



**IDC-RULES
FOR GRADING POLISHED DIAMONDS**

The International Diamond Council

Version 2010

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Introduction to the 1979 edition

At the International Congress of the World Federation of Diamond Bourses and the International Diamond Manufacturers Association, held in Amsterdam in May '75, a joint committee, recently renamed the International Diamond Council, was appointed with a mandate to establish unity in the normalization of the grading of polished diamonds.

The International Diamond Council decided to start from the following principles:

- A set of internationally recognized standards should be developed, applicable in the same way all over the world.
- Working methods for applying these standards should be normalized. This is necessary in order to arrive at uniform certificates.
- Internationally recognized institutes, which will apply the accepted standards and methods, have to be set up.

As a result of several meetings and discussions of the International Diamond Council in 1975, 1976 and 1977, a first document on the standards as well as on the working methods was drafted in July '77, namely the "Proposal for Normalizing the Description of Diamonds".

In March of the same year, an international series of colour masterstones and corresponding denominations were accepted in agreement with the CIBJO.

In May '78 the basic principles of the standards, called the "International Rules for Grading Polished Diamonds", were proposed for ratification at the 19th Congress of the World Federation of Diamond Bourses and the International Diamond Manufacturers Association in Israel. They were unanimously approved.

The present document is an updated version of the rules, approved in 1995, with amendments based on the remarks and suggestions of the listed organizations. All rules approved at the World Congress in Israel are marked "IR May '78" (international rule May '78).

Note: Since the 1995 edition the markings "IR May 78' have been deleted, since they were of historical interest only.

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1. GENERAL

1.1. DEFINITIONS

1.1.1. DIAMOND

A diamond is a natural mineral of crystallized carbon in a cubic structure with a Mohs' scale hardness of 10, a specific gravity of +/- 3.52 g/cm³ and a refractive index of 2.42.

The denomination “diamond” may not be used as such to describe any other product, not even to indicate items partly consisting of diamond, such as doublets.

The denomination “diamond” without further specification always implies “natural diamond”. These two terms are equivalent and carry the same meaning.

1.1.2. TREATED DIAMOND

A treated diamond is a diamond that has been subjected to a treatment process, other than cutting, polishing and cleaning, intended to possibly change the diamond's appearance or other properties. A non permanent treatment process may be:

- Filling
- Coating
- Any other non permanent physical or chemical process
- Any combination of the above mentioned treatments/enhancements-processes

A permanent treatment process may be:

- Irradiation
- Heating
- Laser drilling
- High pressure/high temperature heating (HPHT)
- Any other permanent physical or chemical process
- Any combination of the above mentioned treatments/enhancements-processes

1.1.3. SYNTHETIC DIAMOND

A “laboratory-created”/“laboratory-grown”/“synthetic diamond” is a fully or partly man-made /artificial product that has the same chemical composition, crystal structure, optical and physical properties as a diamond.

For the purpose of this document the term “synthetic diamond” equals the terms “ laboratory-created”/ “laboratory-grown”/“synthetic” diamond.

1.1.5. SIMULANT

A simulant is a product or a material that can be used with the intention to simulate a diamond or a diamond's appearance. For example: cubic zirconia.

A simulant is a product or a material that does not have the same chemical composition, crystal structure, optical-or physical properties as a diamond.

The word “diamond” may not be used to describe or disclose such a stone, not even in combination with other words.

1.1.6. LASER DRILLING

Diamonds subjected to laser drilling can be graded as such but must always be characterized and disclosed as "Laser drilled".

1.2. DISCLOSURE

1.2.1. DIAMONDS TREATED BY A NON PERMANENT TREATMENT PROCESS

1.2.1.1. FILLING

Must be disclosed as “Treated Diamond”.

The type of treatment must be disclosed as “Filled”.

1.2.1.2. COATING

Must be disclosed as “Treated Diamond”.

The type of treatment must be disclosed as “Coated”.

1.2.2. DIAMONDS TREATED BY A PERMANENT TREATMENT PROCESS

Must be disclosed as “Treated Diamond”.

The type of treatment(s) must be disclosed as “treatment(s) detected”.

A permanent treatment process may be:

- Irradiation
- Heating
- High pressure/high temperature heating (HPHT)
- Laser drilling
- Any other physical or chemical process that is permanent.
- Any combination of the above mentioned treatments processes

Labs will have the choice whether or not to issue a grading report/certificate for treated diamonds. In case one is issued only a full grading report may be delivered.

If they do not issue grading reports, a short statement with weight, shape and nature of the diamond must be available. The term “Treated Diamond Examination Document” or “Treated Diamond Assurance Document ” is suggested for this limited document.

1.2.3. SYNTHETIC DIAMOND

Must be disclosed as “Synthetic diamond”.

Labs will have the choice whether or not to issue a grading report/certificate for synthetic diamonds. In case one is issued only a full grading report may be delivered.

If they do not issue grading reports, a short statement with weight, shape and nature of the diamond must be available. The term “Synthetic Diamond Examination Report” or “Synthetic Diamond Assurance Report” is suggested for this limited document.

Only the terms “Laboratory-created”/ “Laboratory-grown”/”Synthetic” diamond may be used.

1.3. GRADING AND CERTIFICATION

1.3.1. DIAMONDS TREATED BY A NON PERMANENT TREATMENT PROCESS

1.3.1.1. FILLING

May not be graded and certified.

A Treated Diamond Examination Document can be issued.

