PTO Form 1960 (Rev 10/2011)
OMB No. 0651-0050 (Exp 07/31/2017)

Request for Reconsideration after Final Action

The table below presents the data as entered.

Input Field	Entered
SERIAL NUMBER	86502276
LAW OFFICE ASSIGNED	LAW OFFICE 117
MARK SECTION	
MARK	http://tmng-al.uspto.gov/resting2/api/img/86502276/large
LITERAL ELEMENT	BRILLIANT COUTURE
STANDARD CHARACTERS	YES
USPTO-GENERATED IMAGE	YES
MARK STATEMENT	The mark consists of standard characters, without claim to any particular font style, size or color.
ARGUMENT(S)	

REQUEST FOR RECONSIDERATION

This responds to the Office Action mailed on August 6, 2015.

The Examining Attorney made the following requirement and refusal final:

- Requirement to Reclassify Retail Store Services from Class 14 to Class 35; and
- Section 2(e)(1) Descriptiveness Refusal.

Applicant responds to each issue in turn below.

A. Requirement to Reclassify Retail Store Services from Class 14 to Class 35

The Examining Attorney noted that the wording “retail store services and retail on-line services featuring jewelry, including rings, watches, bracelets, pendants, earrings, necklaces, brooches and pins” in Class 14 must be reclassified into Class 35. In response, Applicant has deleted this wording from the application. In view of the deletion of these services from the application, Applicant submits that this requirement is now moot.

B. Section 2(e)(1) Descriptiveness Refusal

In the non-final Office Action mailed on February 3, 2015, the Examining Attorney refused registration of Applicant's mark because the word "brilliant" means "a gem, esp. a diamond, cut in a certain way with many facets for maximum brilliance" and "couture" means "high fashion designing." According to the Examining Attorney, Applicant's mark is merely descriptive of the fact that the "goods are cut in the brilliant shape" and are "couture, or designed for high-fashion."

In response to the February 3, 2015 Office Action, Applicant disclaimed the term COUTURE and argued that the term BRILLIANT featured in the BRILLIANT COUTURE mark is not primarily merely descriptive. But, the Examining Attorney continued and made final the refusal to register Applicant's BRILLIANT COUTURE mark because she claims that the mark is primarily merely descriptive under Section 2(e)(1) of the Lanham Act, 15 U.S.C. § 1052(e)(1).

Applicant's principal arguments in support of registration are as follows:

- Applicant's mark is subject to different meanings, is a double entendre and not merely descriptive; and
- the U.S. Patent and Trademark Office has acknowledged that the term BRILLIANT is subject to multiple, non-descriptive, meanings in the context of jewelry.

i. Applicant's Mark is Subject to Different Meanings, is a Double Entendre and not Merely Descriptive

Applicant previously argued that the wording BRILLIANT is subject to other meanings. But, the Examining Attorney argued that "[d] escriptiveness is considered in relation to the relevant goods and services," *citing*, *DuoProSS Meditech Corp. v. Inviro Med. Devices, Ltd.*, 695 F.3d 1247, 1254, 103 USPQ2d 1753, 1757 (Fed. Cir. 2012). The Examining Attorney also stated "[t]hat a term may have other meanings in different contexts is not controlling," *citing*, *In re Franklin Cnty. Historical Soc'y* , 104 USPQ2d 1085, 1087 (TTAB 2012) (citing *In re Bright-Crest, Ltd.*, 204 USPQ 591, 593 (TTAB 1979)); TMEP §1209.03(e). Applicant respectfully requests that the Examining Attorney reconsider her position on this issue in view of the arguments below.

The word BRILLIANT is defined as:

- shining brightly; sparkling; glittering; lustrous (adjective);
- distinguished; illustrious (adjective);
- having or showing great intelligence, talent, quality, etc. (adjective);
- strong and clear in tone; vivid; bright (adjective);
- splendid or magnificent (adjective);
- a gem, especially a diamond, having any of several varieties of the brilliant cut (noun);
- very bright; flashing with light (adjective);
- very impressive or successful (adjective); or
- striking; distinctive (adjective).

Applicant previously provided a printout from the Merriam Webster online dictionary as Exhibit A to its first Response to Office Action. Another printout from the Merriam Webster online dictionary, and printouts from Dictionary.com and Collins' English Dictionary are attached

hereto as Exhibit A.

The Examining Attorney's position on the descriptiveness of Applicant's mark is premised on the theory that Applicant's mark is descriptive of the fact that the goods are composed of a gem, especially a diamond, having any of several varieties of the brilliant cut. But, Applicant's mark is a double entendre. A "double entendre" is a word or expression capable of more than one interpretation. For trademark purposes, a "double entendre" is an expression that has a double connotation or significance *as applied to the goods or services*. The mark that comprises the "double entendre" will not be refused registration as merely descriptive if one of its meanings is not merely descriptive in relation to the goods or services. TMEP §1213.05(c).

