Dentistry - Central compressed air source equipment (ISO 22052:2020)

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 22052:2020 sisaldab Euroopa standardi EN ISO 22052:2020 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 22052:2020 consists of the English text of the European standard EN ISO 22052:2020.
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 08.07.2020.	Date of Availability of the European standard is 08.07.2020.
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.

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Dentistry - Central compressed air source equipment (ISO 22052:2020)

Médecine bucco-dentaire - Centrale d'air comprimé (ISO 22052:2020)

Zahnheilkunde - Zentrale Druckluftversorgungsanlage (ISO 22052:2020)

This European Standard was approved by CEN on 23 May 2020.

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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 ISO 22052:2020) 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of an identical text or by endorsement, at the latest by January 2021, and conflicting national standards shall be withdrawn at the latest by January 2021.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.

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, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 22052:2020 has been approved by CEN as EN ISO 22052:2020 without any modification.

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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).

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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 6, *Dental equipment*.

This first edition of ISO 22052 cancels and replaces ISO/TS 22595-2:2008.

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.

Introduction

Central compressed air source equipment is nearly universally present in modern dental treatment facilities. It consists of components located separate from treatment rooms used to compress air, prepare the air to meet quality requirements and to store the dental air for eventual use by treatment room pneumatic devices such as air powered hand pieces and air-water syringes as well as for cooling purposes.

Since the output of central compressed air source equipment is used in dental treatment, the equipment characteristics as well as the quality characteristics of the dental air becomes the subject of this document.

The requirements specified in this document have been developed with consideration for the dental air requirements specified in ISO 7494-2.

In medical applications the quality of "air for medical use" is carefully defined. For example, in the European Pharmacopeia and in other countries there are similar definitions. Air for medical use is used for artificial breathing, anaesthetic, endoscopic and other applications inside the human body, also for long term therapy. Also, it is used in sterile environments like operating rooms. For these applications it is necessary to have a precise definition of the quality of the air. The European Pharmacopeia gives values and limits for the contents of the air as well as limits for dangerous contaminants.

In dental applications, compressed air is used to supply driving power for treatment room pneumatic devices such as air powered hand pieces ("drills") and for drying an operating site. Air used for these purposes intermittently enters a patient's mouth and to a significant degree, can be quickly removed by dental suction equipment. As the ambient air in the dental treatment room is not sterile, there is no need for dental air to be sterile nor is there a need for the contents of dental air to be controlled beyond the requirements of normal ambient air.

Nevertheless, there are some essential quality characteristics for the air used in dentistry:

a) to protect sensitive dental instruments and apparatus (from oil, water, particles);

b) to provide clean and dry air and to avoid that dental procedures are compromised (because oil is a release agent that affects e.g. dental adhesion systems);

c) to protect against high humidity in the dental air that creates corrosion in the air receivers and air lines and that can result in technical difficulties in dental instruments; also to protect against the growth of microorganisms in the dental air system.

The test method in this document has been developed in response to the need for clear specification in determining the quality of the dental air.

Up to now, there is no international standard available which defines the quality of "air for dental use".

Dentistry — Central compressed air source equipment

1 Scope

This document specifies requirements and test methods for central compressed air source equipment supplying dental air for dental units and various dental air consuming devices in the dental office.

It also specifies quality requirements and test methods for the dental air produced by the central compressed air source equipment, such as requirements for the purity level of dental air.

It also specifies requirements for information to be supplied by the manufacturer on the performance, installation, operation and maintenance of the central compressed air source equipment.

This document applies only to central compressed air source equipment located outside of the dental treatment room.

This document does not apply to central compressed air source equipment located in the dental treatment room and facility piping. This document does not include requirements for dental laboratory applications (e.g. CAD/CAM systems).

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 2151, *Acoustics — Noise test code for compressors and vacuum pumps — Engineering method (Grade 2)*

ISO 7494-2, *Dentistry — Dental units — Part 2: Air, water, suction and wastewater systems*

ISO 8573-1, *Compressed air — Part 1: Contaminants and purity classes*

ISO 8573-2, *Compressed air — Contaminant measurement — Part 2: Oil aerosol content*

ISO 8573-3, *Compressed air — Part 3: Test methods for measurement of humidity*

ISO 8573-4, *Compressed air — Contaminant measurement — Part 4: Particle content*

ISO 9687, *Dentistry — Graphical symbols for dental equipment*

IEC 60335-1, *Household and similar electrical appliances — Safety — Part 1: General requirements*

IEC 61000-6-2, *Electromagnetic compatibility (EMC) — Generic standards — Immunity for industrial environments*

IEC 61000-6-3, *Electromagnetic compatibility (EMC) — Generic standards — Emission standard for residential, commercial and light-industrial environments*

IEC 60417, *Graphical symbols for use on equipment*

ISO 7000, *Graphical symbols for use on equipment — Registered symbols*