

Road marking materials - Road trials

This document is a preview generated by EVS

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 1824:2020 sisaldab Euroopa standardi EN 1824:2020 ingliskeelset teksti.	This Estonian standard EVS-EN 1824:2020 consists of the English text of the European standard EN 1824:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 04.11.2020.	Date of Availability of the European standard is 04.11.2020.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 93.080.20

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:
Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English Version

Road marking materials - Road trials

Produits de marquage routier - Essais routiers

Straßenmarkierungsmaterialien - Feldprüfungen

This European Standard was approved by CEN on 3 August 2020.

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

CEN members are the national standards bodies of 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 United Kingdom.



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

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

Contents

Page

European foreword.....	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions.....	6
4 Test sites and conditions.....	7
4.1 General.....	7
4.2 Test sites characteristics and location.....	7
4.3 Climatic conditions and classes.....	7
Table 1 — Test Field climatic classes.....	7
4.4 Road surface conditions and classes.....	7
Table 2 — Test field roughness classes.....	8
4.5 Roll-over classes.....	8
Table 3 — Roll-over classes.....	9
4.6 Studded tyres.....	9
5 Organization of road trials.....	9
5.1 Duration.....	9
5.2 Transverse and longitudinal application patterns.....	10
5.2.1 General.....	10
5.2.2 Transverse pattern.....	10
Figure 1 — Example of a transverse pattern showing a measurement column.....	10
5.2.3 Longitudinal pattern.....	10
Figure 2 — Example of a longitudinal pattern showing a measurement column.....	11
6 Application of road markings.....	11
6.1 General.....	11
6.2 Periods for application.....	12
6.3 Conditions suitable for application.....	12
6.4 Technical specification for application.....	12
6.5 Sampling and measurements.....	13
6.5.1 Sampling.....	13
6.5.2 Measurement of drying time and weather conditions.....	13
6.5.3 Determination of the useful rate(s) of application and the rate(s) of consumption during application.....	13
7 Measurements related to performance.....	14
7.1 General.....	14
7.2 Parameters.....	14
7.3 Measurement areas.....	14
7.3.1 Roll-over classes.....	14
7.3.2 Position.....	14
7.4 Direction of measurements.....	15
7.5 Number of measurements in the measurement area.....	15
7.6 Periodicity of measurements.....	15
Table 4 — Periodicity of measurements.....	16

8	Individual test report for road marking.....	16
	Annex A (normative) Köppen classification.....	17
A.1	General	17
A.2	Step 1: Determine whether a climate is arid/semiarid (climate B)	17
	Table A.1 — Rainfall distribution.....	17
A.3	Step 2: If not a B Climate, identify the climate as A, C, D or E according to temperature data	17
A.4	Step 3: After identifying A, Bs, Bw, C, D or E, determine the climate subcategories.....	18
A.4.1	A climates	18
A.4.2	B climates	18
A.4.3	C or D climates	18
A.4.4	E climates.....	18
A.5	Step 4: For C and D climates, determine a third letter	18
	Annex B (normative) Measurement of the distribution of wheel passages and the percentage of heavy vehicles.....	19
B.1	General	19
B.2	Definitions.....	19
	Figure B.1 — Illustration of definitions	20
B.3	Principles.....	20
B.4	Wheel counting measurement system.....	20
B.5	Determination of the number of wheel passages	21
B.5.1	General	21
B.5.2	Determination of the transversal relative wheel passages distribution for one day	21
B.5.3	Determination of the number of wheel passages during ΔT.....	21
	Figure B.2 — Example of number of wheel passages derived during ΔT for light, heavy and all vehicles.....	22
B.5.4	Determination of the percentage of heavy vehicles.....	23
B.5.5	Determination of roll over classes	23
	Annex C (normative) Determination of the rate of application and the rate of consumption of materials during application.....	24
C.1	General	24
C.2	Apparatus	24
C.3	Determination of the rate of consumption during application.....	24
C.4	Determination of the useful rate of application	25
C.4.1	General	25
C.4.2	Drop-on/other material	25
C.4.3	Multiple drop-on and other materials	25
C.4.4	Determination of the rate of application of the road marking and its components	25

C.5	Expression of results	26
Annex D (normative)	Drying time determination	27
Annex E (normative)	Meteorological determinations during application	28
E.1	General	28
E.2	Road surface temperature	28
E.3	Temperature and relative humidity of the air	28
E.4	Dew point	28
Table E.1	Determination of the dew point	29
E.5	Wind speed	29
Annex F (normative)	Removability	30
F.1	General	30
F.2	Assessment of removability	30
Annex G (normative)	Determination of cover index	31
G.1	General	31
G.2	Apparatus	31
Figure G.1	Example of a reference grid frame consisting of 12 squares	31
G.3	Procedure	32
G.4	Evaluation	32
Table G.1	Assessment of rating of grid squares	32
Table G.2	Specimen cover index	32
Annex H (informative)	Model of test report	33
Table H.1	Model of test report	34
Bibliography		35

European foreword

This document (EN 1824:2020) 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 2021, and conflicting national standards shall be withdrawn at the latest by May 2021.

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 1824:2011.

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 requirements for conducting road trials for road marking intended for use in both permanent and temporary road marking. Details are given for test sites, for the application of road marking materials on the test sites, for the parameters to be measured and the frequency of the measurements and for the presentation of the results in the form of a test report.

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. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1436, *Road marking materials - Road marking performance for road users and test methods*

EN 13036-1, *Road and airfield surface characteristics - Test methods - Part 1: Measurement of pavement surface macrotexture depth using a volumetric patch technique*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

roll-over class

number of wheel passages over a point of a road surface within a specified period of time

3.2

useful rate of application

quantity, expressed in $\text{g} \times \text{m}^{-2}$, of base material and/or drop-on and/or other materials which have adhered to the road surface, when lines are done

3.3

rate of consumption during application

quantity, expressed in $\text{g} \times \text{m}^{-2}$, of drop-on or injection materials at the exit of the guns of the application equipment

3.4

percentage of heavy vehicles

ratio between the number of heavy vehicles and the number of all vehicles circulating on the test site

3.5

road marking assembly

assembly composed of base road marking material together with the precise application instructions and designs including the identification of the manufacturer, dosages, types and proportions of additional materials (drop-on or other) needed to build up the applied road marking, every change to which is a new assembly