Here, in the context of jewelry, the word brilliant could refer to jewelry that is lustrous, distinguished, magnificent, impressive or striking. These are all words that are often used in connection with the marketing of jewelry. The case law on the subject of "double entendre" marks makes it clear that the associations that the public make must be fairly readily, and *must be readily apparent from the mark itself*. . TMEP §1213.05(c). Here, consumers are likely to perceive the mark as a reference to couture jewelry that is distinctive, striking, distinguished or impressive. In fact, it is more likely that consumers will associate the word BRILLIANT with these meanings that as a particular cut of diamond. A "brilliant' cut diamond is a particular cut of diamond that does not scream "couture" (high fashion) to consumers. It is one of the most common cuts of diamonds (see Exhibit B) and does evoke feelings of "couture" or high fashion design to consumers. So, consumers are more likely to associate the word BRILLIANT with its other meanings.

ii. The U.S. Patent and Trademark Office Has Acknowledged that the term BRILLIANT is Subject to Multiple, Non-Descriptive, Meanings in the Context of Jewelry

The Examining Attorney appears to have misunderstood the purpose of the third party registrations attached to Applicant's August 3, 2015 Response to Office Action. In the August 6, 2015 Office Action the Examining Attorney asserted that "[t] he applicant argues that other registrations exist on the register for jewelry that contain the word BRILLIANT, and therefore its mark should register . . . The fact that third-party registrations exist for marks allegedly similar to applicant's mark is not conclusive on the issue of descriptiveness. [citations omitted]."

As set forth in Applicant's August 6, 2016 Response to Office Action, the third party registrations that were submitted were for the purpose of demonstrating that the word BRILLIANT is ambiguous and subject to multiple meanings, and that on numerous occasions the Trademark Office has recognized that the that the term BRILLIANT is not always a descriptive term.

EVIDENCE SECTION	
EVIDENCE FILE NAME(S)	
ORIGINAL PDF FILE	evi_631382302-20160208174826940313_._01870527.PDF
CONVERTED PDF FILE(S) (28 pages)	\\TICRS\EXPORT16\IMAGEOUT16\865\022\86502276\xml7\RFR0002.JPG
	\\TICRS\EXPORT16\IMAGEOUT16\865\022\86502276\xml7\RFR0003.JPG
	\\TICRS\EXPORT16\IMAGEOUT16\865\022\86502276\xml7\RFR0004.JPG
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	\\TICRS\EXPORT16\IMAGEOUT16\865\022\86502276\xml7\RFR0029.JPG
DESCRIPTION OF EVIDENCE FILE	Exhibits A and B
GOODS AND/OR SERVICES SECTION (current)	
INTERNATIONAL CLASS	014
DESCRIPTION	
jewelry, namely, wedding bands, rings, bracelets, pendants, earrings, necklaces, brooches and jewelry pins, retail store services and retail on-line services featuring jewelry, including rings, watches, bracelets, pendants, earrings, necklaces, brooches and pins	
FILING BASIS	Section 1(b)
GOODS AND/OR SERVICES SECTION (proposed)	
INTERNATIONAL CLASS	014
TRACKED TEXT DESCRIPTION	
~~jewelry, namely, wedding bands, rings, bracelets, pendants, earrings, necklaces, brooches and jewelry pins, retail store services and retail on-line services featuring jewelry, including rings, watches, bracelets, pendants, earrings, necklaces, brooches and pins~~; jewelry, namely, wedding bands, rings, bracelets, pendants, earrings, necklaces, brooches and jewelry pins	
FINAL DESCRIPTION	
jewelry, namely, wedding bands, rings, bracelets, pendants, earrings, necklaces, brooches and jewelry pins;	
FILING BASIS	Section 1(b)
SIGNATURE SECTION	
RESPONSE SIGNATURE	/MM/
SIGNATORY'S NAME	Max Moskowitz
SIGNATORY'S POSITION	Attorney for Applicant, New York bar member
SIGNATORY'S PHONE NUMBER	(212) 382-0700
DATE SIGNED	02/08/2016
AUTHORIZED SIGNATORY	YES
CONCURRENT APPEAL NOTICE FILED	YES

FILING INFORMATION SECTION	
SUBMIT DATE	Mon Feb 08 17:51:09 EST 2016
TEAS STAMP	USPTO/RFR-XX.XXX.XXX.X-20 160208175109803277-865022 76-550c157d15d7818146fc5f 0f87ce4f2d0e3ae42b04387e0 d5e54ad7a1cf128550ca-N/A- N/A-20160208174826940313

Request for Reconsideration after Final Action

To the Commissioner for Trademarks:

Application serial no. **86502276** BRILLIANT COUTURE(Standard Characters, see http://tmng-al.uspto.gov/resting2/api/img/86502276/large) has been amended as follows:

ARGUMENT(S)
In response to the substantive refusal(s), please note the following:

REQUEST FOR RECONSIDERATION

This responds to the Office Action mailed on August 6, 2015.

