
**Dentistry — Diamond rotary
instruments —**

**Part 3:
Grit sizes, designation and colour code**

Art dentaire — Instruments rotatifs diamantés —

Partie 3: Tailles des grains, désignation et code de couleur

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 7711-3 was prepared by Technical Committee ISO/TC 106, *Dentistry*, Subcommittee SC 4, *Dental instruments*.

This second edition cancels and replaces the first edition (ISO 7711-3:1992), which has been technically revised to include the following changes:

- a) reduction from 7 classes for the colour code to 6 classes (deletion of “very fine”);
- b) introduction of an abbreviation for the colour code.

ISO 7711 consists of the following parts, under the general title *Dentistry — Diamond rotary instruments*:

- *Part 1: Dimensions, requirements, marking and packaging*
- *Part 2: Discs*
- *Part 3: Grit sizes, designation and colour code*

Introduction

The first edition of this part of ISO 7711 was published in 1992. It was the first attempt to group the diamond grit used for dental rotary instruments and to specify a designation and a colour code for the grit size areas. The rapid development of the use of diamond grit for dental instruments and the possibility of refined separation and thus a clearer classification of diamond grit necessitated a revision of this part of ISO 7711.

This revision offers the opportunity to provide abbreviations for the terms used, to align them with similar standards for dental rotary instruments.

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Dentistry — Diamond rotary instruments —

Part 3: Grit sizes, designation and colour code

1 Scope

This part of ISO 7711 specifies the designation, colour code and grit sizes for diamond rotary instruments which are used commonly in a dental surgery. It applies to all types of dental diamond rotary instruments independent of type and shape.

NOTE Attention is drawn to ISO 6360 which specifies a number coding system for the identification of dental rotary instruments of all types.

2 Normative references

The following referenced documents are indispensable for the application 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 6106, *Abrasive products — Checking the grit size of superabrasives*

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3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

macrogrit

grit with grain size distribution which is determined by sieving

3.2

microgrit

grit with grain size distribution which is determined by sedimentation

4 Designation, colour code, grit sizes

4.1 Designation

The designation of the diamond instruments in regard to the fineness of the diamond grit used shall conform with the designation given in Table 1.

4.2 Colour code

The colour code complements the designation. Usage of the colour code is optional, at the discretion of the manufacturer. If colour coding is used, the colours shall be those specified in Table 1.

The location on the diamond instrument where the colour is applied is at the discretion of the manufacturer.

4.3 Grain size distribution

4.3.1 Macrogrits

The method for determining or verifying the grain size distribution of macrogrits for diamonds used in the manufacture of industrial products (e.g. grinding wheels, saws) as specified in ISO 6106, for grain sizes between 1 180 μm and 41 μm , shall be used.

The series of diamond grit sizes is designated as the D series (D 1181 to D 46), where “D” denotes diamond.

NOTE Further information is given in references [13] and [15] (see Bibliography).

4.3.2 Microgrits

Currently no internationally accepted method for determining or verifying the grain size distribution of microgrits for diamonds is available. Therefore methods from regional standards or national standards are used.

The series of diamond grit sizes is designated as the M series, where “M” denotes microgrit.

NOTE Further information is given in references [12] and [14] (see Bibliography).

4.4 Grit sizes

The grit sizes as specified in Table 1 shall be used for all types of diamond instruments.

The grit sizes and their classification in regard to their fineness are selected according to relevant national or international regulations.

Because of the difficulty in separating grain sizes, overlapping areas are unavoidable and commonly accepted.

Columns 3 and 4 indicate colour codes and their equivalent grit size ranges, respectively.

Table 1 — Designation, colour code, grit sizes

Designation	Abbreviation	Colour code	Grit size range μm	Median grain size μm	Grit designation
ultra-fine	UF	white	4 to 14	8	M 4 to M 14
extra-fine	EF	yellow	10 to 36	25	M 10 to M 36
fine	F	red	27 to 76	46	M 27 to D 76
medium	M	blue	64 to 126	107	D 64 to D 126
coarse	C	green	107 to 181	151	D 107 to D 181
very coarse	VC	black	151 to 213	181	D 151 to D 213

Bibliography

- [1] ISO 565, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*
- [2] ISO 2591-1, *Test sieving — Part 1: Methods using test sieves of woven wire cloth and perforated metal plate*
- [3] ISO 3310-1, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*
- [4] ISO 6344-1, *Coated abrasives — Grain size analysis — Part 1: Grain size distribution test*
- [5] ISO 6344-2, *Coated abrasives — Grain size analysis — Part 2: Determination of grain size distribution of macrogrits P12 to P220*
- [6] ISO 6344-3, *Coated abrasives — Grain size analysis — Part 3: Determination of grain size distribution of microgrits P240 to P2500*
- [7] ISO 6360 (all parts), *Dentistry — Number coding system for rotary instruments*
- [8] ISO 8486-1, *Bonded abrasives — Determination and designation of grain size distribution — Part 1: Macrogrits F4 to F220*
- [9] ISO 8486-2, *Bonded abrasives — Determination and designation of grain size distribution — Part 2: Microgrits F230 to F1200*
- [10] ISO 9138, *Abrasive grains — Sampling and splitting*
- [11] ISO 9284, *Abrasive grains — Test-sieving machines*
- [12] ANSI B 74.20, *Grading of Diamond Powder in Sub-Sieve Sizes*, American National Standards Institute, 1819 L Street, NW, 20036 Washington, DC, USA
- [13] ASTM E 11, *Standard Specification for Wire Cloth and Sieves for Testing Purposes*, American Society for Testing and Materials, 100 Barr Harbor Drive, PO Box C 700, West Conshohocken, PA, USA
- [14] FEPA 60, *Standard for Diamond Micro Powders*, Federation of European Producers of Abrasives, 20, Avenue Reille, 75014 Paris, France
- [15] FEPA 61, *Standard for Superabrasives Grain Sizes*, Federation of European Producers of Abrasives, 20, Avenue Reille, 75014 Paris, France

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