- On the Treated Diamond Examination Document, it must be mentioned that the diamond has been identified as a “Treated Diamond”.
- Under the comments section of the Treated Diamond Examination Report the wording “Filled” must be mentioned.
- On the Treated Diamond Examination Document, besides a description on the nature of a diamond, also the weight, measurements and shape must be described. No other results may be given.

1.3.1.2. COATING

May not be graded and certified

A Treated Diamond Examination Report can be issued.

- On the Treated Diamond Examination Report, it must be mentioned that the diamond has been identified as a “Treated Diamond”.
- Under the comments section of the Treated Diamond Examination Report the wording “Coated” must be mentioned.
- On the Treated Diamond Examination Report, besides a description on the nature of a diamond, also the weight, measurements and shape must be described. No other results may be given.

1.3.2. DIAMONDS TREATED BY A PERMANENT TREATMENT PROCESS

May be graded and certified.

A Treated Diamond Grading Report/Certificate may be issued.

- The Treated Diamond Grading Report/Certificate must be issued in a jacket-cover that is printed in a colour and/or format that is distinctive from the colour and/or format used for the jacket-cover of the Grading Reports/Certificates of “Diamonds”.
- The wording “TREATED DIAMOND GRADING REPORT/CERTIFICATE” must be mentioned on the cover.
- On the Treated Diamond Grading Report/Certificate, it must be mentioned that the diamond has been identified as a “Treated Diamond”.
- The section of the Treated Diamond Grading Report/Certificate, referring to the colour or the colour grade, must contain the wording - in capital letters – “TREATED”, with a referral by

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means of a superscript.

The superscript refers to the comments section of the Treated Diamond Grading Report/Certificate where the description of the colour must be mentioned. This description must be followed by the wording “treatment(s) detected”.

- Treated diamonds can only be graded and certified if clearly laser inscribed.
- The presence of the laser inscription must be mentioned on the Treated Diamond Grading Report/Certificate with the inscription on the girdle: “TREATED”.

1.3.3. SYNTHETIC DIAMOND

May be graded and certified.

For the purpose of this document the term “synthetic diamond” equals the terms “Laboratory-created”/ “Laboratory-grown”/ “Synthetic” diamond.

A Synthetic Diamond Grading Report/Certificate may be issued.

- The Synthetic Diamond Grading Report/Certificate must be issued in a jacket-cover that is printed in a colour and/or format that is distinctive from the colour used for the jacket-cover of the Grading Reports/Certificates of “Diamonds”.
- The wording “LABORATORY-CREATED”/“LABORATORY-GROWN”/“SYNTHETIC” DIAMOND GRADING REPORT/CERTIFICATE” must be mentioned on the cover.
- On the “Synthetic Diamond Grading Report” it must be mentioned that the diamond has been identified as a “Laboratory-created”/“Laboratory-grown”/“Synthetic” diamond.
- “Synthetic” diamonds can only be graded and certified if clearly laser inscribed.
- The presence of the laser inscription must be mentioned on the “Synthetic Diamond Grading Report”/Certificate”:
The inscription on the girdle must be: “LABORATORY-CREATED”/“LABORATORY-GROWN”/“SYNTHETIC”
- The definition of a “Synthetic” diamond will be mentioned on the “Synthetic Diamond Grading Report/Certificate”.
- * “Man-made product that has the same chemical composition, crystal structure, optical and physical properties as a diamond.”

Or

- * “Man-made reproduction of diamond that has the same chemical composition, crystal structure and physical properties as its natural counterpart.”

Or

* “Synthetic diamonds are man-made, artificially grown crystals. The structural, chemical and physical properties of artificially produced crystals are identical to those of diamonds.”

1.3.3.1. GRADING OF THE COLOUR

The colour will be described in the descriptive terms of the scale:

- Colourless
- Near colourless
- Faint
- Very light
- Light

1.3.3.2. GRADING OF THE CLARITY

For loupe-clean stones the term FI – Free of Inclusions will be used.

For the other grades, the distinction between 1 and 2 is dropped. In addition, “small” is replaced by “light” in the definitions, with the intention to make the difference between “Synthetic” and “Natural” obvious at first glance.

- VVL very, very lightly included
- VL very lightly included
- L lightly included
- I included
- HI heavily included

Note : Additional laboratories may also use use VVS,VS,SI without any numerical designation of 1 or 2 included.

1.3.3.3. GRADING FLUORESCENCE, PROPORTIONS, SYMMETRY AND POLISH

Same grading-system as for a “Diamond”.

1.3.3.4. GRADING OF FANCY COLOURS

Same grading-system as for a “Diamond” but with the exception:

Never use the term “FANCY” to grade a “Laboratory-created”/“Laboratory-grown”/“Synthetic” diamond.

1.4. DIAMOND CERTIFICATES/GRADING REPORTS

A usual Certificate/Grading Report of a diamond includes mention of the four main characteristics (4C's), namely the weight, the clarity grade, the colour grade and the cut.

1.4.1. CONTENTS OF A DIAMOND CERTIFICATE/GRADING REPORT

A complete Certificate/Grading Report of a Diamond as it should appear on a Certificate, includes the following data:

- the statement that the diamond has been identified as a natural or HPHT treated or synthetic diamond
- report/reference number
- weight
- shape and measurements
- clarity grade
- colour grade
- fluorescence grade
- cut: proportions-, symmetry- and polish-grade
- comments and identification marks, if applicable
- plot/diagram
- place of issue
- date of issue
- reference to IDC

1.4.2. CONDITIONS REGARDING THE STATE IN WHICH DIAMONDS MUST BE PRESENTED FOR GRADING

For full and accurate grading, diamonds must be presented for grading un-mounted and free of any obstacles including dirt.