The Examining Attorney made the following requirement and refusal final:

- Requirement to Reclassify Retail Store Services from Class 14 to Class 35; and
- Section 2(e)(1) Descriptiveness Refusal.

Applicant responds to each issue in turn below.

A. Requirement to Reclassify Retail Store Services from Class 14 to Class 35

The Examining Attorney noted that the wording “retail store services and retail on-line services featuring jewelry, including rings, watches, bracelets, pendants, earrings, necklaces, brooches and pins” in Class 14 must be reclassified into Class 35. In response, Applicant has deleted this wording from the application. In view of the deletion of these services from the application, Applicant submits that this requirement is now moot.

B. Section 2(e)(1) Descriptiveness Refusal

In the non-final Office Action mailed on February 3, 2015, the Examining Attorney refused

registration of Applicant's mark because the word "brilliant" means "a gem, esp. a diamond, cut in a certain way with many facets for maximum brilliance" and "couture" means "high fashion designing." According to the Examining Attorney, Applicant's mark is merely descriptive of the fact that the "goods are cut in the brilliant shape" and are "couture, or designed for high-fashion."

In response to the February 3, 2015 Office Action, Applicant disclaimed the term COUTURE and argued that the term BRILLIANT featured in the BRILLIANT COUTURE mark is not primarily merely descriptive. But, the Examining Attorney continued and made final the refusal to register Applicant's BRILLIANT COUTURE mark because she claims that the mark is primarily merely descriptive under Section 2(e)(1) of the Lanham Act, 15 U.S.C. § 1052(e)(1).

Applicant's principal arguments in support of registration are as follows:

- Applicant's mark is subject to different meanings, is a double entendre and not merely descriptive; and
- the U.S. Patent and Trademark Office has acknowledged that the term BRILLIANT is subject to multiple, non-descriptive, meanings in the context of jewelry.

i. Applicant's Mark is Subject to Different Meanings, is a Double Entendre and not Merely Descriptive

Applicant previously argued that the wording BRILLIANT is subject to other meanings. But, the Examining Attorney argued that "[d] escriptiveness is considered in relation to the relevant goods and services," *citing*, *DuoProSS Meditech Corp. v. Inviro Med. Devices, Ltd.*, 695 F.3d 1247, 1254, 103 USPQ2d 1753, 1757 (Fed. Cir. 2012). The Examining Attorney also stated "[t]hat a term may have other meanings in different contexts is not controlling," *citing*, *In re Franklin Cnty. Historical Soc'y* , 104 USPQ2d 1085, 1087 (TTAB 2012) (citing *In re Bright-Crest, Ltd.*, 204 USPQ 591, 593 (TTAB 1979)); TMEP §1209.03(e). Applicant respectfully requests that the Examining Attorney reconsider her position on this issue in view of the arguments below.

The word BRILLIANT is defined as:

- shining brightly; sparkling; glittering; lustrous (adjective);
- distinguished; illustrious (adjective);
- having or showing great intelligence, talent, quality, etc. (adjective);
- strong and clear in tone; vivid; bright (adjective);
- splendid or magnificent (adjective);
- a gem, especially a diamond, having any of several varieties of the brilliant cut (noun);
- very bright; flashing with light (adjective);
- very impressive or successful (adjective); or
- striking; distinctive (adjective).

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The Examining Attorney's position on the descriptiveness of Applicant's mark is premised on

the theory that Applicant's mark is descriptive of the fact that the goods are composed of a gem, especially a diamond, having any of several varieties of the brilliant cut. But, Applicant's mark is a double entendre. A "double entendre" is a word or expression capable of more than one interpretation. For trademark purposes, a "double entendre" is an expression that has a double connotation or significance *as applied to the goods or services*. The mark that comprises the "double entendre" will not be refused registration as merely descriptive if one of its meanings is not merely descriptive in relation to the goods or services. TMEP §1213.05(c).

