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**Jewellery — Consumer confidence in
the diamond industry**

Bijouterie — Confiance du consommateur dans l'industrie du diamant

Documento de Trabajo



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Documento de trabajo



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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. 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. 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.

The committee responsible for this document is ISO/TC 174, *Jewellery*.

Documento

Introduction

A diamond is a mineral; it forms and grows under natural geological processes.

The jewellery industry relies upon product integrity and transparency for consumers to have confidence in the products that they are buying. Consumers will not always have the technical expertise to understand the exact provenance and processing of a diamond and as a result, are reliant upon labelling and product descriptions as well as guidance from the individual seller.

The recent development of new technologies in the diamond industry has provided consumers with greater availability of synthetic diamonds which are produced in a factory or laboratory (see 2.4 NOTE 3). They have essentially the same chemical composition and physical (including optical) properties as a diamond and essentially the same crystal structure but due to the growth environment, differences in the growth structure take place at the atomic level.

A major concern held by the diamond industry is that without clear and accurate labelling, the increased availability of synthetic diamonds to consumers can cause confusion over exactly what type of product is being sold to them. While the provenance and labelling of a diamond is widely understood, the consumer will be less familiar with the variety of terms that have been used by sellers to describe synthetic diamonds.

The diamond industry is concerned that a consumer can inadvertently buy a synthetic diamond or other product believing it to be a diamond and similarly, the synthetic-diamond industry does not want its products to be seen as a cheap alternative to a diamond or as a product that consumers will only buy if they are not fully aware of its provenance.

Considering that synthetic diamonds are nowadays set in jewellery pieces it is therefore in the interests of both sectors of the market that consumers are able to make informed purchasing decisions.

This document is specifically designed to be understood by the consumer and seeks to address the potential for confusion by setting out clear and accurate guidelines on accepted nomenclature.

The Standard is based largely on existing industry self-regulation documents and labelling that provide voluntary guidance for the industry on how to describe diamonds, treated diamonds, synthetic diamonds, composite diamonds and imitations of diamonds.

The following definitions apply in understanding how to implement an ISO International Standard and other normative ISO deliverables (TS, PAS, IWA).

- “shall” indicates a requirement;
- “should” indicates a recommendation;
- “may” is used to indicate that something is permitted;
- “can” is used to indicate that something is possible, for example, that an organization or individual is able to do something.

ISO/IEC Directives, Part 2 (sixth edition, 2011), 3.3.1, defines a requirement as an “expression in the content of a document conveying criteria to be fulfilled if compliance with the document is to be claimed and from which no deviation is permitted.”

ISO/IEC Directives, Part 2 (sixth edition, 2011), 3.3.2, defines a recommendation as an “expression in the content of a document conveying that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required, or that (in the negative form) a certain possibility or course of action is deprecated but not prohibited.”

Documento de trabajo

Jewellery — Consumer confidence in the diamond industry

1 Scope

This International Standard specifies a set of permitted descriptors for the diamond industry and is specifically designed to be understood by the consumer. The Standard also includes a series of definitions which aim to provide further clarity for traders and maintain consumer confidence in the diamond industry as a whole.

This International Standard will cover the nomenclature to be used by those involved in the buying and selling of diamonds, treated diamonds, synthetic diamonds, composite diamonds and imitations of diamonds.

2 Terms and definitions

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

2.1

natural

formed completely by nature without human intervention during the formation

2.2

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.

2.3

treated diamond

diamond (2.2) having undergone any human intervention other than cutting, polishing, cleaning and setting, to permanently or non-permanently change its appearance

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

2.4

synthetic diamond

laboratory-grown diamond

laboratory-created diamond

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

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.

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

2.5

composite stone
assembled stone

stone constructed of two or more parts

2.6

brilliant

<noun>round polished diamond with a brilliant cutting style

2.7

artificial stone

crystalline stone that has no natural counterpart

2.8

imitation of diamond
diamond simulant

any artificial product used to imitate the appearance of *diamond* (2.2)

See 3.6.

2.9

stone

gemstones (including diamonds), treated gemstones, synthetic stones, composite stones and artificial stones usable for jewellery

2.10

gemstone

mineral of natural origin, rough, cut and/or polished, often used in jewellery for reasons of combined beauty, rareness and value

Note 1 to entry: "Gemstones" may be qualified with the terms "precious", "real", "genuine" and "natural".

2.11

gem

gemstone and/or organic substance of natural origin, often used in jewellery for reasons of combined beauty, rareness and value

Note 1 to entry: "Gems" may be qualified with the terms "precious", "real", "genuine" and "natural".

2.12 Characteristics

2.12.1

clarity

relative absence or presence of internal characteristics/inclusions and external characteristics/blemishes

2.12.2

colour

relative absence or presence of hue, saturation and lightness in standardized observation conditions

2.12.3

cut

comprises shape, proportions, symmetry and polish

2.12.4

carat

unit of weight

Note 1 to entry: One carat being equivalent to 200 mg (0,20 g).

2.12.5**shape**

outline when viewed perpendicular to the table facet

2.12.6**total weight**

combined weight of multiple diamonds, combined weight of multiple treated diamonds, combined weight of multiple synthetic diamonds or combined weight of multiple imitations of diamonds

Note 1 to entry: In the case of different materials being combined in a piece of jewellery or sold loose, the weight of the different categories of stones shall not be totalled.

2.12.7**fluorescence**

appearance of luminescence when viewed under ultraviolet (UV) light

2.12.8**diamond grading**

to determine and to describe the most important features of a polished diamond (see [2.2](#))

EXAMPLE Clarity, colour, cut and carat weight.

