INTERNATIONAL STANDARD

ISO 7492

Third edition
2018-01

Dentistry — Dental explorer

Médecine bucco-dentaire — Sondes exploratrices dentaires

Reference number
ISO 7492:2018(E)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Published in Switzerland

Contents

Page

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).

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).

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

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 106, *Dentistry*, Subcommittee SC 4, *Dental instruments*.

This third edition cancels and replaces the second edition (ISO 7492:1997), which has been technically revised.

The main changes compared to the previous edition are as follows:

a) Reduction of forms by combination of similar forms in one Figure (e. g Form A and Form B in Figure 2; Form C and Form D in Figure 3; Form E and Form F in Figure 4).

b) Addition of new forms shown in Figure 7, Figure 8 and Figure 9;

c) Addition of requirement for resistance to reprocessing.

Dentistry — Dental explorer

1 Scope

This document specifies the dimensions and performance requirements for dental explorers.

This document is not applicable to endodontic explorers.

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 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method*

ISO 6508-1, *Metallic materials — Rockwell hardness test — Part 1: Test method*

ISO 7153-1, *Surgical instruments — Materials — Part 1: Metals*

ISO 17664, *Processing of health care products — Information to be provided by the medical device manufacturer for the processing of medical devices*

3 Terms, definitions and symbols

3.1 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 terminological databases for use in standardization at the following addresses:

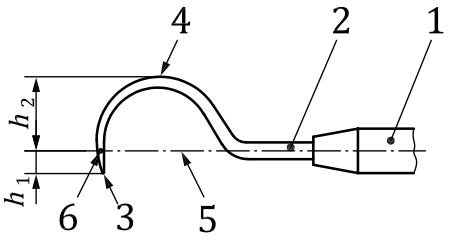
— IEC Electropedia: available at https://www.electropedia.de

— ISO Online browsing platform: available at https://www.iso.org/obp

3.1.1
dental explorer
handheld dental instrument with a pointed tip designed for tactile examination of tooth surfaces

Note 1 to entry: See Figure 1.

Note 2 to entry: Dental explorer is used to examine teeth for decay (caries), calculus, furcations, or other abnormalities.



Key

1 handle
2 shank
3 working tip
4 first bending point
5 centreline
6 datum point
h_1 working end height
h_2 shank height

Figure 1 — Designation of parts and dimensions for dental explorers

3.1.2
datum point
section point between the centreline of the handle, at right angle to the centreline, and the working tip

Note 1 to entry: The datum point is where h_1 and h_2 meet.

3.1.3
handle
area used for holding the *dental explorer* (3.1.1) during tactile exploration

3.1.4
shank
part of the *dental explorer* (3.1.1) that connects the working end to the handle

3.1.5
working end
part of the *dental explorer* (3.1.1) after the first bend of the shank including the working tip

Note 1 to entry: The working end is the combination of h_1 and h_2 directly on the explorer.

3.1.6
working tip
active part of the working end which will be first to contact the tooth surface

3.2 Symbols and abbreviated terms

For the purposes of this document, the following symbols and abbreviated terms apply, and are shown in Figure 1 to Figure 9.

b length of working tip (only used in Figure 5)

h_1 working end height

h_2 shank height

r working end radius

α working end angle

β secondary angle of working tip (only used in Figure 5)

4 Requirements

4.1 Materials

4.1.1 Material of the working end

The working end of a dental explorer shall be made of metallic materials in accordance with ISO 7153-1.

4.1.2 Material of the handle

The material for the handle, selected at the discretion of the manufacturer, shall meet the requirements of Clause 5.

5.3 does not apply.

4.2 Location of measurement points

The location of the points of measurement for dental explorers shall be as shown in Figure 1 and in Table 1.

Table 1 — Measurement of dimensions for dental explorers

Symbol	Meaning	Points of measurement
b	Length of working tip (only used in Figure 5)	distance from the extreme tip of the working end, parallel to the centre-line of the working tip, to the first bend of the working end
h_1	Working end height	distance from the datum point, at right angles to the centreline of the shank, to the farthest extremity of the working tip
h_2	Shank height	distance from the datum point, at right angles to the centreline of the shank, to the furthest point on the external surface of the first bend of the working end
r	Working end radius	radius of curvature of the inside of the first bend of the working end
α	Working end angle	angle between the centreline of the shank and the working end
β	Secondary angle of working tip (only used in Figure 5)	angle between the centreline of the shank and a line parallel to the tangent to the first bend of the working end

4.3 Shape and dimensions

The dental explorer shall have one of the forms shown in Figure 2 to Figure 9.

Commonly used dimensions are shown in Table 2. The column is arranged according to the increase in the dimension h_1.

The dimensions shall be measured in accordance with Table 1 and Figure 1.

The working tip shall be pointed but the exact shape and design of the working end is left to the discretion of the manufacturer.

The maximum length of a dental explorer shall be at the manufacturer's discretion, but it should be noted that overall lengths in excess of 178 mm can cause difficulty in containment within a sterilization cassette.

