



**NSAI**  
Standards

Irish Standard  
I.S. EN 1463-1:2021

# Road marking materials - Retroreflecting road studs - Part 1: Initial performance requirements

**I.S. EN 1463-1:2021**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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NSAI  
1 Swift Square,  
Northwood, Santry  
Dublin 9

T +353 1 807 3800  
F +353 1 807 3838  
E standards@nsai.ie  
W NSAI.ie

Sales:  
T +353 1 857 6730  
F +353 1 857 6729  
W standards.ie

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## National Foreword

I.S. EN 1463-1:2021 is the adopted Irish version of the European Document EN 1463-1:2021, Road marking materials - Retroreflecting road studs - Part 1: Initial performance requirements

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**EUROPEAN STANDARD**  
**NORME EUROPÉENNE**  
**EUROPÄISCHE NORM**

**EN 1463-1**

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English Version

**Road marking materials - Retroreflecting road studs -  
Part 1: Initial performance requirements**

Produits de marquage routier - Plots  
rétro réfléchissants - Partie 1 : Exigences initiales de  
performance

Straßenmarkierungsmaterialien - Markierungsknöpfe -  
Teil 1: Anforderungen im Neuzustand

This European Standard was approved by CEN on 24 October 2021.

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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-CENELEC Management Centre has the same status as the official versions.

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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

## EN 1463-1:2021 (E)

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## European foreword

This document (EN 1463-1:2021) 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of an identical text or by endorsement, at the latest by June 2022, and conflicting national standards shall be withdrawn at the latest by September 2023.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1463-1:2009.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association.

For relationship with EU Directive(s) / Regulation(s), see informative Annex ZA, which is an integral part of this document.

The main changes with respect to the previous edition are listed below:

- To adapt the structure of the standard to the new CEN instructions for candidate harmonized standards for construction products, the terminology and the Annex ZA have been adapted to CEN guidance and template.
- All content that refers to temporary products and to none of the mandated characteristics has been eliminated (deletion of content related to Temporary Road Studs and in use characteristics “Dimensions”).
- Clause 6 “Assessment and verification of constancy of performance — AVCP” has been added.
- Former Clause 4 “type-of road stud” has been moved to Clause 3 “Terms, definitions, symbols, units and abbreviated terms” under new subclause 3.10.
- Former Clause 5 “Performance Requirements” can be found in this standard under Clause 4 “Characteristics”.
- Subclause 4.1.1 “General explanation to angles” has been added to Clause 4 “Product characteristics” (former Clause 5 “Performance Requirements”) to avoid any misinterpretation.
- Former Tables 4 and 5, in former subclause 5.3.1.1, have been merged as specified in that subclause (see new Table 3 in 4.1.2.1) in order to make the interpretation of the threshold values corresponding to that characteristic easier, and subsequently avoid potential mistakes. Therefore, threshold levels specified for each type (1, 2 and 3) of road studs and colour specified in new Table 3 correspond to those given in the previous version of EN 1463-1.
- Former subclause 5.3.1 “Photometric requirements” can be found in this standard under 4.1.2.1 “Coefficient of luminous intensity (R)”.
- Former subclause 5.3.2 “Colorimetric requirements” can be found in this standard under 4.1.2.2 Chromaticity co-ordinates (x,y).

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- Subclause 4.2 “Durability of retro-reflectivity” has been added to give a clear link to EN 1463-2:2021. Notice that according to the answer to Mandate M/111 (CEN reference doc N 1318 dated June 2013) accepted by the European Commission, only Durability of retro-reflectivity expressed as coefficient of luminous intensity (R) is considered relevant.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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

## 1 Scope

This document specifies the product characteristics, laboratory test methods, the way of expressing results and the relevant procedures for assessment and verification of the constancy of performance for retroreflecting road studs, non depressible and depressible by design (designated as Type A and B, respectively) and which reflectors are made of glass, plastic or plastic with abrasion resistance layer (designated as Type 1, 2 and 3, respectively), to be used for permanent road markings, and delineation purposes, in circulation areas.

This document covers retroreflecting road studs (types - 1, 2, 3 - A, B) of white, yellow, amber, red and green colour of their reflectors.

This document does not cover:

- non-retroreflective road studs;
- temporary retroreflective road studs.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

EN 1463-2:2021, *Road marking materials - Retroreflecting road studs - Part 2: Road test performance specifications*

ISO/CIE 11664-1:2019, *Colorimetry - Part 1: CIE standard colorimetric observers*

ISO 11664-2:2007, *Colorimetry - Part 2: CIE standard illuminants*

CIE 054.2:2001, *Retroreflection: Definition and measurement*

CIE S 017/E:2020, *ILV: International Lighting Vocabulary, 2<sup>nd</sup> Edition*

## 3 Terms, definitions, symbols, units and abbreviated terms

For the purposes of this document, the following terms and definitions apply.

### 3.1

#### **retroreflecting road stud**

horizontal guiding device that reflects incident light by means of *retroreflectors* (see 3.2) in order to warn, guide or inform road users

Note 1 to entry: Retroreflecting road stud called “road stud” in this document.

Note 2 to entry: Retroreflecting road stud may be constructed in either one or more integral parts and may be bonded to, anchored within or embedded within the road surface. The body is typically manufactured with plastic polymers, although solid glass is also used. The retroreflecting portion may be unidirectional or bidirectional, depressible or non depressible.

### 3.2

#### **retroreflector**

device which reverses the direction of visible light striking it and returns it along a path substantially parallel to its original path

Note 1 to entry: It may be made of glass (type 1), plastic (type 2) or plastic with an abrasion resistant surface (type 3). It may have a reflective coating at the back.

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