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# Dentistry — Trephine burs

*Médecine bucco-dentaire — Fraises-trépans*



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# Contents

Page

# Foreword

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



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

Dental trephine burs are dental instruments used in dental implantology.

# Dentistry — Trephine burs

## 1 Scope

This document specifies requirements and their test methods for trephine burs used in dentistry especially for oral implantology procedures such as collecting bone and/or removing an implant. It also specifies requirements for their marking and labelling.

## 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 1797, *Dentistry — Shanks for rotary and oscillating instruments*

ISO 1942, *Dentistry — Vocabulary*

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

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



ISO 8325:2004, *Dentistry — Test methods for rotary instruments*

ISO 13504, *Dentistry — General requirements for instruments and related accessories used in dental implant placement and treatment*



ISO 16443, *Dentistry — Vocabulary for dental implants systems and related procedure*

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 1797, ISO 1942, ISO 16443 and the following apply.

ISO and IEC maintain terminological 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/

**3.1.1**
**trephine bur**
rotary instrument used together with a handpiece in oral implantology procedures such as preparing and collecting bone cores or removing implants

## 3.2 Symbols

$D_1$ outer diameter of working part

$D_2$ inner diameter of working part

$D_3$ diameter of shank

$D_4$ diameter of the operative part

$L_1$ overall length

$L_2$ length of shank

$L_3$ length of operative part

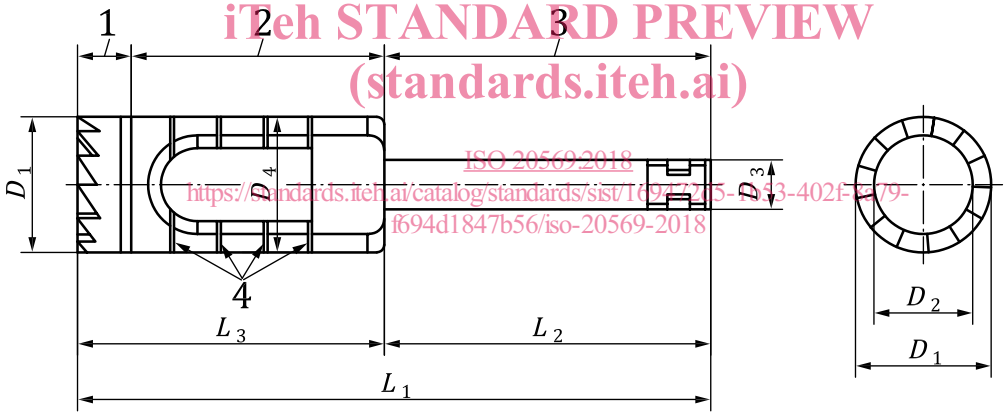
# 4 Classifications

For the purposes of this document, trephine burs shall be classified according to the purposes of use into the following types:

— Type 1: for bone collection (Figure 1);

— Type 2: for implant removal (Figure 2).






**Key**

1 working part with teeth

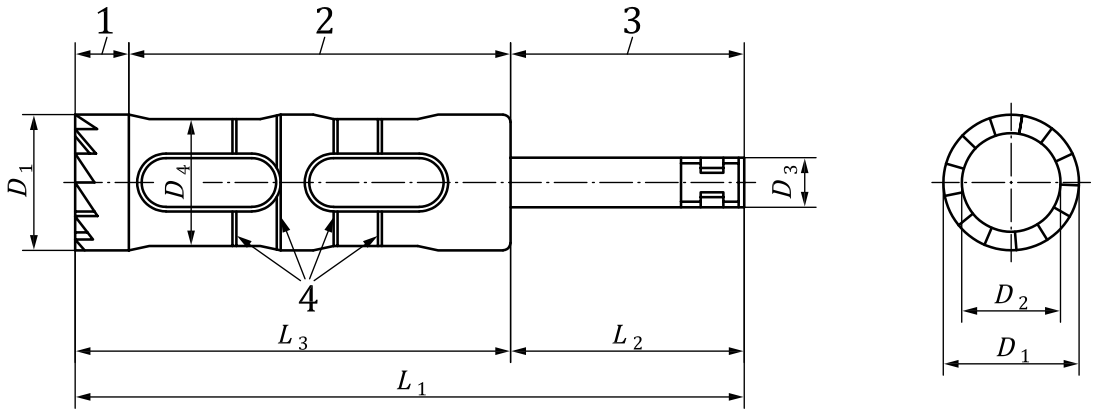
2 operative part

3 shank

4 marking lines

The design and number of lateral openings are left to the discretion of the manufacturer. They should be designed in such a way not to decrease the resistance nor the performance of the trephine bur.

**Figure 1 — Trephine burs Type 1 for bone collection**




**Key**

1 working part with teeth
2 operative part
3 shank
4 marking lines

The design and number of lateral openings are left to the discretion of the manufacturer. They should be designed in such a way not to decrease the resistance nor the performance of the trephine bur.

**Figure 2 — Trephine bur Type 2 for implant removal**



## 5 Requirements



### 5.1 Selection of metals

The metals of the trephine bur shall be in accordance with ISO 7153-1 and ISO 13504.

### 5.2 Surface finish

Surface treatment shall be left to the discretion of the manufacturer. The surfaces of the trephine bur shall be free of visible surface defects when tested in accordance with 6.1.

### 5.3 Dimensions

#### 5.3.1 Number of teeth

The number of teeth shall be left to the discretion of the manufacturer.

#### 5.3.2 Diameter of the working part and wall thickness

Outer diameter of the working part ($D_1$) shall be specified for Type 1, where it shall be between 2 mm to 16 mm.

Inner diameter of the working part ($D_2$) shall be specified for Type 2, where it shall be between 2 mm to 15 mm.

Values shall be within ±0,05 mm of manufacturer's stated value when measured in accordance with 6.2.

For both Type 1 and Type 2, diameter of working part ($D_1$) shall be greater than the diameter of operative part ($D_4$). For Type 1, working part shall be tapered to match the diameter of operative part ($D_4$).

The wall thickness of the trephine bur is left to the discretion of the manufacturer, but shall be designed to withstand a torque of 80 Ncm, tested in accordance with 6.6.