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**Dentistry — Mobile dental units and  
dental patient chairs —**

**Part 2:  
Air, water, suction and wastewater  
systems**

*Médecine bucco-dentaire — Units dentaires et fauteuils dentaires  
patient mobiles —  
Partie 2: Systèmes d'alimentation en air et en eau, d'aspiration et  
d'évacuation des eaux usées*

ISO 5467-2:2022

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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](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 106, *Dentistry*, Subcommittee SC 6, *Dental equipment*, 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).

A list of all parts in the ISO 5467 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](http://www.iso.org/members.html).

## Introduction

This document was developed in consideration of ISO 7494-2:2022, so as to be applicable to mobile dental units. The requirements in this document focus on certain technical aspects to be appropriate for international standardization. The requirements for microbiological aspects of the fluids transported by mobile dental units are acknowledged to be also worthy of standardization and requirements pertaining to the prevention, inhibition, and removal of mobile dental unit waterline biofilm are being developed.

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# Dentistry — Mobile dental units and dental patient chairs —

## Part 2: Air, water, suction and wastewater systems

### 1 Scope

This document specifies the requirements and test methods for mobile dental units concerning:

- a) the properties of mobile dental unit connections to the compressed air supply, water supply, suction supply, and wastewater drain plumbing,
- b) the materials, design, and construction of the compressed air and water system within the mobile dental unit,
- c) the quality for incoming water and air,
- d) the performance of mobile dental unit suction system, and
- e) the air, water, suction and wastewater properties of mobile dental unit connections to the interfaces to dental handpieces.

This document also specifies requirements for instructions for use and a technical description.

This document is only applicable to mobile dental units that are not used for oral surgery treatment requiring sterile air and water supplies. Amalgam separators are not included in this document.

### 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 5167-1, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full — Part 1: General principles and requirements*

ISO 5467-1, *Dentistry — Mobile dental units and dental patient chairs — Part 1: General requirements*

ISO 7494-2:2022, *Dentistry — Stationary dental units and dental patient chairs — Part 2: Air, water, suction and wastewater systems*

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

ISO 10637, *Dentistry — Central suction source equipment*

ISO 22052, *Dentistry — Central compressed air source equipment*

IEC 60601-1:2005+AMD1:2012+AMD2:2020, *Medical electrical equipment — Part 1: General requirements for basic safety and essential performance*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1942, ISO 5467-1, ISO 7494-2, ISO 10637, ISO 22052 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/>

**3.1 mobile dental unit suction system**  
components located between the facility suction pipeline connection point and the cannula connector that are part of the mobile dental unit which enable an air flow to be induced which is designed to remove spray, liquids and solids from the mouth of the dental patient during dental treatment

Note 1 to entry: Suction source equipment can be included in a mobile dental unit, in which case no facility suction pipeline connection point exists.

**3.2 mobile dental unit suction source connection point**  
port on the mobile dental unit for connection to a supply of dental suction

### 4 Classification

#### 4.1 Classification of dental air supply

If the mobile dental unit is equipped with an integrated compressed air source equipment, the integrated compressed air source equipment shall be classified according to the type of compressor lubrication methods into the following types: [ISO 5467-2:2022](https://standards.iteh.ai/catalog/standards/sist/dd3e6617-c9da-4c02-8e39-af77b0aef6f6/iso-5467-2-2022)

Type 1: oil-lubricated compressor heads

Compressor heads are oil-lubricated.

Type 2: non-oil-lubricated compressor heads

Compressor heads are not oil-lubricated.

#### 4.2 Classification of suction system and suction air flow rate

ISO 7494-2:2022, Clause 4 shall apply.

### 5 Requirements

#### 5.1 Connections from the mobile dental unit to dental handpiece

The requirements and the test methods specified in ISO 7494-2:2022, 5.1 and 7.2 shall apply by replacing stationary dental unit with mobile dental unit.

Test in accordance with [7.1.2](#).



## 5.2 Supply connections to the mobile dental unit

Technical description shall include the configuration of the supply connections for the mobile dental unit, if applicable.

NOTE Some mobile dental units do not have any supply connection other than an electrical power supply cable.

The location of other utility connections which are not indicated shall be specified by the manufacturer.

Test in accordance with [7.1](#).

## 5.3 Water and wastewater systems

### 5.3.1 Incoming water and bottled water

Instructions for use and technical description shall specify the requirements either for the incoming water to be supplied to the mobile dental unit or for the bottled water to be used in the mobile dental unit, or both, including the following parameters:

- a) water pressure limits, if applicable;
- b) water flow rate limit, if applicable;
- c) water hardness limit;
- d) pH limits;
- e) maximum particle size.