Here, in the context of jewelry, the word brilliant could refer to jewelry that is lustrous, distinguished, magnificent, impressive or striking. These are all words that are often used in connection with the marketing of jewelry. The case law on the subject of "double entendre" marks makes it clear that the associations that the public make must be fairly readily, and *must be readily apparent from the mark itself*. . TMEP §1213.05(c). Here, consumers are likely to perceive the mark as a reference to couture jewelry that is distinctive, striking, distinguished or impressive. In fact, it is more likely that consumers will associate the word BRILLIANT with these meanings that as a particular cut of diamond. A "brilliant' cut diamond is a particular cut of diamond that does not scream "couture" (high fashion) to consumers. It is one of the most common cuts of diamonds (see Exhibit B) and does evoke feelings of "couture" or high fashion design to consumers. So, consumers are more likely to associate the word BRILLIANT with its other meanings.

ii. The U.S. Patent and Trademark Office Has Acknowledged that the term BRILLIANT is Subject to Multiple, Non-Descriptive, Meanings in the Context of Jewelry

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EVIDENCE

Evidence in the nature of Exhibits A and B has been attached.
Original PDF file:
evi_631382302-20160208174826940313_._01870527.PDF
Converted PDF file(s) (28 pages)
Evidence-1
Evidence-2
Evidence-3
Evidence-4
Evidence-5
Evidence-6
Evidence-7
Evidence-8
Evidence-9
Evidence-10
Evidence-11
Evidence-12
Evidence-13
Evidence-14
Evidence-15
Evidence-16
Evidence-17
Evidence-18
Evidence-19
Evidence-20
Evidence-21
Evidence-22
Evidence-23
Evidence-24
Evidence-25
Evidence-26
Evidence-27
Evidence-28

CLASSIFICATION AND LISTING OF GOODS/SERVICES
Applicant proposes to amend the following class of goods/services in the application:
Current: Class 014 for jewelry, namely, wedding bands, rings, bracelets, pendants, earrings, necklaces, brooches and jewelry pins, retail store services and retail on-line services featuring jewelry, including rings, watches, bracelets, pendants, earrings, necklaces, brooches and pins
Original Filing Basis:
Filing Basis: Section 1(b), Intent to Use: ***For a trademark or service mark application:*** As of the application filing date, the applicant had a bona fide intention, and was entitled, to use the mark in commerce on or in connection with the identified goods/services in the application. ***For a collective trademark, collective service mark, or collective membership mark application:*** As of the application filing date, the applicant had a bona fide intention, and was entitled, to exercise legitimate control over the use of the mark in commerce by members on or in connection with the identified goods/services/collective membership organization. ***For a certification mark application:*** As of the application filing date, the applicant had a bona fide intention, and was entitled, to exercise legitimate control over the use of the mark in commerce by authorized users in connection with the identified goods/services, and the applicant

will not engage in the production or marketing of the goods/services to which the mark is applied, except to advertise or promote recognition of the certification program or of the goods/services that meet the certification standards of the applicant.

Proposed:
Tracked Text Description: ~~jewelry, namely, wedding bands, rings, bracelets, pendants, earrings, necklaces, brooches and jewelry pins, retail store services and retail on-line services featuring jewelry, including rings, watches, bracelets, pendants, earrings, necklaces, brooches and pins~~; jewelry, namely, wedding bands, rings, bracelets, pendants, earrings, necklaces, brooches and jewelry pins

Class 014 for jewelry, namely, wedding bands, rings, bracelets, pendants, earrings, necklaces, brooches and jewelry pins;
Filing Basis: Section 1(b), Intent to Use: ***For a trademark or service mark application:*** As of the application filing date, the applicant had a bona fide intention, and was entitled, to use the mark in commerce on or in connection with the identified goods/services in the application. ***For a collective trademark, collective service mark, or collective membership mark application:*** As of the application filing date, the applicant had a bona fide intention, and was entitled, to exercise legitimate control over the use of the mark in commerce by members on or in connection with the identified goods/services/collective membership organization. ***For a certification mark application:*** As of the application filing date, the applicant had a bona fide intention, and was entitled, to exercise legitimate control over the use of the mark in commerce by authorized users in connection with the identified goods/services, and the applicant will not engage in the production or marketing of the goods/services to which the mark is applied, except to advertise or promote recognition of the certification program or of the goods/services that meet the certification standards of the applicant.

SIGNATURE(S)
Request for Reconsideration Signature
Signature: /MM/ Date: 02/08/2016
Signatory's Name: Max Moskowitz
Signatory's Position: Attorney for Applicant, New York bar member

Signatory's Phone Number: (212) 382-0700

The signatory has confirmed that he/she is an attorney who is a member in good standing of the bar of the highest court of a U.S. state, which includes the District of Columbia, Puerto Rico, and other federal territories and possessions; and he/she is currently the owner's/holder's attorney or an associate thereof; and to the best of his/her knowledge, if prior to his/her appointment another U.S. attorney or a Canadian attorney/agent not currently associated with his/her company/firm previously represented the owner/holder in this matter: (1) the owner/holder has filed or is concurrently filing a signed revocation of or substitute power of attorney with the USPTO; (2) the USPTO has granted the request of the prior representative to withdraw; (3) the owner/holder has filed a power of attorney appointing him/her in this matter; or (4) the owner's/holder's appointed U.S. attorney or Canadian attorney/agent has filed a power of attorney appointing him/her as an associate attorney in this matter.

