



**International
Standard**

ISO 6893

**Jewellery and precious metals —
Inspection of batches of small
diamonds — Terminology,
classification and test methods**

*Joaillerie, bijouterie et métaux précieux — Contrôle des lots
de petits diamants — Terminologie, classification et méthodes
d'examen*

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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 document 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).

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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.

Introduction

ISO 24016 describes the terminology, the classification and test methods that apply for the grading of polished diamonds over 0,25 ct (carat). This category is commonly named “large diamonds” as opposed to the category of “small diamonds”.

From an economic perspective, on the jewellery and watchmaking industries, the low price of each single small diamond – compared to that of a large diamond - is widely compensated by the enormous quantity of small diamonds used.

As for a large diamond, the quality of a small diamond is mainly defined by its carat mass, its colour, its clarity and its cut. But, specifically the inspection of small diamonds faces one main challenge. They are sold by batches, sometimes as large as 10 000 units. When these batches are homogeneous, an inspection per sampling is possible.

This document is proposed to companies involved in the small diamond trade and willing, in the frame of their commercial relationship, to agree on both a defined quality and its inspection methodology.

It is agreed by both parties that the batches that are supplied for inspection by sampling are on a level of the supply chain that provides the necessary homogeneity. Small diamonds are already controlled in different countries and today there is a need for harmonizing the technical principles of inspection of small diamonds. This harmonization will benefit the jewellery and watchmaking industries in large, because their reputations are inextricably linked to a stringent compliance with their product quality specifications.

This document aims to clarify and ease the relationship between diamantaires and companies decorating their products with small diamonds, which consequently strengthens the end consumer confidence in the jewellery, watchmaking and all other luxury industries.

This document completes ISO 18323 and ISO 24016.

Jewellery and precious metals — Inspection of batches of small diamonds — Terminology, classification and test methods

1 Scope

This document specifies the terminology, classification and test methods that are used for the inspection of batches of unmounted polished colourless diamonds with single mass smaller than or equal to 0,25 ct (carat).

While the inspection of a batch is made one diamond at a time, the use of this document is not to be claimed for one single diamond only nor for fancy coloured diamonds, nor for synthetic diamonds, nor for treated diamonds, neither for assembled stones.

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 2859-1:1999, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 18323, *Jewellery — Consumer confidence in the diamond industry*

ISO 24016, *Jewellery and precious metals — Grading polished diamonds — Terminology, classification and test methods*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 18323, ISO 24016 and the following apply.

ISO and IEC maintain terminology 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 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.

[SOURCE: ISO 24016:2020, 3.1.1]

3.2 small diamonds

diamonds (3.1) of individual mass smaller than or equal to 0,25 ct

3.3

batch

series of *small diamonds* (3.2) conforming to the *batch specification* (3.4)

3.4

batch specification

written or verbal description of a *batch* (3.3) of *small diamonds* (3.2) comprising authenticity, *cut* (3.6), *batch size* (3.5), and/or dimension, and/or colour grade, and/or clarity grade, and/or *cut grade* (3.12) and/or *proportion grade* (3.11) and/or *symmetry grade* (3.9), and/or *polish grade* (3.8)

3.5

batch size

quantity of *small diamonds* (3.2) in a *batch* (3.3)

3.6

cut

shape, proportions, polish and symmetry of a *diamond* (3.1)

Note 1 to entry: The term finish encompasses polish and symmetry.

[SOURCE: ISO 24016:2020, 3.5]

3.7

cutting style

facets arrangement of a polished *diamond* (3.1)

EXAMPLE brilliant, step cut

3.8

polish grade

grade taking into consideration the surface condition of a *diamond* (3.1)

3.9

symmetry grade

grade taking into consideration the exactness of the shape of a *diamond* (3.1), the arrangement of its facets and in some circumstances its girdle regularity

3.10

finish grade

grade combining the *symmetry grade* (3.9) and the *polish grade* (3.8)

3.11

proportion grade

grade combining table size, crown height and/or crown angle, pavilion depth and/or pavilion angle, star length, pavilion half facet length, girdle thickness, total depth and in some circumstances culet size

3.12

cut grade

grade combining the *proportion grade* (3.11) and the *finish grade* (3.10)

3.13

inspection

examination of the specifications of *small diamonds* (3.2) and determination of its conformity with detailed requirements or, on the basis of professional judgement, with general requirements

Note 1 to entry: Examination can include direct or indirect observations, which can include measurements or the output of instruments.