2. GRADING - CLARITY

2.1. DETERMINATION OF CLARITY GRADES

The clarity grades are obtained by establishing the relevant internal characteristics.

2.2. RELEVANT INTERNAL CHARACTERISTICS

As a definition all characteristics, which are internally or partly internally perceptible, belong to the internal characteristics.

To be more precise, they are:

- the inclusions:
e.g. crystalline inclusions, carbon inclusions, pinpoints, clouds, ...
- fractures
- cleavages (feathers, bearding, fissures)
- some kinds of structure phenomena
- poor transparency of the diamond
- laser drill holes

2.3. CLARITY GRADING SCALE

The subdivision and denominations of the clarity grades are as follows:

LOUPE-CLEAN

VVS1

VVS2

VS1

VS2

S11

S12

P1 (I1)

P2 (I2)

P3 (I3)

2.3.1. DEFINITION OF "LOUPE-CLEAN"

No diamond can be referred to as being 100% free of inclusions/internal characteristics. In all diamonds inclusions will occur. They belong to the essential character of the diamond. Therefore, the first clarity grade does not refer to diamonds being 100% inclusion free, but to diamonds being "loupe-clean", i.e. free of internal characteristics in so far as the diamonds are examined under a magnification of a loupe 10X. In particular, the definition generally accepted in the diamond industry states that:

A diamond is called "loupe-clean" if, after an examination by an experienced grader with a loupe 10X (corrected for spherical and chromatic aberration), it has been found free of internal characteristics.

It is recommended that the characteristics of the artificial light source used, approximate the C.I.E.-standard illuminant D65 (C.I.E. = Commission Internationale de l'Eclairage / International Commission on Illumination).

The recommended method is to make a direct comparison, using a loupe 10X, with a reference diamond, accepted by the IDC, containing an inclusion marking the limit of the loupe-clean-grade. In any case, whatever means of examination are used; the final decision must be made with a loupe 10X.

2.3.2. GRADING OF INTERNAL CHARACTERISTICS

The **internal characteristics** are graded as described in the following definitions, which are to be (valid for) used by an experienced grader.

loupe-clean	ref. 2.3.1.
VVS1 VVS2	Very very small internal characteristic(s), which can be found from very hardly to hardly with a loupe 10x. The size, position, number and brightness of the internal characteristics determine the distinction between vvs1 and vvs2.
VS1 VS2	Very small internal characteristic(s), which can be found from fairly hardly to easily with a loupe 10x. The size, position, number and brightness of the internal characteristics determine the distinction between vs1 and vs2.
SI1 SI2	Small internal characteristic(s), very easy to find with a loupe 10x. The size, position, number and brightness of the internal characteristics determine the distinction between si1 and si2.
P1 or I1	Pique 1 or Included 1 Internal characteristic(s), which can hardly be found with the naked eye through the crown side of the diamond.
P2 or I2	Pique 2 or Included 2 Large and/or frequent internal characteristic(s), easily visible to the naked eye through the crown side and which reduce(s) the brilliancy of the diamond slightly.
P3 or I3	Pique 3 or Included 3 Very large and/or frequent internal characteristic(s), very easy to be seen with the naked eye through the crown side and which reduce(s) the brilliancy of the diamond.

2.3.3. GRADING OF STRUCTURE PHENOMENA

2.3.3.1. STRUCTURE PHENOMENA

The growth lines, the graining effects and the different forms of "knots", such as the twinning seams, knot lines and knot planes, are considered as "structure phenomena". The meaning of these terms is explained in the addendum "Types of structure phenomena in diamonds".

2.3.3.2. DESCRIPTION

The different kinds of structure phenomena can be divided into the following groups:

- A. Structure phenomena that are internally visible, but are not causing any colour effects or white reflections (e.g. growth lines and (some) different kinds of graining)
- B. Structure phenomena that are internally visible and are causing colour effect or white reflections (e.g. brownish coloured zones, reflective grain planes and (some) different kinds of graining).

The rules for grading the structure phenomena are as follows:

visibility of the structure phenomena	diamonds without internal characteristics	diamonds with internal characteristics
not to find with a loupe 10X	- clarity grade: "loupe-clean" - no remarks	no influence on the grading of the internal characteristics
very hard to find with a loupe 10X	- clarity grade: "loupe-clean" - description under Remarks: "minor graining"	no influence on the grading of the internal characteristics
hard to find with a loupe 10X	- clarity grade: "loupe-clean" - description under Remarks: "graining is present"	no influence on the grading of the internal characteristics
fairly easy to find with a loupe 10X	the structure phenomena influence the clarity grading	the structure phenomena may influence the clarity grading

3. GRADING - COLOUR AND FLUORESCENCE

3.1. DETERMINATION OF COLOUR GRADES

The diamond colours can be divided in two main groups:

- colourless to light yellow diamonds (or equivalent)
diamonds with a yellow hue, possibly with a faint brownish, grayish or greenish deviation
- coloured diamonds
all diamonds darker than light yellow (or equivalent) and
all diamonds with another colour hue

3.1.1. COLOURLESS TO LIGHT YELLOW DIAMONDS (OR EQUIVALENT)

3.1.1.1. COLOUR GRADES

These colours are subdivided into 10 colour grades, called the "International Colour Grading Scale" (see colour comparison table 3.1.1.2.).

