



**SLOVENSKI STANDARD**  
**oSIST prEN 12504-5:2023**  
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**Preskušanje betona v konstrukcijah - Part 5: Določanje zaščitnega sloja betona z elektromagnetnimi merilniki**

Testing concrete in structures — Part 5: Determination of concrete cover using electromagnetic covermeters

Prüfung von Beton in Bauwerken - Teil5: Bestimmung der Betondeckung mittels elektromagnetischer Betondeckungsmessgeräte

Essais pour béton dans les structures - Partie 5 : Détermination de l'enrobage en béton à l'aide de pachomètres électromagnétiques

**Ta slovenski standard je istoveten z: prEN 12504-5**

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**ICS:**

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ICS

English Version

## Testing concrete in structures - Part 5: Determination of concrete cover using electromagnetic covermeters

Prüfverfahren zur Messung der Betondeckung

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 104.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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## European foreword

This document (prEN 12504-5:2023) has been prepared by Technical Committee CEN/TC 104 “Concrete and related products”, the secretariat of which is held by SN.

This document is currently submitted to the CEN Enquiry.

This standard is one of a series on testing concrete.

EN 12504, *Testing concrete in structures*, consists of the following parts:

- Part 1: *Cored specimens — Taking, examining and testing in compression;*
- Part 2: *Non-destructive testing — Determination of rebound number;*
- Part 3: *Determination of pull-out force;*
- Part 4: *Determination of ultrasonic pulse velocity;*
- Part 5: *Determination of concrete cover using electromagnetic covermeters.*

This document is based on British Standard BS 1881-204: 1988 Testing concrete - Part 204: Recommendations on the use of electronic covermeters.

Electromagnetic covermeters have now been in use long enough for experience to have accumulated of applications for a variety of types of structure and under different conditions. Development of other forms of covermeter is in progress but no significant field experience is yet available.

A range of suitable devices is commercially available. Since the capabilities of these vary, the choice of instrument may be governed by the particular test conditions and information required.

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## prEN 12504-5:2023 (E)

### 1 Scope

This document gives recommendations on and describes the principles of operation of electromagnetic devices that may be used for estimating the position, depth and size of reinforcement buried in concrete. It also describes their methods of use and applications, the accuracy to be expected and the factors which may influence the results.

Electromagnetic covermeters can be used for:

- a) quality control, to ensure correct location and cover to reinforcing bars after concrete placement;
- b) investigation of concrete members for which records are not available or need to be checked;
- c) location of reinforcement as a preliminary to some other form of testing in which reinforcement should be avoided or its nature considered, e.g. extraction of cores, ultrasonic pulse velocity measurement or “near-to-surface” methods;
- d) location of buried ferromagnetic objects other than reinforcement, e.g. water pipes, steel joists, lighting conduits.

NOTE Some devices may also detect non-ferromagnetic metal objects. Such use is outside the scope of this Standard and reference should be made to manufacturers’ publications.

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

EN 12350-1, *Testing fresh concrete — Part 1: Sampling and common apparatus*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 206 and the following 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

##### actual cover

least distance,  $c_1$ , between the face of the concrete and the surface of the reinforcement

Note 1 to entry: See Figure 1

#### 3.2

##### Indicated cover

distance,  $c_m$ , between the face of the concrete and a notional surface of the reinforcing bar under investigation as shown in Figure 1

Note 1 to entry: Where values of cover are required for compliance with specified cover to a bar of known cross section, the indicated cover has to be converted to actual cover by a method such as that described in 6.2.2 a).