[SOURCE: ISO 17000:2020, 6.3, modified — The original text “an object of conformity assessment” has been replaced by “the specifications of small diamonds”, Note 2 and Note 3 to entry have been removed]

3.14 sieving

process of separating round *small diamonds* (3.2) according to their diameter, by means of one or more sieves

[SOURCE: ISO 2395:1990, 3.3.1, modified — the original text “a mixture of particules” is replaced by “round small diamonds” and the original word “size” is replaced by “diameter”, note 1 has been removed.]

4 General

4.1 Batch specifications and characteristics

Single diamonds shall be tested only as part of a batch.

For keeping a consistent quality management on a long-term basis, after its clear definition, the same specification for the same characteristics should be maintained as long as possible.

At least the following characteristics shall specify a batch of small diamonds:

- the total carat mass;
- dimension class/sieve number;
- colour grade;
- clarity grade;
- cutting style;
- shape.

The following characteristics may be specified:

- batch size;
- finish grade;
- proportion grade;
- cut grade;
- crown height;
- girdle thickness;
- nature of the girdle;
- degree of fluorescence;
- tightened dimensions tolerance for roundness, for maximum total depth or any other customized dimensions tolerance.

4.2 Inspection

To ensure impartiality during inspection, the inspection plan that applies to the inspected batch shall not be communicated to the inspector.

For the inspection of a batch by sampling, the inspector shall know the sample size to apply.

NOTE [Figure B.1](#) shows a flowchart which describes the preparation of a batch for sampling.

Batch size:	200
Code letter:	G (General inspection level II)
Sample size:	32

When multiple criteria (e.g. colour and clarity) are inspected, one diamond that would be defective for several criteria is only counted once as a defective diamond only if the inspector considers that the defective criteria are linked together (e.g. a very bad clarity grade affects the colour). This case is also considered in ISO 2859-1:1999, 4.1.

EXAMPLE 1 Assuming that a batch contains one diamond with a colour grade J and a clarity grade P2, the inspector can count the defective diamond only once because he considers that presence of numerous large inclusions is linked to the J colour grade.

EXAMPLE 2 Assuming that a batch contains one diamond with a colour grade J and a clarity VVS, the inspector can count the defective diamond twice because he can consider that the clarity grade is not linked to the colour grade.

5 Authentication

The nomenclature used for describing the authenticity of a diamond batch shall conform to the rules specified in ISO 18323.

Prior to any inspection, the authentication of all diamonds in a batch shall be ensured by appropriate diamond verification means.

The method and devices that were used for authenticating a diamond batch shall always be available.

Non-destructive methods for authenticating small diamonds may include and are not limited to infrared absorption spectroscopy, photoluminescence spectroscopy, luminescence imaging.

6 Sieving

6.1 General

Sieving is commonly used in the small diamond industry to group round polished small diamonds of similar diameters. A sieve is composed of a series of sieve plates and sieve bowls, generally metallic. Each plate is drilled with multiple holes of same diameters. The sieve number is usually inscribed on the sieve plate and indicates the corresponding diameter of the sieve holes. For example, a sieve plate numbered -0000 keeps stones of a diameter of 0,80 mm and larger (see [Table 1](#)).

6.2 Estimating the total mass of a small diamond batch by sieving and counting

The mass of a batch can be estimated by sieving and counting (see [Table A.1](#)), but its exact mass shall be determined by weighing on a scale.

6.3 Estimating a batch size by sieving and weighing

The batch size can be estimated by sieving and weighing (see [Table A.1](#)), but its exact size shall be counted.