3.1.1.2. INTERNATIONAL COLOUR GRADING SCALE

International Colour Grading Scale			
exceptional white +	blanc exceptionnel +	hochfeines Weiss +	D
exceptional white	blanc exceptionnel	hochfeines Weiss	E
rare white +	blanc extra +	feines Weiss +	F
rare white	blanc extra	feines Weiss	G
white	blanc	Weiss	H
slightly tinted white +	blanc nuancé +	leicht getöntes Weiss +	I
slightly tinted white	blanc nuancé	leicht getöntes Weiss	J
tinted white +	légèrement teinté +	getöntes Weiss +	K
tinted white	légèrement teinté	getöntes Weiss	L
tinted colour	couleur teintée	getönt	M-Z

3.1.1.3. DETERMINATION OF THE COLOUR

The colours must be determined by comparison with master colour diamond samples.

After a complete validation and on the base of a comparison between the results of a measuring instrument with those of a grader, colour measuring equipment can be used for grading.

3.1.1.4. POSITION OF THE MASTER DIAMOND

The colour grades are fixed by a series of “master diamonds”, which, as a definition, fix the lower limit of each colour grade. An international reference-series has been composed by representatives of the WFDB, the IDMA and CIBJO.

3.1.1.5. SELECTION OF MASTER DIAMONDS

A series of valid “master diamonds“ (also called “masterstones”) must be selected by direct comparison with the international reference series.

The “master diamonds” must comply with the following requirements:

- brilliant-shapes only
- weight: larger than 0.70 ct
- proportions: vg
 - table diameter: 60 to 66%
 - crown height: 11 to 14%
 - girdle thickness: smaller than 3%
 - pavilion depth: 42 to 45%
- clarity: vs2 or better, free of colored or black inclusions and structure phenomena causing colour effects
- girdles: bruted, faceted or polished girdles (the nature of the girdles must be the same within 1 set of masterstones)
- fluorescence: nil or slight
- colour: yellow hues only

3.1.1.6. CONDITIONS

The colour comparison with “master diamonds” is performed under normalized artificial light, equivalent to northern daylight. It is recommended that the characteristics of the artificial light source used, approximate the C.I.E.-standard illuminant D65 (C.I.E. = Commission Internationale de l'Eclairage / International Commission on Illumination).

The “master diamond” and the diamond to be graded are placed on a V-shaped white support (e.g. a folded white paper) and observed from a direction, perpendicular to the pavilion facets.

3.1.1.7. GRADING

The comparison with the “master diamonds” is made as follows: if no difference in colour is observed between the diamond to be graded and a specific reference-diamond, then the colour of the latter is conclusive.

If the colour of the diamond to be graded lies between those of two reference-diamonds, then the colour of the darkest one is conclusive.

3.1.1.8. EQUIVALENT COLOUR

Diamonds of equivalent colour are compared with the same masterstones and in the same manner as diamonds with light-yellow colour.

In case of a clearly visible distinction, this has to be mentioned together with the colour grade.

3.1.2. COLOURED DIAMONDS

3.1.2.1. Determination

The colour determination is performed by comparison with colour standards.

3.1.2.2. Description

The following characteristics are described:

- colour hue
- colour saturation and lightness
- colour origin

3.1.2.3. Denomination

Depending on the above mentioned characteristics of the colour, the term "fancy" may precede the colour description.

3.2. FLUORESCENCE

3.2.1. Determination of fluorescence

In the same way as for the colour grades, the fluorescence grade is assessed by comparison to fluorescence-reference-diamonds. This is done under a lighting of UV-rays, wavelength 366 nm.

3.2.2. Grading of fluorescence

The fluorescence grades are:

nil - slight - medium - strong

The colour of the fluorescence is not mentioned on a certificate.

Note : Additional laboratories may also use « very strong »

4. GRADING - CUT

4.1. CUT: DEFINITION AND DESCRIPTION

4.1.1. DEFINITION OF "CUT"

"Cut" refers to the overall description of the **proportions**, the **symmetry** and the **polish** of a diamond.

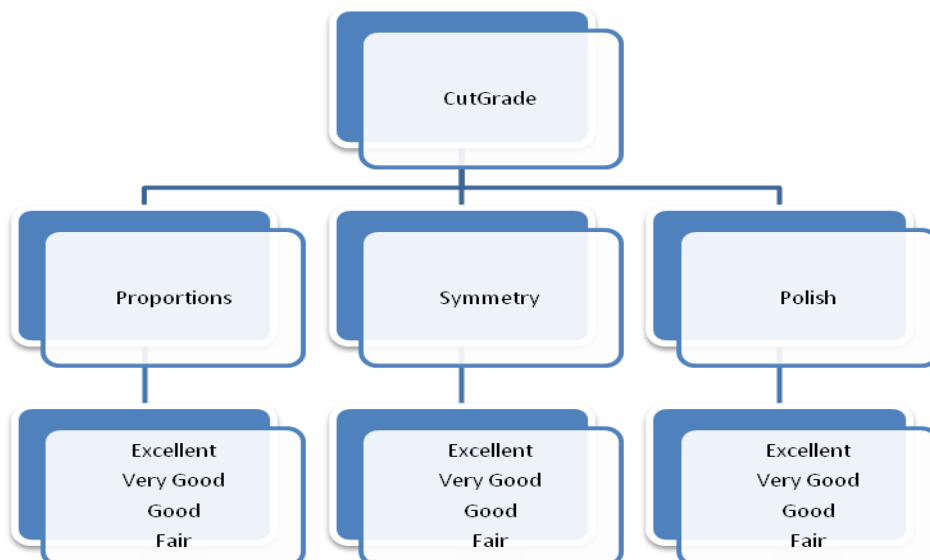
- The proportions are determinative for the brilliancy and the fire of the diamond
- The symmetry describes the variation of the different parameters which defines the proportions
- The polish describes the finish of the facets

4.1.2. DESCRIPTION OF "CUT"

The description of the Cut Grade on a certificate must be split into 3 grades: proportions, symmetry and polish.

