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Concrete pavements - Part 1: Materials

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 13877-1:2023 sisaldab Euroopa standardi EN 13877-1:2023 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 01.11.2023.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN 13877-1:2023 consists of the English text of the European standard EN 13877-1:2023.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 01.11.2023.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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ICS 93.080.20

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EUROPEAN STANDARD

EN 13877-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

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Supersedes EN 13877-1:2013

English Version

Concrete pavements - Part 1: Materials

Chaussées en béton - Partie 1 : Matériaux

Fahrbahnbefestigungen aus Beton - Teil 1: Baustoffe

This European Standard was approved by CEN on 25 September 2023.

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

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European foreword

This document (EN 13877-1:2023) has been prepared by Technical Committee CEN/TC 227 “Road materials”, the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by May 2024, and conflicting national standards shall be withdrawn at the latest by May 2024.

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 13877-1:2013.

EN 13877-1:2023 includes the following significant technical changes with respect to EN 13877-1:2013:

- the normative references have been updated;
- the scope has been adapted;
- lean concrete has been removed;
- the requirements on the density of fresh concrete have been removed;
- fibres have been included in the definition of reinforcement;
- the notes in Table 1 have been updated;
- Table 3, Dimensions for tie bars, has been removed;
- EN 197-1, EN 13863-6 and EN 14889-1 have been added to the normative references;
- the Bibliography has been updated.

EN 13877, *Concrete pavements*, is currently composed with the following parts:

- *Part 1: Materials*
- *Part 2: Functional requirements for concrete pavements*
- *Part 3: Specifications for dowels to be used in concrete pavements*

This document refers to EN 206. In accordance with the scope of EN 206 some additional or different requirements are necessary for pavements, particularly to comply with safety of users, durability, environment and health.

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.

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1 Scope

This document specifies requirements for the constituents (concrete and other materials) of concrete pavements, cast *in situ*. Concrete compacted by rollers is not covered by this document.

This document covers concrete pavements for roads and other traffic-bearing structures.

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.

CEN/TS 14754-1, *Curing compounds — Test methods — Part 1: Determination of water retention efficiency of common curing compounds*

EN 197-1, *Cement — Part 1: Composition, specifications and conformity criteria for common cements*

EN 197-5, *Cement — Part 5: Portland-composite cement CEM II/C-M and composite cement CEM VI*

EN 206, *Concrete — Specification, performance, production and conformity*

EN 1008, *Mixing water for concrete — Specification for sampling, testing and assessing the suitability of water, including water recovered from processes in the concrete industry, as mixing water for concrete*

EN 10025-2, *Hot rolled products of structural steels — Part 2: Technical delivery conditions for non-alloy structural steels*

EN 10060, *Hot rolled round steel bars for general purposes — Dimensions and tolerances on shape and dimensions*

EN 10080, *Steel for the reinforcement of concrete — Weldable reinforcing steel — General*

EN 12350-7, *Testing fresh concrete — Part 7: Air content — Pressure methods*

EN 12390-3, *Testing hardened concrete — Part 3: Compressive strength of test specimens*

EN 12390-5, *Testing hardened concrete — Part 5: Flexural strength of test specimens*

EN 12390-6, *Testing hardened concrete — Part 6: Tensile splitting strength of test specimens*

EN 12620, *Aggregates for concrete*

EN 13863-6, *Concrete pavements — Part 6: Test method for the determination of the tensile strength of concrete on cylindrical discs*

EN 13877-2:2023, *Concrete pavements — Part 2: Functional requirements for concrete pavements*

EN 13877-3, *Concrete pavements — Part 3: Specifications for dowels to be used in concrete pavements*

EN 14188-1, *Joint fillers and sealants — Part 1: Specifications for hot applied sealants*

EN 14188-2, *Joint fillers and sealants — Part 2: Specifications for cold applied sealants*

EN 14188-3, *Joint fillers and sealants — Part 3: Specifications for preformed joint sealants*

EN 14889-1, *Fibres for concrete — Part 1: Steel fibres — Definitions, specifications and conformity*

EN ISO 9227:2022, *Corrosion tests in artificial atmospheres — Salt spray tests (ISO 9227:2022)*

3 Terms and definitions

For the purposes 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 <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

concrete pavement

concrete layer capable of withstanding direct passage of traffic and environmental effects

Note 1 to entry: Several types exist: jointed unreinforced, jointed reinforced, continuously reinforced.

3.2

exposed aggregate concrete surface

surface finish for concrete pavements achieved by removing the surface mortar, in order to expose the coarse aggregate

3.3

curing compound

product that can be applied on the surface of newly placed concrete to minimize the loss of moisture and in the case of pigmented compounds to reflect heat, minimizing heating up of the concrete

3.4

dowel

smooth bar which extends into adjoining slabs at a joint in a concrete pavement, to improve load transfer and to avoid faulting

3.5

tie bar

bar used to interconnect adjacent concrete slabs along joints, normally longitudinal joints, in order to prevent the slabs from horizontally drifting apart, or used for cross-stitching of cracks or joints

3.6

reinforcement

bars, meshes or fibres embedded in concrete to control cracking and/or to provide tensile capacity

4 Requirements for constituent materials of concrete

4.1 General

Only constituent materials permitted in EN 206 shall be used.

The constituent materials for concrete shall be selected to satisfy the specified requirements of this document for fresh and hardened concrete including consistence, strength, durability, and protection of embedded steel against corrosion.