6.4 Sieving small diamonds

6.4.1 Method

Small diamonds of different sizes shall be poured onto a sieve plate in a sieve bowl. A wooden or plastic stick shall be used for knocking the bowl surface so that small diamonds jiggle onto the sieve plate, so that any diamond passing through the drilled hole of the sieve is smaller than the diameter corresponding to the sieve number (see [Table 1](#)) and any diamond remaining on the sieve plate is equal or larger than the diameter corresponding to the sieve number (see [Table 1](#)).

Table 1 — Sieve numbers and corresponding diameters

Sieve number	Diameter mm	Sieve number	Diameter mm
NA	0,50	7	1,90
NA	0,55	7,5	2,00
NA	0,60	8	2,10
NA	0,65	8,5	2,20
NA	0,70	9	2,30
NA	0,75	9,5	2,40
0000	0,80	10	2,50
000	0,90	10,5	2,60
00	1,00	11	2,70
0	1,10	11,5	2,80
1	1,15	12	2,90
1,5	1,20	12,5	3,00
2	1,25	13	3,10
2,5	1,30	13,5	3,20
3	1,35	14	3,30
3,5	1,40	14,5	3,40
4	1,45	15	3,50
4,5	1,50	15,5	3,60
5	1,55	16	3,70
5,5	1,60	16,5	3,80
6	1,70	17	3,90
6,5	1,80	17,5	4,00

NOTE 1 Sieve plates for diamonds smaller than 0,80 mm usually indicate the size.

NOTE 2 Some sieves enable sieving per quarter of millimetres (e.g. 0,800; 0,825; 0,850; 0,875; 0,900).

NOTE 3 Different sieve manufacturing process (e. g. press, laser piercing, etc.) can result in differences in accuracy.

NOTE 4 Depending on its position when facing the sieve hole, a slightly oval diamond can pass through the sieve hole or not. For example, a diamond with a diameter ranging from 0,79 mm to 0,81 mm can once pass through a -0000 sieve and remain on the same sieve plate when sieved a second time.

6.4.2 Using sieving plates in a correct order

Sieving should start by using sieve plates from the highest to the smallest number, this avoids larger diamonds to block small holes and will prevent smaller diamonds to be correctly sieved. The sieving process ends when all small diamonds have been sieved.

6.4.3 Maximum size of a sieved batch

The size of a sieved batch should not exceed 3 times the number of holes in the sieve plate.

6.4.4 Preventing damages of sieved diamonds

To avoid the damage of small diamonds, while sieving, small diamonds should not be pressed onto the surface of the sieve plates.

6.4.5 Regular control of sieve plates accuracy

Diamond being the hardest material; when in contact with the sieve, it unavoidably rub-down the sieve hole edges which alter with repeated use the sieve plates accuracy. Therefore, the accuracy of sieve plates shall be regularly controlled with gauges or by comparing the sieving of batches of reference with different sieve plates.

7 Mass of a batch

7.1 Testing

Prior to testing the mass of a batch, particular attention shall be paid to the cleanness of the diamonds.

The mass of a batch is the net mass of all diamonds forming the batch and shall be weighed on a calibrated scale with a suitable accuracy.

7.2 Expression of the weighed mass of a batch

The net mass of a batch shall be expressed in carats to at least two decimal places. The mass of a batch shall describe the net total mass of all diamonds forming the batch. The mass of a batch should be reported on any document accompanying the batch (memo, delivery note, invoice, report).

NOTE According to the rounding rule, the total net weighed mass of a lot can be different from the sum of the masses weighed individually for each diamond.

8 Measurements

8.1 Measuring small diamonds

For measuring small diamonds, ISO 24016 applies. For all measurements, the small diamonds are positioned table down.

8.2 Traditional measurements of single small diamonds

Traditional measurements are performed by means of diamond gauges, and callipers. These instruments may preferably be used for measuring diameters and possibly total depth of round small diamonds. Micrometres may also be useful for measuring total depths with a better precision than diamond gauges.

Diamond gauges and callipers should not be used for measuring other shapes due to the brittleness of their sharp corners.