Each grade is divided into 4 categories: Excellent, Very Good, Good and Fair.

Note : Additional laboratories may also use « poor »



1. The tables of data regarding excellent cut is according to the HRD-Antwerp and the DPL Diamant Prufflabor GmbH.- system which was approved by the IDC. There are other tables for additional characteristics which have not yet been conveyed to IDC for approval.

4.2. PROPORTIONS

4.2.1. DETERMINATION OF PROPORTIONS

For a diamond to show an optimal combination of brilliancy and fire, it has to be polished with due attention to the angles of inclination and proportional relations between the various parts of the diamond. If the angles and proportions are not optimal, this can lead to the appearance of one or more specific effects in the diamond, which are detrimental to its beauty. When grading the proportions of a polished diamond, the main issue is therefore to evaluate if, and if so to what extent, these effects occur.

The most important effects that can be perceived when observing the diamond perpendicular to the table are:

- Fish eye:** The reflection of the girdle is partially or completely visible in the table (small pavilion angle and a large table width)
- Culet visible in the bezels:** The diamond shows an abnormal amount of scintillation, due to the culet and the surrounding facets being visible through the bezels (a large total depth and crown angle)

The list of effects above is not exhaustive; there are other proportions-related phenomena which are considered to be undesirable, for instance the diameter being too small in proportion to the total depth, making the diamond appear smaller than its actual weight.

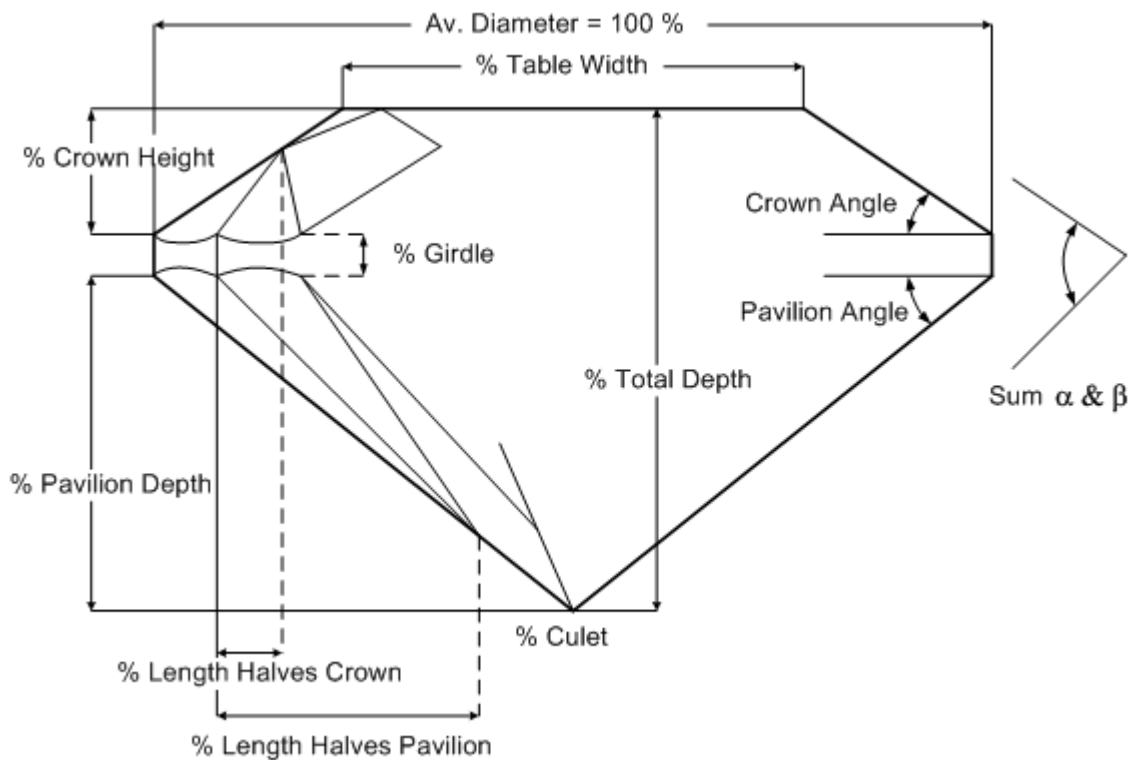
4.2.2. BASIC PARAMETERS OF THE PROPORTIONS

The basic parameters that can characterize the proportions are for the brilliant-shape:

- the crown angle (β)
- the pavilion angle (α)
- the proportion of the table width to the diameter (% t)
- the proportion of the crown height to the diameter (% h_c)
- the proportion of the pavilion depth to the diameter (% h_p)
- the proportion of the girdle thickness to the diameter (% a)
- the culet size (% culet)
- the proportion of the total depth to the diameter (% t_d)
- the sum of the crown- and pavilion angle

- the half length of the crown facets
- the half length of the pavilion facets
- the fish eye effect (visual grading)
- the effect culet visible in the bezels (visual grading)

Profile of a brilliant-shaped diamond and the different parameters:



For the other shapes, basically the same parameters are involved, but then compared to the width of the diamond.