NOTE The following ranges are typical ranges:

- a) water pressure limits (200 kPa to 600 kPa);
- b) water flow rate limit (greater than 5 l/min);
- c) water hardness limit (less than 2,14 mmol/l);
- d) pH limits (6,5 to 8,5);
- e) maximum particle size (< 100 µm).

Test in accordance with [7.1](#).

### 5.3.2 Materials used for construction of procedural water systems within the mobile dental unit

The requirements including the NOTE specified in ISO 7494-2:2022, 5.3.3 shall apply by replacing stationary dental unit with mobile dental unit.

Test in accordance with [7.1](#).

### 5.3.3 Backflow prevention device for mobile dental units connected to the external drinking water supply

The requirements including the NOTE and the test methods specified in ISO 7494-2:2022, 5.3.4 and 7.3 shall apply by replacing stationary dental unit with mobile dental unit.

Test in accordance with [7.1.2](#).

#### 5.3.4 Cuspidors

If the mobile dental unit is equipped with a cuspidor, the requirements and the test methods specified in ISO 7494-2:2022, 5.3.5 and 7.4 shall apply by replacing stationary dental unit with mobile dental unit.

Test in accordance with [7.1.2](#).

#### 5.3.5 Water venturi

If the mobile dental unit uses water venturi for suction of saliva and wastewater, the requirements specified in ISO 7494-2:2022, 5.3.6 shall apply.

Test in accordance with [7.1](#).

#### 5.3.6 Particle filter

The requirements specified in ISO 7494-2:2022, 5.3.7 shall apply by replacing stationary dental unit with mobile dental unit.

Test in accordance with [7.2](#).

#### 5.3.7 Bacterial filter

The requirements specified in ISO 7494-2:2022, 5.3.8 shall apply by replacing stationary dental unit with mobile dental unit.

Test in accordance with [7.1](#).

#### 5.3.8 Bottled water system supplying procedural water or solution

If the mobile dental unit is equipped with a bottled water system, the requirements specified in ISO 7494-2:2022, 5.3.9 shall apply.

Test in accordance with [7.1](#).

#### 5.3.9 Retraction

The requirements and the test methods specified in ISO 7494-2:2022, 5.3.10 and 7.6 shall apply by replacing stationary dental unit with mobile dental unit.

Test in accordance with [7.1.2](#).

#### 5.3.10 Treatment method for biofilm

The requirements including the NOTE and the test methods specified in ISO 7494-2:2022, 5.3.11, 7.8 and 7.9 shall apply by replacing stationary dental unit with mobile dental unit.

Test in accordance with [7.1.2](#).

#### 5.3.11 Water sampling connection point

If the mobile dental unit is intended to be connected to an external drinking water supply, the requirements specified in ISO 7494-2:2022, 5.3.12 shall apply by replacing stationary dental unit with mobile dental unit.

Test in accordance with [7.1](#).

### 5.3.12 Wastewater drain connection

If the mobile dental unit is intended to be connected to an external wastewater line, the requirements specified in ISO 7494-2:2022, 5.3.13 shall apply by replacing stationary dental unit with mobile dental unit.

Test in accordance with [7.1](#).

### 5.3.13 Wastewater container

If the mobile dental unit is equipped with a wastewater container, the instructions for use and the technical description shall specify the capacity.

Test in accordance with [7.1](#).

## 5.4 Air system

### 5.4.1 Incoming dental air

If the mobile dental unit is intended to be connected to an external compressed air source equipment, the requirements specified in ISO 7494-2:2022, 5.4.2 shall apply by replacing stationary dental unit with mobile dental unit.

Test in accordance with [7.1](#).

### 5.4.2 Purity class of dental air supplied by an integrated compressed air source equipment

If the mobile dental unit is equipped with an integrated compressed air source equipment, the purity class of dental air supplied by the equipment shall be [2:4:2] in accordance with ISO 8573-1.

Test in accordance with [7.1](#). Test results shall conform to ISO 8573-1.

### 5.4.3 Particle filters

A filter with an effective mesh size not exceeding 50 µm shall be installed at the incoming dental air connection point of the mobile dental unit or at the connection point to the integrated compressed air source equipment.

Test in accordance with [7.2](#).

### 5.4.4 Bacterial filters

If the mobile dental unit air supply is equipped with a filter intended to restrict the passage of bacteria, the requirements specified in ISO 7494-2:2022, 5.4.4 shall apply by replacing stationary dental unit with mobile dental unit.

Test in accordance with [7.1](#).

### 5.4.5 Condensate drain

The mobile dental unit shall be equipped with a means to drain off a condensate water, if necessary.

Test in accordance with [7.1](#).

### 5.4.6 Compressed air filter

If an air dryer is installed to the mobile dental unit, the grade of filtration for dryer system shall be ≤ 5 µm.