



SLOVENSKI STANDARD
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Dentistry - Dental rotary instruments - Test methods (ISO 8325:1985)

Dentistry - Dental rotary instruments - Test methods (ISO 8325:1985)

Zahnheilkunde - Zahnärztliche rotierende Instrumente - Prüfverfahren (ISO 8325:1985)

Art dentaire - Instruments rotatifs dentaires - Méthodes d'essai (ISO 8325:1985)

Ta slovenski standard je istoveten z: EN 28325:1990

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11.060.25 Zobotehnični instrumenti Dental instruments

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EUROPEAN STANDARD

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Key words: Dentistry, dental equipment, dental rotary-cutting instruments, tests, dimensional measurements

English version

Dentistry - Dental rotary instruments - Test
methods (ISO 8325:1985)

Art dentaire - Instruments rotatifs
dentaires - Méthodes d'essai (ISO
8325:1985)

Zahnheilkunde - Zahnärztliche
rotierende Instrumente - Prüfverfahren
(ISO 8325:1985)

This European Standard was accepted by CEN on 1989-12-20 and is identical to the ISO standard as referred to.

CEN members are bound to comply with the requirements of the CEN/CENELEC Common Rules 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 Central Secretariat 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 CEN Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue Bréderode 2, B-1000 Brussels

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Ref. No. EN 28 325:1989 E

Brief History

This draft European Standard has been taken over by CEN/TC 55, "Dental Products" from the work of the International Organization for Standardization (ISO).

The content of this draft European Standard is identical with the International Standard 8325 of ISO published in 1985.

The results of the Formal Vote being positive, the CEN Technical Board ratified this European Standard on 1989-12-20.

In accordance with the CEN/CENELEC Common Rules, the following countries are bound to implement this European Standard : Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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International Standard



8325

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Dental rotary instruments — Test methods

Instruments rotatifs dentaires — Méthodes d'essai

First edition — 1985-11-15

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UDC 616.314-7 : 621.9.02

Ref. No. ISO 8325-1985 (E)

Descriptors : dentistry, dental instruments, dental rotary-cutting instruments, tests, dimensional measurements.

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8325 was prepared by Technical Committee ISO/TC 106, *Dentistry*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Dental rotary instruments — Test methods

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1 Scope and field of application

This International Standard specifies methods of test for dental rotary instruments such as burs, cutters, diamond instruments and abrasives but excludes root canal instruments. In the relevant product standards reference is made to the methods specified in this International Standard.

For the testing of root canal instruments, see ISO 3630.

2 References

ISO 1101, *Technical drawings — Geometrical tolerancing — Tolerancing of form, orientation, location and run-out — Generalities, definitions, symbols, indications on drawings.*

ISO 1797, *Dental rotary instruments — Shanks.*

ISO 2859, *Sampling procedures and tables for inspection by attributes.*

ISO 3630, *Dental root canal instruments.*

3 Test methods

3.1 Diameter of working part

3.1.1 Apparatus

One of the following devices or other instruments of equivalent accuracy shall be used to determine the diameter of the working part :

- a) **tungsten carbide ring gauges** which are regularly checked with mating plugs;

- b) **dial indicator** with flat tungsten carbide blades;

- c) **air gauge**;

- d) **dial indicator bore gauge.**

The measuring device shall be accurate to 0,01 mm.

Mechanical measuring devices shall have a measuring force of $\leq 1,5$ N.

In case of dispute, the reference method shall be the tungsten carbide ring gauge.

3.1.2 Measurement point

On cylindrical instruments, the measurement point shall be the middle of the working part, unless otherwise specified.

3.1.3 Procedure

For burs, cutters and abrasives, make one measurement at the largest diameter of the working part of the instrument. See figures 1 and 2.

For diamond instruments, make three measurements at angles of 120° at the relevant diameter as shown in figure 3. Release the force, lift the test piece and rotate it before each measurement. Use the same force for each measurement.

Record the average of the three values.

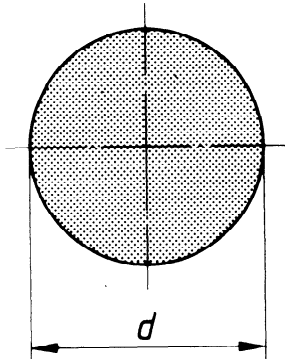


Figure 1 — Measurement of abrasives

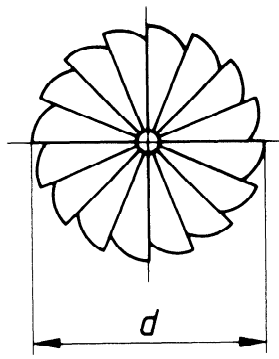


Figure 2 — Measurement of burs and cutters

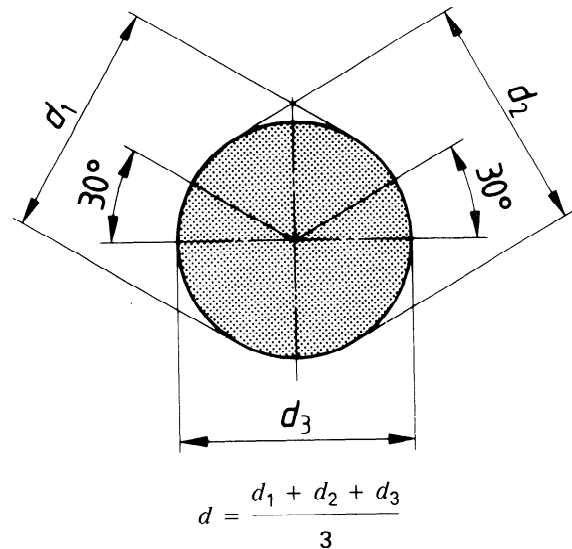


Figure 3 — Measurement of diamond instruments

3.2 Neck diameter

3.2.1 Apparatus

Dial indicator, with knife-edged tungsten carbide blades of $0,3 \pm 0,02$ mm thickness, or other devices of equivalent accuracy.