The applicant is filing a Notice of Appeal in conjunction with this Request for Reconsideration.

Serial Number: 86502276
Internet Transmission Date: Mon Feb 08 17:51:09 EST 2016
TEAS Stamp: USPTO/RFR-XX.XXX.XXX.X-20160208175109803

277-86502276-550c157d15d7818146fc5f0f87c
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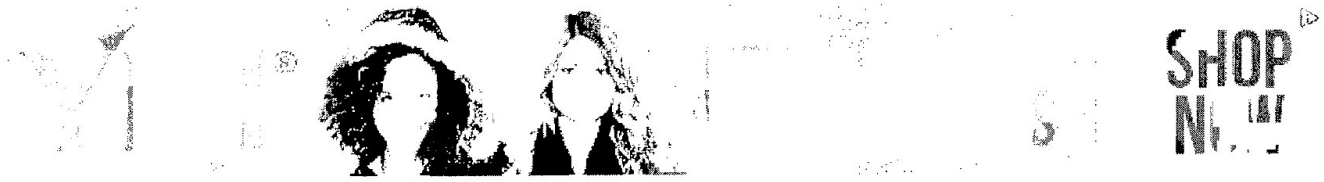
Exhibit A



brilliant (http://static.sfdict.com/staticrep/dictaudio/B06/B0617800.mp3)

[**bril**-y*uh* nt]

Synonyms Examples Word Origin

adjective

;3A%2F%2Fdictionary.reference.com%2Fbrowse%2Fbrilliant%3Fs%3Dt)

1. shining brightly; sparkling; glittering; lustrous:
   the brilliant lights of the city.

2. distinguished; illustrious:
   a brilliant performance by a young pianist.

3. having or showing great intelligence, talent, quality, etc.:
   a brilliant technician.

4. strong and clear in tone; vivid; bright:
   brilliant blues and greens; the brilliant sound of the trumpets.

5. splendid or magnificent:
   a brilliant social event.

noun

6. *Jewelry.* a gem, especially a diamond, having any of several varieties of the brilliant cut (http://dictionary.reference.com/browse/brilliant cut).

7. *Printing.* a size of type about 3½-point.

Origin of brilliant

rench
http://dictionary.reference.com/browse/French)

Italian
(http://dictionary.reference.com/browse/Italian)

1675-1685

1675-85; < French *brillant* shining, present participle of *briller* < Italian *brillare* to glitter (perhaps derivative of an expressive root); see -ant
(http://dictionary.reference.com/browse/-ant)

Related forms

brilliantly, adverb

brilliantness, noun

overbrilliant, adjective

overbrilliantly, adverb

quasi-brilliant, adjective

Synonyms

1. See bright (http://dictionary.reference.com/browse/bright).

Examples from the Web for brilliant

Contemporary Examples

A *brilliant* new film presents Hannah Arendt in the midst of the Eichmann trial and the controversy around her reporting.

(http://www.thedailybeast.com/?source=dictionary) The Importance of Being Hannah Arendt (http://www.thedailybeast.com/articles/2013/06/04/the-importance-of-being-hannah-arendt.html?source=dictionary)
Daphne Merkin (http://www.thedailybeast.com/contributors/daphne-merkin.html?source=dictionary)
June 3, 2013

A *brilliant* city rich with culture, customs and the best accent on earth.

(http://www.thedailybeast.com/?source=dictionary) Go! With a Suitcase (http://www.thedailybeast.com/articles/2011/02/26/london-a-travel-guide-to-uk-vendors.html?source=dictionary)

Jolie Hunt (http://www.thedailybeast.com/contributors/jolie-hunt.html?source=dictionary)
February 25, 2011

Cookbook The pizza dough from A16 by Nate Appleman is *brilliant* for pies at home.

(http://www.thedailybeast.com/articles/2009/07/21/fresh-picks-4.html?source=dictionary)

British Dictionary definitions for brilliant

brilliant

/ˈbrɪljənt/

adjective

1. shining with light; sparkling

2. (of a colour) having a high saturation and reflecting a considerable amount of light; vivid

Word Origin and History for brilliant

adj.

1680s, from French *brilliant* "sparkling, shining" present participle of *briller* "to shine" (16c.), from Italian *brillare* "sparkle, whirl," perhaps from Vulgar Latin **berillare* "to shine like a beryl," from *berillus* "beryl, precious stone," from Latin *beryllus* (see beryl (/browse/beryl)).