NOTE For measuring the diameter of a 1,40 mm round diamond with a required tolerance of $\pm 0,05$ mm or higher, a calliper with a measuring uncertainty of 0,007 mm is suitable, but it is no longer suitable if the required tolerance is $\pm 0,02$ mm.

8.3 Measuring a small diamond with a profile projector

For measuring the outline of a diamond of any shape with a profile projector, the diamond shall be placed table down.

For a round diamond the device can measure diameters as small as 0,45 mm, and possibly calculate the roundness. For a diamond with a diameter of 1,40 mm, the measurement uncertainty of a profile projector is typically $\pm 0,005$ mm.

For an accurate measurement, the measure uncertainty of the profile projector is smaller than the interval of tolerance required in the dimension specifications.

For measuring small diamonds with a profile projector without automatic geometry detection, the repeatability and reproducibility of results should be taken into account.

8.4 Measuring automatically dimensions of small diamonds in batch

Round diamonds measured with an automatic device are positioned table down. They can be measured at relatively high speed (several thousand diamonds measured per hour).

For each measured diamond, the following measurements can be available: minimum and maximum diameter, total depth, crown high and crown angle, girdle thickness, pavilion depth, pavilion angle. These various measurements being calculated by different digital cameras, the precision of each different measurement shall be considered when controlling the conformity of the required dimension and/or proportion specifications.

From these different measurements, it is therefore possible to compute, for the whole batch, distribution of diameters, various proportions (up to proportion grades) and different elements of symmetry (roundness, table off-centre and culet off-centre).

For determining the distribution of the cut grades of a batch with an automatized device, that device shall combine the finish grade of each single diamond with the proportion grade of the same individual diamond.

NOTE When measured on an automatized device for diamond batches, the girdle thickness of each small diamond is usually measured by one or two camera(s); therefore, girdle thickness of each diamond is not totally measured.

8.5 Description of dimension for a batch

Any relevant dimension for a batch of diamonds shall be expressed in millimetres to two decimal places, preferably with an indication of tolerance.

EXAMPLE Diameter: 1,40 mm ± 0,05 mm.

9 Batch size

9.1 Testing

If the exact quantity is required, all the stones shall be counted, manually or automatically with a counting machine.

NOTE For batches containing approximately 1'000 diamonds or more, the batch size is commonly approximate. The expected margin of error is inversely proportional to the size of the stones.

9.2 Estimation

9.2.1 Estimation by sampling

[Formula \(1\)](#) gives the estimated batch size:

$$N \cong \frac{M}{m} \times n \quad (1)$$

where

N is the approximate quantity of round brilliant small diamonds in a batch;

M is the mass of the whole batch of round brilliant cut small diamonds;

m is the mass of sampled diamonds;

n is the exact quantity of small diamonds in the sample.

NOTE The larger the sample, the more accurate is the estimation of the batch size.

9.2.2 Estimation using mass and diameter

For batches containing approximately 1'000 diamonds or more, the quantity of round brilliant cut small diamonds may be estimated from the mass of the batch and the diameter of small diamonds forming the batch.

[Formula \(2\)](#) gives the approximate quantity of a round brilliant diamonds in a batch:

$$N \cong \frac{M}{0,003\,66 \times d^3} \quad (2)$$

where

N is an estimation of the approximate quantity of round brilliant small diamonds in a batch;

M is the mass of batch containing round brilliant cut small diamonds;

d is the average diameter of the round brilliant cut small diamonds forming the batch.

NOTE The formula applies for round brilliant cut diamonds with a common total depth of 60 % and a medium girdle thickness.

[Annex A](#) gives information about the correspondence between a diamond's diameter, its estimated mass and the quantity of diamonds per carat.

9.3 Description

When described, a batch size shall be qualified as counted or estimated.

Examples of description of a batch size are:

- 3 500 (counted);
- 15 000 (estimated).

10 Sampling

10.1 Inspecting a batch by sampling

10.1.1 General conditions

A batch of small diamonds whose quantity is larger than 91 (see ISO 2859-1:1999, Table 1) may be sampled if it is expected as homogeneous for the following characteristics:

- mass;
- colour grade;
- clarity grade;
- cutting style;
- shape.