4.2.3. GRADING OF PROPORTIONS

For the brilliant-shapes, next to the actual values an appreciation can be given. The categories are:

Excellent - Very Good - Good - Fair

Note : Additional laboratories may also use « poor »

The measurements of the different parts of the diamond can be a useful aid in determining the proportions grade, since there exists an obvious relation between these data and the appearance of the visual effects discussed in 4.2.1.

Overview of the different parameters per category:

<i>Parameter</i>	<i>Fair</i>	<i>Good</i>	<i>Very Good</i>	<i>Excellent</i>	<i>Very Good</i>	<i>Good</i>	<i>Fair</i>
Crown angle (β)	up to 25.9°	26.0 to 27.9°	28.0 to 31.9°	32.0 to 36.0°	36.1 to 37.7°	37.8 to 40.0°	40.1° and up
Pavilion angle (α)	up to 38.4°	38.5 to 39.5°	39.6 to 40.5°	40.6 to 41.8°	41.9 to 42.1°	42.2 to 43.1°	43.2° and up
Table width	up to 49%	50 to 51%	52 to 53%	54 to 62%	63 to 66%	67 to 70%	71% and up
Crown height	up to 8.5%	9.0 to 10.5%	11.0 to 11.5%	12.0 to 16.0%	16.5 to 18.0%	18.5 to 19.5%	20.0% and up
Pavilion depth	up to 39.5%	40.0 to 41.0%	41.5 to 42.5%	43.0 to 44.5%	45.0%	45.5 to 46.5%	47.0% and up
Girdle	up to 0.5%	1.0 to 1.5%	2.0%	2.5 to 4.0%	4.5%	5.0 to 7.5%	8.0% and up
Culet size				0.0 to 0.9%	1.0 to 1.9%	2.0 to 3.9%	4.0% and up
Total depth	up to 52.9%	53.0 to 55.4%	55.5 to 58.4%	58.5 to 62.5%	62.6 to 63.9%	64.0 to 66.9%	67.0% and up
Sum α and β	up to 67.9°	68.0 to 69.9°	70.0 to 72.4°	72.5 to 77.0°	77.1 to 78.9°	79.0 to 80.0°	80.1° and up
Half length crown	up to 30%	35%	40%	45 to 55%	60%	65%	70% and up
Half length pavilion	up to 60%	65 to 70%	75%	75 to 85%	85%	90%	95% and up
Fish-eye effect				Excellent	not applicable	Good	Fair
Culet in bezels				Excellent	not applicable	not applicable	Fair

Note : Additional laboratories may also use « poor »

If the measurements of the diamond are situated in different categories, the lowest proportion grade is considered to be the overall reading.

In addition to the proportional measurements mentioned above, there are others which can have a negative influence on the final grade if they are not within certain limits.

4.2.4. GIRDLE THICKNESS

The girdle thickness is described in the following terms:

Extremely thin - Very thin - Thin - Medium - Thick - Very thick - Extremely thick

The nature of the girdle can be described in the following terms:

Faceted - Polished – Bruted

Description of the girdle and the influence on the proportions:

<i>Description of the girdle</i>	<i>Measured value</i>	<i>Proportion Grade</i>
Extremely thin	0.0 – 0.5%	Fair
Very thin	1.0 – 1.5%	Good
Thin	2.0%	Very Good
	2.5%	Excellent
Medium	3.0 – 4.0%	
	4.5%	
Thick	5.0 – 6.0%	Good
Very thick	6.5 – 7.5%	
Extremely thick	8.0% and up	Fair

4.2.5. DESCRIPTION OF THE CULET

The culet is described in the following terms:

Pointed – Large - Linear - Polished – Natural

The culet is called "pointed" when the culet diameter is <0.033 mm. When the culet is described as "polished" or "natural", an additional description of the culet size can be given, expressed by means of the terms "small" -"medium"- "large", and/or by noting the proportional size of the culet as compared to the diameter of the diamond.

The influence of the culet size on the proportions:

<i>Description of the culet</i>	<i>Culet Size</i>	<i>Proportion Grade</i>
Pointed	0.0% (<0.033mm)	Excellent
	0.1% (0.033 mm) - 0.9%	
	1.0 to 1.9%	Very Good
	2.0 to 3.9%	Good
Large	4.0% and up	Fair

4.3. SYMMETRY

4.3.1. DETERMINATION OF SYMMETRY

The symmetry describes the variations of the different parameters which define the proportions.

The parameters that can characterize the symmetry of the brilliant-shapes are:

- Unroundness
- Variation on the crown height
- Variation on the pavilion depth
- Table out of centre
- Culet out of centre
- Table and culet out of centre
- Variation on the table width
- Variation on the girdle thickness (on max and min)
- Single cut
- Variation on the bezel angles
- Variation on the pavilion angles
- Variation on the angles of the upper girdle facets
- Variation on the angles of the lower girdle facets
- Deviations of the bezels (visual grading)
- Deviation of the pavilions (visual grading)
- Cone-shaped girdle (visual grading)
- Bow tie effect (visual grading)
- Misalignment (visual grading)
- Girdle partly faceted (visual grading)

The most important effects that can be perceived when observing the diamond perpendicular to the table are:

- Single cut effect:** The diamond looks as if it has less facets than are really present. A single cut effect is caused by the angles of the bezels/pavilions and the halves of the bezels/pavilion side.
- Bow tie effect:** Through the crown side, two dark zones in the shape of a bow tie can be seen.