In reference to diamonds (1680s) it means a flat-topped cut invented 17c. by Venetian cutter Vincenzo Peruzzi.

Slang definitions & phrases for brilliant

brilliant

interjection

Excellent *: Go outside for lunch? Brilliant!*

brilliant in Technology

One of five pedagogical languages based on Markov (http://dictionary.reference.com/browse/Markov) algorithms (http://dictionary.reference.com/browse/algorithms), used in ["Nonpareil, a Machine Level Machine Independent Language for the Study of Semantics", B. Higman, ULICS Intl Report No ICSI 170, U London (1968)].
See also Diamond (http://dictionary.reference.com/browse/Diamond), Nonpareil (http://dictionary.reference.com/browse/Nonpareil), Pearl (http://dictionary.reference.com/browse/Pearl), Ruby (http://dictionary.reference.com/browse/Ruby).

Browse the American Dictionary (A-Z)

brilliant ('brɪljənt)

▸ Definitions

adjective

1. shining brightly; sparkling
2. vivid; intense
3. very splendid or distinguished
4. having or showing keen intelligence, great talent or skill, etc.

noun

5. a gem, esp. a diamond, cut in a certain way with many facets for maximum brilliance

bright

Derived Forms

brilliantly *adverb*

▸ Word Origin

Fr *brillant*, sparkling, prp. of *briller*, to sparkle, glitter < It *brillare*, sparkle, whirl

View thesaurus entry

▸ Synonyms

= **shining**, **bright**, dazzling, glittering, intense, luminous, radiant, sparkling, vivid

= **splendid**, celebrated, famous, glorious, illustrious, magnificent, notable, outstanding, superb

= intelligent, clever, expert, gifted, intellectual, inventive, masterly, penetrating, profound, talented

▸ Translations for 'brilliant'

American English: brilliant A *brilliant* person, idea, or performance is extremely clever or skillful.She had a brilliant mind.

Arabic: رائع

Brazilian Portuguese: brilhante

Chinese: 卓越的

Croatian: sjajan

Czech: geniální

Danish: glimrende

Dutch: briljant

European Spanish: brillante

Finnish: loistava

French: génial

German: glänzend

Greek: υπέροχος *υπέροχη*

Italian: brillante intelligente

Japanese: 光り輝く

Korean: 빛나는

Norwegian: strålende

Polish: genialny *genialna*

Portuguese: brilhante

Romanian: sclipitor *sclipitor, sclipitoare, sclipitori, sclipitoare*

Russian: блестящий

Spanish: brillante

Swedish: strålande

Thai: พรายแสง ฉลาดเยี่ยม

Turkish: parıl parıl

Ukrainian: визначний

Vietnamese: rất thông minh

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Mark Burnell CHAMELEON (2002)

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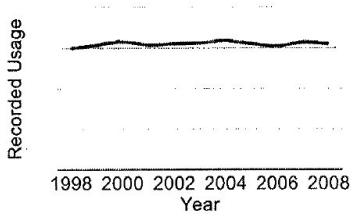

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brilliant

adjective | bril·liant | \ bril-yənt\

Simple Definition of BRILLIANT

Popularity: Top 40% of words

: very bright : flashing with light

: very impressive or successful

: extremely intelligent : much more intelligent than most people

Full Definition of BRILLIANT

1 : very bright : GLITTERING <a *brilliant* light>

2 a : STRIKING, DISTINCTIVE <a *brilliant* example>
b : distinguished by unusual mental keenness or alertness

3 *British* : very good : EXCELLENT

—**bril·liant·ly** *adverb*

See **brilliant** defined for English-language learners

See **brilliant** defined for kids

BROWSE DICTIONARY

brilliancy

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Exhibit B

Diamond cut

From Wikipedia, the free encyclopedia

A **diamond cut** is a style or design guide used when shaping a diamond for polishing such as the brilliant cut. Cut does not refer to shape (pear, oval), but the symmetry, proportioning and polish of a diamond. The cut of a diamond greatly affects a diamond's brilliance; this means if it is cut poorly, it will be less luminous.

In order to best use a diamond gemstone's material properties, a number of different **diamond cuts** have been developed. A diamond cut constitutes a more or less symmetrical arrangement of facets, which together modify the shape and appearance of a diamond crystal. Diamond cutters must consider several factors, such as the shape and size of the crystal, when choosing a cut. The practical history of diamond cuts can be traced back to the Middle Ages, while their theoretical basis was not developed until the turn of the 20th century. Design creation and innovation continue to the present day: new technology—notably laser cutting and computer-aided design—has enabled the development of cuts which complexity, optical performance, and waste reduction were hitherto unthinkable.