The measuring device shall be accurate to 0,01 mm.

Mechanical measuring devices shall have a measuring force of $< 1,5$ N.

3.2.2 Measurement point

The measurement point shall be the smallest diameter behind the working part. This also applies to diamond instruments with coated necks.

3.2.3 Procedure

Make one measurement of the neck of the instrument.

3.3 Length of working part

3.3.1 Apparatus

One of the following devices or other instruments of equivalent accuracy shall be used to determine the length of the working part :

- toolmaker's microscope;
- calibrated blade-type micrometer;
- gauge;
- shadowgraph.

The measuring device shall be accurate to 0,1 mm.

3.3.2 Measurement points

The measurement points shall be the points at the ends of the shortest length of the working part, including, where applicable, the coated neck.

3.3.3 Procedure

Make one measurement of the length of the working part.

3.4 Overall length

3.4.1 Apparatus

The apparatus listed in 3.3.1 is suitable.

3.4.2 Measurement points

The measurement points shall be the points at the ends of overall length, including tip and shank end.

3.4.3 Procedure

Make one measurement of the overall length.

3.5 Taper

Determine the angle of the tapers by making one measurement using a shadowgraph, a toolmaker's microscope or a comparator accurate to 1'.

3.6 Run-out

3.6.1 Apparatus

One of the following devices shall be used to determine the total indicated run-out, t :

3.6.1.1 Holding device

- split V-block with adjustable distances l_1 and l_2 , see figures 4a) and b);
- equivalent device, for example precision chuck.

3.6.1.2 Measuring device

Dial indicator, dial gauge, comparator, toolmaker's microscope, shadowgraph or equivalent measuring device.

The measuring devices shall be accurate to 0,01 mm.

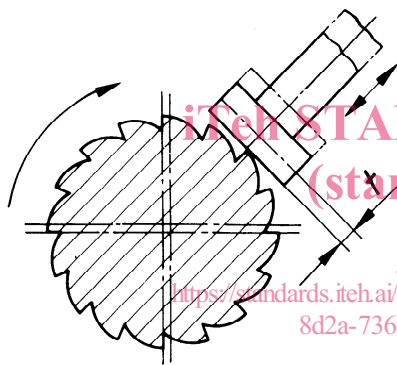
The lengths l_1 and l_2 , which are dependent on the shafts and the lengths of the instrument tested, shall be in accordance with the table.

Table – Dimensions l_1 and l_2

Dimensions in millimetres

Type of shaft (in accordance with ISO 1797)	Overall lengths of instrument*	l_1	l_2
1	All lengths	10	3
2	All lengths	9	20
3	16,5 to 18,5	8	1
3	19 to 30	10	1

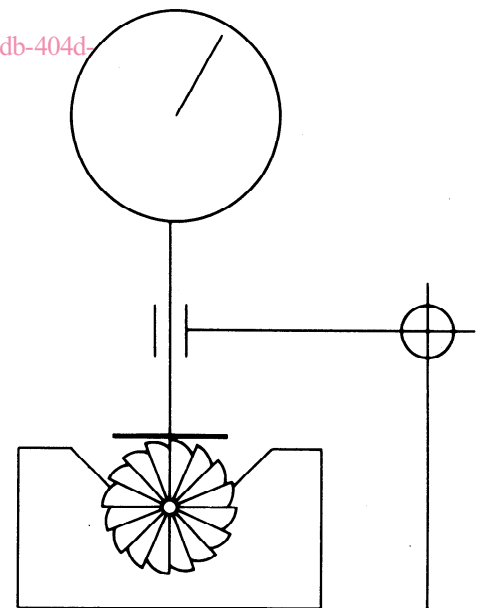
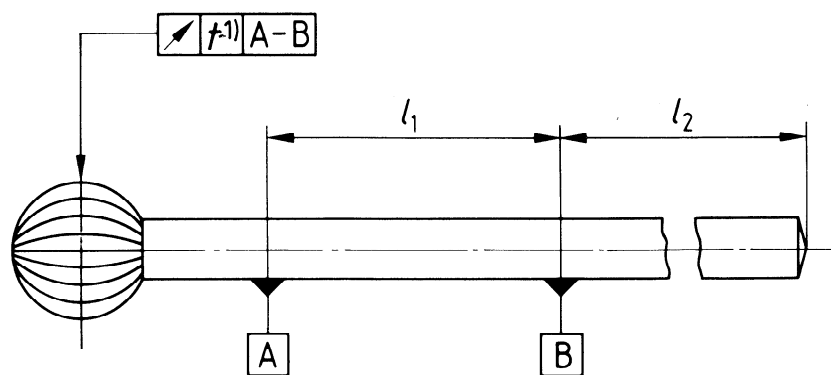
* See the relevant product standard.



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1) For the value of the run-out tolerance, refer to the relevant product standard. See also ISO 1101.

Figure 4a) – V-block measuring device (measuring the total indicated run-out, t , at the largest diameter of the working part)