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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).

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).

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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.

This document was prepared by Technical Committee ISO/TC 174, *Jewellery and precious metals*.

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.

This corrected version of ISO 24016:2020 incorporates the following corrections:

— In Table 2, lines I and K, the "+" signs have been deleted.

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Introduction

The aim of a standard for grading unmounted polished diamonds is to set rules for determining with maximum precision and accuracy the mass, colour, clarity and cut of individual polished diamonds. On one hand, based on these four criteria - also known as "the 4C's" - the diamond trade evaluates the value of diamonds. On the other hand, some diamond grading reports may be issued based on different standards by different laboratories, potentially leading to different results for the same individual diamond. This situation damages the reputation of the whole diamond trade. Hence, the need for a unique ISO standard for grading polished diamonds.

Today, the need for an ISO standard for the grading of polished diamonds is supported by recent agreements between international and national diamond organizations with CIBJO (The World Jewellery Confederation) with the aim of adopting CIBJO's unique diamond grading and diamond nomenclature standard.

Together with ISO 18323, which sets the nomenclature for diamonds, synthetic diamonds and diamond simulants, an ISO standard for the grading of polished diamonds will strengthen the trust in the diamond industry worldwide.

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Jewellery and precious metals — Grading polished diamonds — Terminology, classification and test methods

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1 Scope

This document specifies the terminology, classification and the methods that are used for the grading and description of single unmounted polished diamonds over 0,25 carat (ct).

This document applies to natural, unmounted, polished diamonds. It is not to be used for fancy coloured diamonds, synthetic diamonds, treated diamonds (other than is allowed for in 7.4), nor for assembled stones.

2 Normative references

The following document is 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 18323, Jewellery — Consumer confidence in the diamond industry~~

ISO 18323, Jewellery — Consumer confidence in the diamond industry

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 18323 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 <http://www.electropedia.org/>

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3.1 polished diamond

diamond with a defined cut (3.5)

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3.1.1 diamond

mineral consisting essentially of carbon crystallised in the isometric (cubic) crystal system, with a hardness on the Mohs' scale of 10, a specific gravity of approximately 3,52 and a refractive index of approximately 2,42, created by nature

Note 1 to entry: The denomination "diamond" without further specification always implies "natural diamond". These two terms are equivalent and carry the same meaning.

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3.1.2 treated diamond

diamond (3.1.1) having undergone any human intervention other than cutting, polishing, cleaning and setting, to permanently or non-permanently change its appearance

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EXAMPLE Coating, fracture filling, heating, irradiation, laser drilling, HPHT treatment or any other physical or chemical process.

3.1.3 synthetic diamond laboratory-grown diamond laboratory-created diamond

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artificial product that has essentially the same chemical composition, crystal structure and physical (including optical) properties as a *diamond* (3.1.1)(3.1.1)

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Note 1-to entry:-The English terms laboratory-created diamond or laboratory-grown diamond may be used synonymously with synthetic diamond. Where there is no acceptable local direct translation of the English terms laboratory grown diamond or laboratory created diamond then only the translation of the term synthetic diamond should be used.

Note 2-to entry:-Abbreviations such as "lab grown", "lab created" "lab diamond" or "syn diamond" shall not be used.

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Note 3-to entry:-The word "laboratory" refers to the facility which produces the synthetic diamonds. This should not be confused with a gemmological laboratory that is dedicated to the analysis, authentication, identification, classification (grading) of diamonds.

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3.1.4 composite stone assembled stone
stone constructed of two or more parts

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3.2 Internal characteristics

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3.2.1 bearding
tiny *feathers* (3.2.8)(3.2.8) extending in from the girdle

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3.2.2 bruise
surface percussion mark, accompanied by tiny, root-like *feathers* (3.2.8)(3.2.8)

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3.2.3 cavity
large or deep opening

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3.2.4 chip
damage, usually occurring along the girdle or culet, which alters the outline of the stone

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Note 1-to entry:-Also to be considered as an external characteristic (see 3.3.4) depending upon depth.

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3.2.5 cleavage
large *feather* (3.2.8)(3.2.8) occurring in a plane, parallel to a crystal face

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