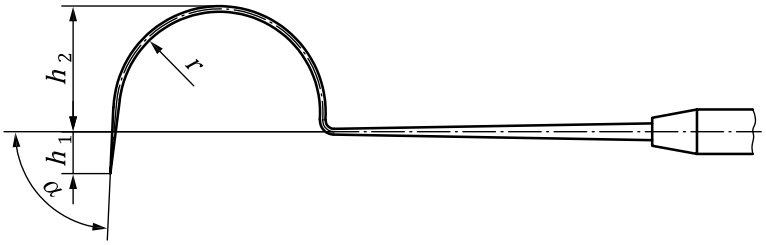


Figure 2 — Dental explorer

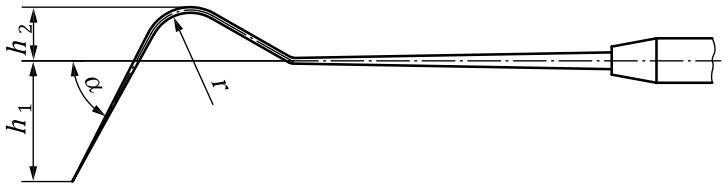


Figure 3 — Dental explorer

Figure 4 — Dental explorer

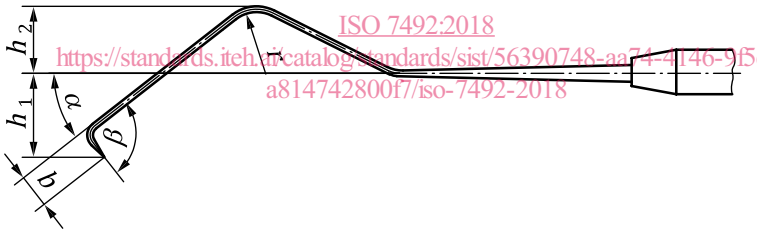


Figure 5 — Dental explorer

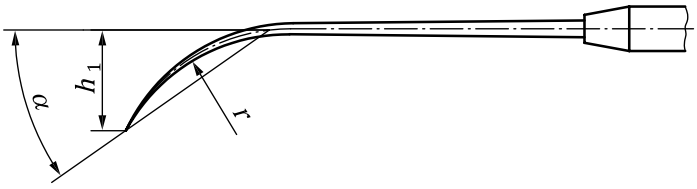


Figure 6 — Dental explorer

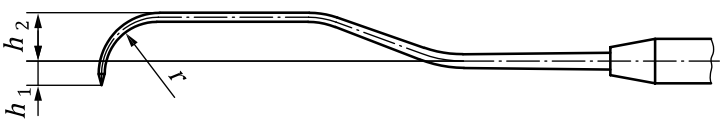


Figure 7 — Dental explorer

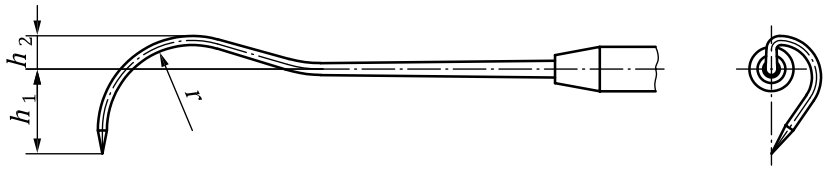


Figure 8 — Dental explorer

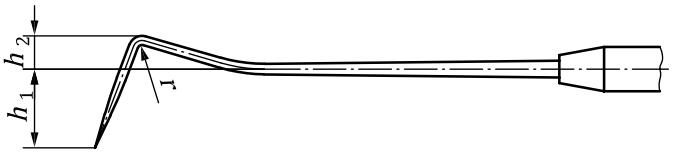


Figure 9 — Dental explorer

Table 2 — Dimensions of dental explorer

Linear dimensions in millimetres
Angular dimensions in degrees

Shape	b ±0,5	h_1 ±0,5	h_2 ±0,5	r ±0,5	α ±10°	β ±10°
Figure 2	—	1,5	9,0	6	90°	—
	—	2,0	9,0	6	70°	—
	—	2,5	7,5	6	85°	—
	—	3,0	8,5	6	90°	—
	—	4,2	3,8	4	85°	—
Figure 3	—	6,3	4,0	1,5	40°	—
	—	7,2	3,2	2,5	62°	—
	—	8,2	4,1	2,5	85°	—
	—	9,0	3,0	2	90°	—
	—	9,0	3,0	2	60°	—
	—	10,0	3,0	2	85°	—
Figure 4	—	4,5	—	—	80°	—
	—	6,0	—	—	67°	—
	—	11,5	—	—	67°	—
	—	12,0	—	—	80°	—
	—	13,0	—	—	40°	—
	—	14,3	—	—	70°	—
Figure 5	1,6	5,2	5,8	5	50°	260°
	1,6	6,5	5,8	5	50°	100°
	2,0	5,0	4,0	2	38°	125°
Figure 6	—	4	—	11	25°	—
	—	5	—	4	55°	—
	—	5	—	12	25°	—
	—	6	—	11	35°	—
	—	7	—	8	40°	—
	—	11	—	11	45°	—
	—	11,5	—	8	55°	—