

This document is a preview generated by EVS

Dentistry - Water-based cements - Part 1: Acid-base cements (ISO 9917-1:2025, Corrected version 2025-10)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN ISO 9917-1:2025 sisaldab Euroopa standardi EN ISO 9917-1:2025 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 04.06.2025.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN ISO 9917-1:2025 consists of the English text of the European standard EN ISO 9917-1:2025.</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 04.06.2025.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
--	---

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

ICS 11.060.10

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele. Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis- ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis- ja Akrediteerimiskeskusega: 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 and Accreditation. 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 and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation: Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

EUROPEAN STANDARD

EN ISO 9917-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2025

ICS 11.060.10

Supersedes EN ISO 9917-1:2007

English Version

Dentistry - Water-based cements - Part 1: Acid-base cements (ISO 9917-1:2025, Corrected version 2025-10)

Médecine bucco-dentaire - Ciments à base d'eau -
Partie 1: Ciments acido-basiques (ISO 9917-1:2025,
Version corrigée 2025-10)

Zahnheilkunde - Wasserhärtende Zemente - Teil 1:
Zemente, die über eine Säure-Base-Reaktion abbinden
(ISO 9917-1:2025, korrigierte Fassung 2025-10)

This European Standard was approved by CEN on 11 May 2025.

This European Standard was corrected and reissued by the CEN-CENELEC Management Centre on 22 October 2025.

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, Türkiye 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

European foreword

This document (EN ISO 9917-1:2025) has been prepared by Technical Committee ISO/TC 106 "Dentistry" in collaboration with Technical Committee CEN/TC 55 "Dentistry" the secretariat of which is held by DIN.

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 December 2025, and conflicting national standards shall be withdrawn at the latest by December 2025.

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 ISO 9917-1:2007.

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

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 9917-1:2025, Corrected version 2025-10 has been approved by CEN as EN ISO 9917-1:2025 without any modification.

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Classification	2
4.1 Chemical type.....	2
4.2 Application.....	2
5 Material	3
5.1 General.....	3
5.2 Components.....	3
5.2.1 Liquid.....	3
5.2.2 Powder.....	3
5.3 Unset cement.....	3
6 Preparation of test specimens	3
6.1 Ambient conditions.....	3
6.2 Method of mixing.....	3
7 Sampling	3
7.1 Hand-mixed cements.....	3
7.2 Encapsulated cements.....	3
8 Requirements	4
8.1 General.....	4
8.2 Net setting time (except pit and fissure sealing cements).....	4
8.3 Film thickness (luting cements only).....	4
8.4 Compressive strength.....	4
8.5 Acid erosion.....	4
8.6 Optical properties (polyalkenoate restorative cements only).....	4
8.7 Acid-soluble arsenic and lead contents.....	4
8.7.1 Acid-soluble arsenic content.....	4
8.7.2 Acid-soluble lead content.....	4
8.8 Radiopacity (if claimed).....	4
8.9 Net setting time (pit and fissure sealing cements only).....	5
9 Packaging, marking, labelling and information to be supplied by manufacturer	5
9.1 General.....	5
9.2 Packaging.....	5
9.3 Declaration of components.....	8
Annex A (normative) Determination of net setting time (except for pit and fissure sealing cements)	9
Annex B (informative) Chemical composition and applications of dental cements	11
Annex C (normative) Determination of film thickness (luting cements only)	12
Annex D (normative) Determination of compressive strength	15
Annex E (normative) Determination of acid erosion	18
Annex F (normative) Determination of optical properties (polyalkenoate restorative cements only)	21
Annex G (normative) Determination of acid-soluble arsenic and lead contents	24
Annex H (normative) Determination of radiopacity (if claimed)	25
Annex I (normative) Determination of net setting time (pit and fissure sealing cements only)	27

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 106, *Dentistry*, Subcommittee SC 1, *Filling and restorative materials*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 55, *Dentistry*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 9917-1:2007), which has been technically revised.

The main changes are as follows:

- change of the title;
- inclusion of pit and fissure sealing cements in the scope;
- adoption of ISO 13116 test method for radiopacity;
- adoption of table-type formatting of requirements of marking and information;
- addition of declaration of components;
- addition of Annex I.

A list of all parts of the ISO 9917 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

This corrected version of ISO 9917-1:2024 incorporates the following correction:

- the formula in [Clause D.3](#) has been corrected.

Introduction

This document specifies the requirements and test methods for cements in which setting is achieved by an acid-base reaction.

This document does not include specific qualitative and quantitative requirements for ensuring the absence of biological hazards. It is recommended that reference be made to ISO 10993-1 and ISO 7405 when assessing possible biological or toxicological hazards.

This document is a preview generated by EVS

Dentistry — Water-based cements —

Part 1: Acid-base cements

1 Scope

This document specifies requirements and test methods for acid-base, dental cements intended for permanent cementation, lining and restoration. This document is not intended to address resin-modified water-based cements. This document is applicable to both hand-mixed and encapsulated cements for mechanical mixing. This document specifies limits for each of the properties according to whether the cement is intended for use as a luting agent, base or liner, restorative material or pit and fissure sealing cement.

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.

ISO 1942, *Dentistry — Vocabulary*

ISO 2590, *General method for the determination of arsenic — Silver diethyldithiocarbamate photometric method*¹⁾

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 7491, *Dental materials — Determination of colour stability*

ISO 8601-1, *Date and time — Representations for information interchange — Part 1: Basic rules*

ISO 13116, *Dentistry — Test method for determining radio-opacity of materials*

ISO 15223-1, *Medical devices — Symbols to be used with information to be supplied by the manufacturer — Part 1: General requirements*

ISO 20417, *Medical devices — Information to be supplied by the manufacturer*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1942 and the following apply.

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

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

1) Withdrawn.