The most popular of diamond cuts is the modern *round brilliant*, which facet arrangements and proportions have been perfected by both mathematical and empirical analysis. Also popular are the *fancy cuts*, which come in a variety of shapes—many of which were derived from the round brilliant. A diamond's cut is evaluated by trained graders, with higher grades given to stones whose symmetry and proportions most closely match the particular "ideal" used as a benchmark. The strictest standards are applied to the round brilliant; although its facet count is invariable, its proportions are not. Different countries base their cut grading on different ideals: one may speak of the *American Standard* or the *Scandinavian Standard* (*Scan. D.N.*), to give but two examples.

Contents

History

The history of diamond cuts can be traced to the late Middle Ages, before which time diamonds were employed in their natural octahedral state—anhedral (poorly formed) diamonds simply were not used in jewelry. The first "improvements" on nature's design involved a simple polishing of the octahedral crystal faces to create even and unblemished facets, or to fashion the desired octahedral shape out of an otherwise unappealing piece of rough. This was called the *point cut* and dates from the mid 14th century; by 1375 there was a guild of diamond polishers at Nürnberg. By the mid 15th century, the point cut began to be improved upon: a little less than one half of the octahedron would be sawn off, creating the *table cut*. The importance of a culet was also realised, and some table-cut stones may possess one. The addition of four corner facets created the *old single cut* (or old eight cut). Neither of these early cuts would reveal what diamond is prized for today; its strong dispersion or *fire*. At the time, diamond was valued chiefly for its adamantine lustre and superlative hardness; a table-cut diamond would appear black to the eye, as they do in paintings of the era. For this reason, colored gemstones such as ruby and sapphire were far more popular in jewelry of the era.

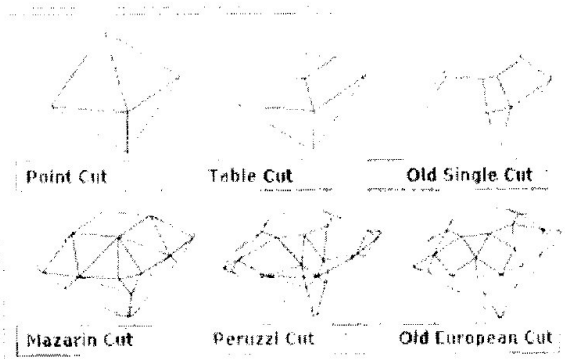


Diagram of old diamond cuts showing their evolution from the most primitive (point cut) to the most advanced pre-Tolkowsky cut (old European). The rose cut is omitted, but it could be considered intermediate between the old single and Mazarin cuts.

In or around 1476, Lodewyk (Louis) van Berquem, a Flemish polisher of Bruges, introduced the technique of absolute symmetry in the disposition of facets using a device of his own invention, the scaif. He cut stones in the shape known as *pendeloque* or *briolette*; these were pear-shaped with triangular facets on both sides. About the middle of the 16th century, the *rose* or *rosette* was introduced in Antwerp: it also consisted of triangular facets arranged in a symmetrical radiating pattern, but with the bottom of the stone left flat—essentially a crown without a pavilion. Many large, famous Indian diamonds of old (such as the Orloff and Sancy) also feature a rose-like cut; there is some suggestion that Western cutters were influenced by Indian stones, because some of these diamonds may predate the Western adoption of the rose cut. However, Indian "rose cuts" were far less symmetrical as their cutters had the primary interest of conserving carat weight, due to the divine status of diamond in India. In either event, the rose cut continued to evolve, with its depth, number and arrangements of facets being tweaked.

The first brilliant cuts were introduced in the middle of the 17th century. Known as *Mazarins*, they had 17 facets on the crown (upper half). They are also called *double-cut* brilliants as they are seen as a step up from old single cuts. Vincent Peruzzi, a Venetian polisher, later increased the number of crown facets from 17 to 33 (*triple-cut* or *Peruzzi* brilliants), thereby significantly increasing the fire and brilliance of the cut gem, properties that in the Mazarin were already incomparably better than in the rose. Yet Peruzzi-cut diamonds, when seen nowadays, seem exceedingly dull compared to modern-cut brilliants. Because the practice of bruting had not yet been developed, these early brilliants were all rounded squares or rectangles in cross-section (rather than circular). Given the general name of *cushion*—what are known today as

old mine cuts—these were common by the early 18th century. Sometime later the *old European cut* was developed, which had a shallower pavilion, more rounded shape, and different arrangement of facets. The old European cut was the forerunner of modern brilliants and was the most advanced in use during the 19th century.

Around 1900, the development of diamond saws and good jewelry lathes enabled the development of modern diamond cutting and diamond cuts, chief among them the *round brilliant* cut. In 1919, Marcel Tolkowsky analyzed this cut: his calculations took both *brilliance* (the amount of white light reflected) and fire into consideration, creating a delicate balance between the two.[1] Tolkowsky's calculations would serve as the basis for all future brilliant cut modifications and standards.