Note 1 to entry: *Synthetic diamonds* ([2.4](#)) may also be graded.

2.13 Treatments**2.13.1****treatment**

any human intervention, other than the accepted practices of cutting, polishing, cleaning and setting that alters the appearance of a stone

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

2.13.2**fracture filling**

to fill the whole or part of a fracture/fissure with a substance, e.g., glass, with the purpose of making the fracture/fissure less visible

2.13.3**irradiation**

exposure to radiation to change the colour

2.13.4**laser drilling**

burning a channel with a laser between the surface of a diamond and an inclusion (generally black), the channel being used as a conduit to allow a chemical treatment of the inclusion with the purpose of making the inclusion less visible

2.13.5**HPHT treatment**

changing the colour through a treatment involving both High Pressure and High Temperature (HPHT)

Note 1 to entry: HPHT treatment can also affect the clarity.

2.13.6**coating**

substance applied over the surface, or part of the surface for modifying the appearance

2.14 Documentation

2.14.1

commercial documents

written documents, including electronically, digitally or on the internet, to record the terms of a sale and purchase price whether actual or pending

EXAMPLE Certificates, bills of sale, invoices, memorandums, approbations, offers, receipts, advertisements, appraisals or any other documents of a similar nature or meaning

2.14.2

disclosure

release of relevant information about a *diamond* (2.2), *synthetic diamond* (2.4) or *imitation of diamond* (2.8) and their treatments

3 Disclosure

3.1 Misuse of terminology

It is contrary to the purposes of this document to make any misleading or deceptive statement, representation or illustration relating to origin, formation, production or condition of any diamond, treated diamond, synthetic diamond, imitation of diamond or composite diamond that does not conform in all respects with any and all the clauses contained herein, in their selling, marketing or distribution as defined in this International Standard.

3.2 Diamond

The denomination “diamond” without further qualification shall only be used for diamonds in accordance with the definition 2.2.

3.3 Treated diamond

A diamond having undergone a treatment shall be disclosed as a “treated diamond” and/or a specific reference to the particular treatment and the description shall be immediately apparent and unambiguous.

The terms “natural treated diamond” or “treated natural diamond” shall not be used because they can be misleading.

Any special care requirements that the treatment creates shall be disclosed.

No abbreviations shall be used.

3.4 Synthetic diamond

A synthetic diamond shall be disclosed as defined in 2.4 and the description shall be immediately apparent and unambiguous. For the disclosure of a synthetic diamond, no abbreviation shall be used.

The qualifiers such as natural, real, genuine, precious, cultured, cultivated and gem shall not be used to describe any synthetic diamond.

Brand names and manufacturers names combined with the word diamond are insufficient disclosure when applied to synthetic diamonds.

Synthetic diamonds can have undergone a treatment.

3.5 Composite stone

Composite stones in which all parts are composed of diamonds shall be called composite diamond or diamond doublet.

A composite stone where some but not all the parts are diamonds shall be described by the words “doublet” (two parts) or “triplet” (three parts) or “composite” (two or more parts), and these words shall be immediately combined with the correct names of the components of the assembled product, the names of which shall be mentioned from the upper part downwards and be separated by a slash (/).

EXAMPLE A doublet whose upper portion is diamond and whose lower portion is synthetic diamond is called a “diamond/synthetic diamond doublet” or “doublet diamond/synthetic diamond”.

3.6 Imitations of diamond

When any artificial product is used to imitate a diamond it shall be described by its proper name, (e.g. “glass”, “plastic”, “synthetic corundum”, “cubic zirconia”), or by the name “imitation of diamond” or “diamond simulant”, and the description shall be immediately apparent and unambiguous (see [4.3.3](#) to [4.3.6](#)).

3.7 Gemstones that might be misrepresented as diamonds

A gemstone other than diamond whose colour, cut and appearance might be misrepresented as a diamond shall always be referred to by its mineral name, and not described as “imitation of diamond” (see [4.3.7](#)).

4 Glossary

4.1 General

This glossary contains a non-exhaustive list of terms that the consumer could encounter.

4.2 Possible treatments of diamonds which shall be disclosed

- Coating
- Fracture filling
- HPHT-treatment
- Irradiation
- Irradiation and annealing
- Laser-drilling
- Painting
- Varnishing, and
- any combination of the above.

4.3 Products that might be misrepresented as diamonds

4.3.1 General

Diamonds exist in various colours, the products and stones listed below can exist in the same multiplicity.

4.3.2 Synthetic diamonds

At present, synthetic diamonds can be produced by 2 different techniques:

- a) High Pressure High Temperature (HPHT) or
- b) Chemical Vapour Deposition (CVD).

4.3.3 Other synthetic stones

- Synthetic moissanite.
- Synthetic rutile.
- Synthetic sapphire.
- Synthetic quartz.
- Synthetic spinel.

4.3.4 Artificial stones

- Artificial stone Cubic Zirconia (CZ).
- Artificial stone Fabulite ®, Strontium Titanite.
- Artificial stone YAG (Yttrium Aluminium Garnet).
- Artificial stone GGG (Gadolinium Gallium Garnet).

4.3.5 Composite stone

- Synthetic white spinel/artificial stone.
- Fabulite ® doublet.

4.3.6 Glass

- Glass.
- Lead glass.
- Lead crystal.
- Strass.

4.3.7 Gemstones that might be misrepresented as diamonds

- Quartz/Rock Crystal.
- Sapphire.
- Topaz.
- Zircon.
- Beryl.

Bibliography

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