A flowchart for “Sampling control” is described in [Annex B](#).

10.1.2 Drawing diamond samples from a batch

Small diamonds selected for the sample shall be drawn from a batch by simple random sampling as specified in ISO 2859-1:1999, Clause 8.

10.2 Sampling plans for the inspection of a batch of small diamonds

For sampling a batch of small diamonds, sampling plans described in ISO 2859-1 apply. The level II of general inspection may commonly be used (see ISO 2859-1:1999, Table 1).

NOTE Double or multiple sampling plans can apply.

For controlling the quality of a batch, its quality specifications shall be precisely set for each characteristic.

For the inspection of a batch of small diamonds by sampling, a sampling plan shall be defined; the result of the quality tests shall be compared to the defined sampling plan (see ISO 2859-1:1999, Clause 10). See also example in [Annex B](#).

During the inspection of each sampled diamond, its tested characteristics (for example colour, clarity, polish) is classified according to the respective grades (for example E, VVS, “very good”). For each inspected characteristic, the different grades are counted.

10.3 Inspection plan and multiple criteria

When multiple criteria are inspected (general case), the inspection plan is either based on the number of each separate defective criterion or by a combination of the defective criteria, especially because “criteria may differ in importance in terms of quality and/or economic effect” (see ISO 2859-1:1999, 4.2.).

EXAMPLE Assuming a sample size of 50, an AQL 4,0 (see [Table B.2](#)) if applying an inspection plan with separate criteria, 4 defective clarity grades and 2 defective colour grades make the batch to be accepted ($4 < 6$ and $2 < 6$). If applying an inspection plan with combined criteria, the same batch is rejected ($4 + 2 = 6$).

NOTE 1 Keeping the same sampling plan for the same characteristic on a long-term basis favours a consistent quality management.

NOTE 2 A sampling plan usually tolerates an acceptable proportion of small diamonds to not conform to the quality defined by specification (acceptable quality limit).

NOTE 3 For helping in choosing an appropriate sampling plan, ISO 2859-1:1999, Table 8-A quantifies outgoing quality limits (in the worst-case scenario) for single sampling plans.

11 Cut

11.1 Description of cut in a homogenous batch

The cut qualifying a homogenous batch shall be the sole cut of all diamonds forming the batch.

11.2 Description of cut in an inhomogenous batch

For an inhomogenous batch where all diamonds are of the same cut, only this cut shall be used for qualifying the batch.

For an inhomogenous batch where not all diamonds are of the same cut, the term “various cuts” may be used for qualifying the batch.

11.3 Shape

For testing the shape of single diamonds forming a batch, ISO 24016 applies.

11.4 Proportions

11.4.1 Testing the proportions of small diamonds

Proportions can be calculated for diamonds of any shape and cut, especially by means of automatized and optical devices.

Characteristic for assigning a proportion grade are only defined for round brilliant diamonds (see ISO 24016).

The proportion of any element listed below is, for round diamonds, the ratio of its size related to the average of its diameter, and for other shapes, to its width (see ISO 24016). All proportions are expressed in percentage.

- table;
- total depth;
- crown height/crown angle;
- pavilion depth/pavilion angle;
- girdle thickness.

It is possible to estimate some proportions of a polished diamond by means of a binocular microscope, but this estimation is usually very approximate and may not be conclusive.

11.4.2 Description of proportion grades

The proportion grades that shall be used are

- excellent (optionally),
- very good,
- good,
- fair/medium, and
- poor.

The proportion grade of a batch shall at least describe the best proportion grade found to the worst proportion grade found in the batch (e.g. excellent to good).

11.5 Polish

11.5.1 Testing the polish of small diamonds

For testing the polish of small diamonds in batch, ISO 24016 standard applies.

11.5.2 Polish grades

The polish grades that shall be used are

- excellent (optionally),
- very good,
- good,
- fair/medium, and
- poor.

The polish grade of a batch shall at least describe the best polish grade found to the worst polish grade found in the batch.

