

4.1.1 General

Test sites shall be arranged at suitable locations which meet at least the requirements of 4.1.2 to 4.1.5. The test results will depend on the weather, traffic and road surface conditions. These shall all be described in a general report for the test site.

4.1.2 General specifications for test sites

Roads used for test sites shall be straight, with the lowest longitudinal and transverse gradient possible and without singular points (such as traffic lights and intersections), substantial obstacles to daylight, sources of frequent dirt (such as quarries and field exits) and tracked vehicles.

Any change of site conditions during the test period shall be avoided.

The lengthwise slope and any special circumstances shall be stated in the general report for the test site.

4.1.3 Weather conditions

At the termination of a road trial, it is recommended to produce a weather report for the duration of the road trial. The weather report can be based on data from the nearest meteorological station and it can include data obtained on the test site itself; it should include aspects of the weather of influence to the results of the road trial.

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If it is agreed between the participating parties that weather information is to be collected, the weather report shall include as a minimum an account of temperature conditions during the testing period.

NOTE: The weather report can include a monthly account of mean minimum and maximum day temperatures, the cumulated precipitations in millimetres of water and the number of sand/grit scattering actions, snow ploughing actions etc.

4.1.4 Traffic conditions

Studs shall be tested on a dual carriageway road of two lanes in each direction so that traffic can be re-directed for safe installation and subsequent assessments. On this test site there shall be no other than the national maximum speed limit.

The annual average daily traffic (AADT) of test sites shall be at least 5 000 for the total carriageway in the test direction and shall contain 10 % to 25 % heavy vehicles. A vehicle is considered a heavy vehicle if its maximum gross mass is greater than 7 500 kg.

NOTE: Other special requirements (e.g. snow clearance, studded tyres) not included in the general minimum requirements as specified in this clause, but considered indispensable for some countries or special applications, may be taken into account by the participating parties for the selection of the test site and recorded in the general report for the test site.

4.1.5 Road surface conditions

Road trials shall be carried out on asphaltic road surfaces of an age of one year or more, in good condition and without damage in the form of wheel tracks, fissures, cracks or similar.

4.2 Organization of road trials

4.2.1 Duration

The duration of road trials shall be:

- one year for permanent studs;
- four months for temporary studs.

4.2.2 Longitudinal application patterns

Test studs shall be applied as:

- lane separation lines instead of road marking, or
- in the gaps between existing lane separation lines, or
- alongside and immediately adjacent to existing lane separation lines (to the right of the line for traffic driving on the right and to the left of the line for traffic driving on the left);

The longitudinal spacing of the test studs shall be as follows:

- permanent studs: 2.5 m to 18 m;
- temporary studs: 1 m to 5 m;

4.3 Application

4.3.1 Technical specifications

The test results depend on the quality of application, the method of application and weather conditions. Reference shall be made to the technical specifications for the stud product and the fixing system which shall be submitted by the supplier. These technical specifications shall be accompanied by a dimensioned drawing and description of the material(s) and fixing methods appropriate to the stud.

4.3.2 Number of studs

Fifty test studs shall be applied.

Test studs of one product shall not be interspaced or mixed with test studs of another product.

4.3.3 Retroreflecting lens colour

For the road trial white, yellow or amber retroreflecting road studs shall be used.

4.3.4 Periods of application

The periods of application of test studs shall be at a time of the year when weather conditions are suitable.

NOTE 1: The participating parties may agree to include one or more periods for application. One period can for instance be for temporary studs and another for permanent studs. It is of practical advantage to keep the periods as short as possible.

NOTE 2: For temporary studs the period of application is recommended to start between April and June.

4.3.5 Conditions allowing application

Application of test studs shall be in accordance with the instructions of the manufacturer.

NOTE 1: The participating parties may agree to include a specification for suitable weather conditions, for example, the road surface temperature to be at least 3 °C above the dew point of the air and the road surface temperature to be between 10 °C and 50 °C. The participating parties may agree that the application of test studs with a slow drying adhesive may be delayed if the road is to be opened to traffic within at most 2 h.

NOTE 2: Studs may be applied when the road surface is wet if water tolerant adhesives are specified by the test stud manufacturer.

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5 Road trial procedure

5.1 General

At the end of the field trial testing period, the procedures described in 5.2 to 5.7 shall be followed.

5.2 Stage 1: daylight examination

- a) Examine whether the enveloping profiles of all test studs present sharp edges to traffic as a result of damage, wear or separation of parts of the stud;
- b) any missing test stud shall be considered as non-conforming;
- c) record conforming and non-conforming studs on the Road Trial Assessment Form (RTAF);
- d) if the total number of test studs remaining is less than 45, the assessment shall be considered void;
- e) all non-conforming studs according to 5.2a) should for safety reasons be removed from the road as quickly as possible before proceeding to 5.3.

NOTE: An example of a RTAF is given in annex.A.