The list of effects above is not exhaustive; there are other symmetry-related phenomena which are considered to be undesirable and which have an influence on the brilliancy of the diamond.

4.3.2. GRADING OF SYMMETRY

For all shapes of a diamond, an appreciation of the symmetry must be given.

The categories are:

Excellent - Very Good - Good - Fair

The latest technology makes it possible to measure the deviations accurately.

The variation on the measurements of the different parts of the stone can be a useful aid in determining the symmetry grade, since there exists an obvious relation between these variations and the appearance of the visual effects discussed in 4.3.1.

<i>Symmetry-deviations</i>	<i>Excellent</i>	<i>Very Good</i>	<i>Good</i>	<i>Fair</i>
Unroundness	<1.0%	<2.0%	< 4.0%	4.0% and up
Variation on the crown height	<1.0%	<2.0%	< 5.0%	5.0% and up
Variation on the pavilion depth	<2.0%	<3.0%	<6.0%	6.0% and up
Table out of centre	<1.0%	<2.0%	< 5.0%	5.0% and up
Culet out of centre	<1.0%	<2.0%	< 5.0%	5.0% and up
Table and culet out of centre	<1.0%	<2.0%	< 5.0%	5.0% and up
Variation on the table width	<2.0%	<4.0%	<8.0%	8.0% and up
Variation on the girdle thickness (on max and min)	<1.0%	<2.0%	<5.0%	5.0% and up
Single cut	<0.5%	<0.8%	<2.0%	2.0% and up
Variation on the bezel angles	<2.0°	<4.0°	<8.0°	8.0° and up
Variation on the pavilion angles	<1.0°	<2.0°	<4.0°	4.0° and up
Variation on the angles of the upper girdle facets	<2.0°	<4.0°	<8.0°	8.0° and up
Variation on the angles of the lower girdle facets	<1.0°	<2.0°	<4.0°	4.0° and up

Some of the symmetry deviations have to be done by visual grading because these measurements are not accurate enough.

- Deviation of the bezels
- Deviation of the pavilions
- Cone-shaped girdle
- Bow tie effect
- Misalignment
- Girdle partly faceted

4.4. POLISH

4.4.1. DETERMINATION OF POLISH

Polish defines all external characteristics of a diamond. These characteristics are mostly the result of processing the diamond from rough to polished.

The following belong to the external characteristics:

- Scratches
- Percussion figure
- Beard
- Polishing lines
- Abraded facet edges
- Pit
- Nick
- Burn marks
- Laser marks
- Extra facets
- Naturals

4.4.2. GRADING OF POLISH

External characteristics are graded as described in the following definitions, which are valid for use by an experienced grader.

Polish	Observation with loupe 10x
Excellent	Characteristics, not or very difficult to find with a loupe 10x
Very Good	Characteristics, difficult to find with a loupe 10x
Good	Characteristics, easy to find with a loupe 10x
Fair	Characteristics, very easy to find with a loupe 10x

Note : Additional laboratories may also use « poor »

Major external characteristics, visible from the crown side, may influence the clarity grading.

4.5 INTERDEPENDENCY

The proportion grade is based on the average of the measured values.

If there is a large deviation on one or more values, the beauty of the diamond can be influenced.

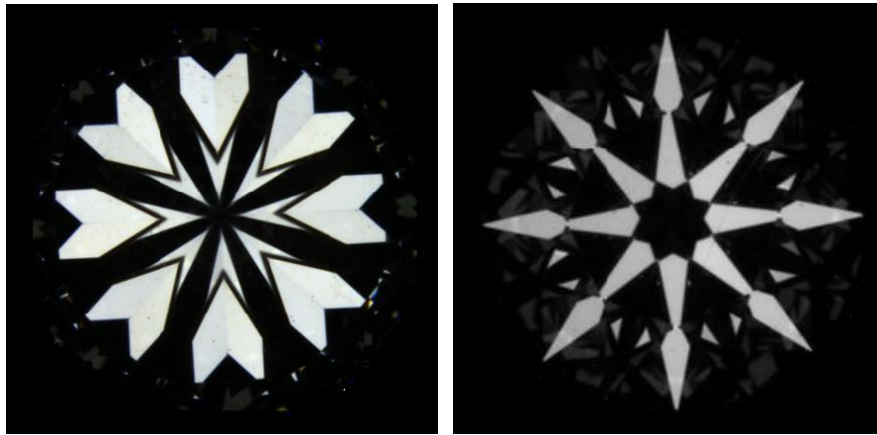
The table below shows the influence of symmetry and/or polish on the final proportion grade.

		Polish and Symmetry			
		Excellent	Very Good	Good	Fair
Proportions	Excellent	Excellent	Excellent	Very Good	Good
	Very Good	Very Good	Very Good	Very Good	Good
	Good	Good	Good	Good	Good
	Fair	Fair	Fair	Fair	Fair

Note : Additional laboratories may also use « poor »

4.6. HEARTS & ARROWS

Hearts & Arrows (H&A) diamonds are precisely cut round brilliants, polished with a very great precision and symmetry thus achieving a very high grade of brilliance and fire. When examined under specific light conditions and using a special viewer, display eight hearts through the pavilion from below and eight arrows through the crown from above.