For describing the polish grade of a single diamond in a batch, two adjacent polish grades may be combined (e.g. “excellent to very good”).

11.6 Symmetry

11.6.1 Testing the symmetry of small diamonds

For testing the symmetry of small diamonds in a batch, ISO 24016 standard applies.

If applicable, it is recommended to ponder the observation of symmetry characteristics with the measured values of

- roundness,
- table off-centre, and
- culet off-centre.

11.6.2 Symmetry grades

The symmetry grades that shall be used are

- excellent (optionally),
- very good,
- good,
- fair/medium, and
- poor.

The symmetry grade of a batch shall at least describe the best symmetry grade found to the worst symmetry grade found in the batch.

For describing the symmetry grade of a single diamond in a batch, two adjacent symmetry grades may be combined (e.g. “excellent to very good”).

12 Colour

12.1 Testing the colour of small diamonds

For testing the colour of small diamonds in a batch by visual means, ISO 24016 standard applies.

It is permitted to compare the colour of small diamonds to that of masterstones under magnification that does not add any visible hue.

NOTE Colorimetry can be used for testing the colour of small diamonds as long as the colorimeter reproduces the methods and conditions of visual colour grading stated in ISO 24016.

12.2 Colour grades

The colour grade of a batch shall at least describe the best colour grade found to the worst colour grade found in the inspected diamonds.

The colour grade of a single small diamond in a batch should be described by using the following combined terms:

- exceptional white (D/E);
- rare white (F/G);
- white (H);
- slightly tinted white (I/J);

- tinted white (K/L);
- tinted (M to Z).

Using subdivided colour grades shall be indicated in the specifications.

The colour grades that could also be used are

- exceptional white + (D),
- exceptional white (E),
- rare white + (F),
- rare white (G),
- white (H),
- slightly tinted white (I),
- slightly tinted white (J),
- tinted white (K),
- tinted white (L), and
- tinted (M to Z).

See [Table 2](#) for corresponding terms for colour grades.

Table 2 — Corresponding terms for colour grades

CIBJO		GIA	Scan.D.N.	
Exceptional white +	D	D	River	D
Exceptional white	E	E	River	E
Rare white +	F	F	Top Wesselton	F
Rare white	G	G	Top Wesselton	G
White	H	H	Wesselton	H
Slightly tinted white	I	I	Top crystal	I
Slightly tinted white	J	J	Crystal	J
Tinted white	K	K	Top cape	K
Tinted white	L	L	Cape	L
Tinted	M to Z	M to Z	Cape	M to Z

13 Fluorescence

13.1 Testing the fluorescence of small diamonds

13.1.1 Testing the fluorescence by visual means

For testing the fluorescence of small diamonds in a batch by visual means, ISO 24016 standard applies.

In addition to ISO 24016 specifications, it is permitted to compare the fluorescence of small diamonds to that of masterstones:

- under magnification that does not add any visible hue;
- by positioning the tested diamond table up.

An inspection of the fluorescence table up shall be indicated in the specifications and in the test report.

13.1.2 Testing the fluorescence by spectrometry

Spectrometry may be used for comparing the colour of fluorescence and the degree of fluorescence of small diamonds to that of diamond masterstones for fluorescence.

13.2 Description of the fluorescence

For describing the fluorescence of small diamonds in batch, ISO 24016:2020, Table 3, applies.

The fluorescence grade of a batch shall at least describe the best fluorescence grade found to the worst fluorescence grade found in the batch.

14 Clarity

14.1 Testing the clarity of small diamonds

For testing the clarity of small diamonds, ISO 24016 applies except for the following clause. The visibility with the diamond loupe, of all external characteristics present on the crown side of a small diamond in a batch, shall be considered when assigning the clarity grade.

For ensuring the best repeatability of results when testing clarity of small diamonds, different series of small diamonds of different sizes with different examples of all clarity grades should be formed and always kept available.

For convenience, a binocular microscope may be used for preliminary observation. However, the final decision shall be taken in reference to visibility with a $\times 10$ loupe.

14.2 Clarity grades

The clarity grade of a batch shall at least describe the best clarity grade found to the worst clarity grade found in the batch.

The clarity grade of a single small diamond in a batch should be described by using the following terms:

- Loupe Clean (LC or IF/FL);
- VVS;
- VS;
- SI;
- Piqué or Included.

Under some circumstances, clarity grades may be sub-divided into loupe clean (LC or IF), loupe clean (LC or FL), VVS1, VVS2, VS1, VS2, SI1, SI2, P1/I1, P2/I2, P3/I3 (see [Table 3](#)).

Table 3 — Clarity grades

LC	FL
	IF
VVS	VVS1
	VVS2
VS	VS1
	VS2

Table 3 (continued)

SI	SI1
	SI2
P or I	P1 or I1
	P2 or I2
	P3 or I3

Using subdivided clarity grades shall be indicated in the specifications.

15 Content of a test report

A test report for a batch, or for a sampling of small diamonds shall only describe the characteristics of the small diamonds positively authenticated in accordance with the rules specified in [Clause 5](#).

The report shall contain at least the following information:

- the name and a valid address where a user can contact the institution/laboratory;
- test report (as a title);
- unique test report reference;
- the results of the following tests:
- total mass of the tested diamonds;
- dimensions / sieve number;
- quantity of diamonds authenticated;
- sampling size, batch size or sampling plan (if applicable);
- shape and cutting style;
- colour grade;
- clarity grade;
- the date and the place of issue of the test report.

In addition to the information listed above, the report may contain the following information:

- proportion grade;
- polish grade;
- symmetry grade;
- finish grade;
- cut grade;
- proportions (such as table size, and/or total depth and/or crown height and/or crown angle, and/or pavilion depth and/or pavilion angle, and/or girdle thickness, and/or culet size);
- nature of the girdle;
- nature of the culet;
- fluorescence (degree of and if applicable colour of), see also [Clause 13](#);
- a reference to this document, i.e. ISO 6893:2024.

NOTE 1 If known, a reference of the batch is added after the unique test report reference.

NOTE 2 If applicable, the report describes the quantity of non-authenticated diamonds and/or its ratio to the quantity of tested diamonds.

Anti-forgery measures shall be taken when issuing a test report. Such measures include and are not restricted to: lamination, anti-forgery labels, stamps, signatures.

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Annex A

(informative)

Corresponding figures for round brilliant cut

[Table A.1](#) shows the correspondence between a diamond's diameter, its estimated mass and the quantity of diamonds per carat.

Table A.1 — Corresponding figures for round brilliant cut

Sieve number	Diameter mm	Quantity of diamonds per carat	Estimated mass of one diamond ^a ct
NA	0,50	2 186	0,000 457 5
NA	0,55	1 642	0,000 608 9
NA	0,60	1 265	0,000 790 6
NA	0,65	995	0,001 005 1
NA	0,70	797	0,001 255 4
NA	0,75	648	0,001 544 1
0000	0,80	534	0,001 873 9
000	0,90	375	0,002 668 1
00	1,00	273	0,003 660 0
0	1,10	205	0,004 871 5
1	1,15	180	0,005 566 4
1,5	1,20	158	0,006 324 5
2	1,25	140	0,007 148 4
2,5	1,30	124	0,008 041 0
3	1,35	111	0,009 005 0
3,5	1,40	100	0,010 043 0
4	1,45	90	0,011 158 0
4,5	1,50	81	0,012 352 5
5	1,55	73	0,013 629 4
5,5	1,60	67	0,014 991 4
6	1,70	56	0,017 981 6
6,5	1,80	47	0,021 345 1
7	1,90	40	0,025 103 9
7,5	2,00	34	0,029 280 0
8	2,10	30	0,033 895 3
8,5	2,20	26	0,038 971 7
9	2,30	22	0,044 531 2
9,5	2,40	20	0,050 595 8
10	2,50	17	0,057 187 5
10,5	2,60	16	0,064 328 2
11	2,70	14	0,072 039 8

^a Round brilliant cut diamond for which the table and total depth are 60 %, and the girdle thickness is medium.