The pavilion side must show eight nearly equally shaped hearts. The heart shape repeats itself, ideally, in a multiple of 22.5° .

The crown side must reveal eight arrow heads and shafts. The arrow head, formed by the pavilion seen through the bezel facet, must reach the girdle and line up with the shaft. The shafts and the arrow heads must be symmetrical and equally shaped. All the arrows must be clearly visible at the same time when seen from a direction perpendicular to the table. The shafts must touch or nearly touch each other at the base near the center of the brilliant. As with the heart shape the arrow repeats itself in a multiple of 22.5° . The appearance of the arrow shape is influenced by the pavilion angle, the main crown angle, the length of the crown halves and the table size of the brilliant.

Standard Hearts & Arrows viewers can be limited in their application and susceptible to human interpretation. The use of measuring equipment requires a validation by comparison to the standard viewer.

5. WEIGHT, DIAMOND SHAPES

5.1. WEIGHT

The weight of a diamond is always expressed in carats (ct), up to two decimals at least.

Is the weight expressed up to two decimals only, then it is rounded off downwards if the last three decimals are smaller than 849 (< x.xx849 ct). When the last three decimals are higher than 850 (> x.xx850 ct), the weight is rounded off upwards. (Reference norm: NEN 1047)

0.99850 ct → 0.999 ct → 1.00 ct
0.99849 ct → 0.998 ct → 0.99 ct

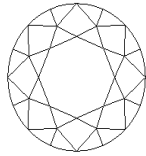
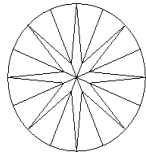
5.2. DIAMOND CUTS

5.2.1. COMMON CUT

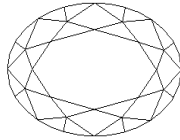
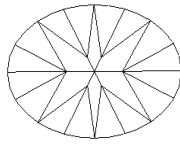
- brilliant cut
- oval cut
- pear cut
- marquise cut
- heart cut
- cushion cut
- princess cut
- emerald cut

These denominations are valid for the cuts, presented here in both top and bottom view.

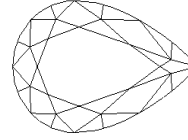
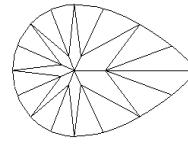
Brilliant cut



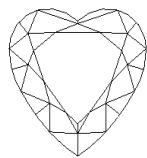
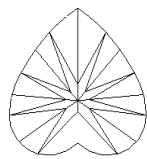
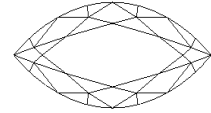
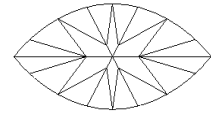
Oval cut



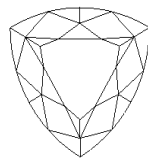
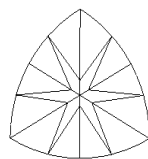
Pear cut



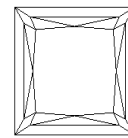
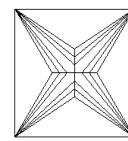
Marquise cut



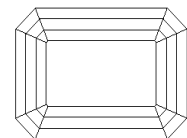
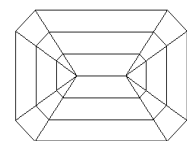
Heart cut



Cushion cut



Princess cut



Emerald cut

In case of deviations of these cuts or when similar shapes have an uncommon number of facets, they are given the additional mention "variation".

5.2.2. MEASUREMENTS

The three measurements of the shapes refer to the minimum diameter, the maximum diameter and the height (brilliant-shapes) or the length, width and height (other shapes).

Addendum to Rule 2.3.4.

Types of structure phenomena in diamonds

Speaking in terms of crystallography, the structure phenomena of diamonds can be divided into two groups:

a) structure phenomena in mono-crystals

Mono-crystals are, per definition, crystals having a crystal structure in one piece. This means that a mono-crystal is, in each of its points, oriented in the same way. In the case of a diamond, this has the effect that no change of grain direction occurs in a mono-crystal. Sawable goods are very typical examples of mono-crystals.

Generally speaking, mono-crystals can contain different kinds of structure phenomena. In diamonds, there are two typical phenomena which are encountered regularly. First, there are the so-called growth lines. These are fine-shaped zones in diamonds, difficult to find and generally seen in directions between 90° angles.

A second kind of structure phenomena in diamond mono-crystals is a grain disturbance, occurring in planes and mostly identifiable by externally visible (parallel) lines, usually over several facets of the polished diamond. These lines are called surface grain lines. The internally located planes may cause either colour effects (brownish colored zones) or white light reflections (reflective grain planes).

b) poly-crystals and their structure phenomena

A diamond can crystallize in such a way that the rough diamond is composed of two or more parts, the crystal structures of which are differently oriented. The transition between these various parts are called seams ("knots").

When such diamonds are polished, the seams are usually still identifiable in the form of internally visible seam planes and/or externally visible seam lines (knot lines).

A special form of poly-crystals are the twinning crystals, called "macles" in the trade. Macles are diamonds composed of two parts in whose respective crystal orientation there is a consistent correspondence. For the one part it is the reflected image of the other, the reflecting plane being located in a cleaving direction of the diamond. In the same way for the other poly-crystals the transition between both parts of the made is visible in the polished diamond as a plane, called twinning plane and/or as a line crossing the whole diamond, called twinning line.