Tolkowsky's model of the "ideal" cut is not perfect. The original model served as a general guideline, and did not explore or account for several aspects of diamond cut:[2]

> Because every facet has the potential to change a light ray's plane of travel, *every facet must be considered in any complete calculation of light paths*. Just as a two-dimensional slice of a diamond provides incomplete information about the three-dimensional nature of light behavior inside a diamond, this two-dimensional slice also provides incomplete information about light behavior *outside* the diamond. A diamond's panorama is three-dimensional. Although diamonds are highly symmetrical, light can enter a diamond from many directions and many angles. This factor further highlights the need to reevaluate Tolkowsky's results, and to recalculate the effects of a diamond's proportions on its appearance aspects. ...

> Another important point to consider is that Tolkowsky did not follow the path of a ray that was reflected more than twice in the diamond. However, we now know that a diamond's appearance is composed of many light paths that reflect considerably more than two times within that diamond. Once again, we can see that Tolkowsky's predictions are helpful in explaining optimal diamond performance, but they are incomplete by today's technological standards.

Tolkowsky's guidelines, while revolutionary in their day, are not a definitive solution to the problem of finding the optimum proportions of a round brilliant cut diamond.

In the 1970s, Bruce Harding developed another mathematical model for gem design. Since then, several groups have used computer models[1][3] and specialized scopes to design diamond cuts.

The world's top diamond cutting and polishing center is India. It processes 11 out of 12 diamonds in jewelry worldwide. The sector employs 1.3 million people and accounts for 14% of India's $80 billion of annual exports. Its share in the world polished diamond market is 92% by pieces and 55% by value.

Theory

In its rough state, a diamond is fairly unremarkable in appearance. Most gem diamonds are recovered from secondary or alluvial deposits, and such diamonds have dull, battered external surfaces often covered by a gummy, opaque skin—a comparison to "lumps of washing soda" is apt. The act of polishing a diamond and creating flat facets in symmetrical arrangement brings out the diamond's hidden beauty in dramatic fashion.

When designing a diamond cut, two primary factors are considered. Foremost is the refractive index (RI) of a diamond, which, at 2.417 (as measured by sodium light, 589.3 nm), is fairly high compared with that of most other gems. Diamond's RI is responsible for its *brilliance*—the amount of incident light reflected back to the viewer. Also important is a diamond's dispersive power—the ability of the material to split white light into its component spectral colors—which is also relatively high, at 0.044 (as measured from the B-G interval). The flashes of spectral colors—known as *fire*—are a function of this dispersion, but are, like brilliance, only apparent after cutting.

Brilliance can be divided into the definitions *external brilliance* and *internal brilliance*. The former is the light reflected from the surface of the stone—its *luster*. Diamond's *adamantine* ("diamond-like") luster is second only to *metallic* (i.e., that of metals); while it is directly related to RI, the quality of a finished gem's polish will determine how well a diamond's luster is borne out.

Internal brilliance—the percentage of incident light reflected back to the viewer from the rear (pavilion) facets—relies on careful consideration of a cut's interfacial angles as they relate to diamond's RI. The goal is to attain total internal reflection (TIR) by choosing the *crown angle* and *pavilion angle* (the angle formed by the pavilion facets and girdle plane) such that the reflected light's angle of incidence (when reaching the pavilion facets) falls outside diamond's *critical angle*, or minimum angle for TIR, of 24.4°. Two observations can be made: if the pavilion is too shallow, light meets the pavilion facets within the critical angle, and is refracted (i.e., lost) through the pavilion bottom into the air. If the pavilion is too deep, light is initially reflected outside the critical angle on one side of the pavilion, but meets the opposite side within the critical angle and is then refracted out the side of the stone.

The term *scintillation brilliance* is applied to the number and arrangement of light reflections from the internal facets; that is, the degree of "sparkle" seen when the stone or observer moves. Scintillation is dependent on the size, number, and symmetry of facets, as well as on quality of polish. Very small stones will appear milky if their scintillation is too great (due to the limitations of the human eye), whereas larger stones will appear lifeless if their facets are too large or too few.

A diamond's fire is determined by the cut's *crown height* and *crown angle* (the *crown* being the top half of the stone, above the girdle), and the size and number of facets that compose it. The crown acts as a prism: light exiting the stone (after reflection from the pavilion facets) should meet the crown facets at as great an angle of incidence from the normal as possible (without exceeding the critical angle) in order to achieve the greatest fanning out or spread of spectral colors. The crown height is related to the crown angle, the crown facet size, and the *table size* (the largest central facet of the crown): a happy medium is sought in a table that is not too small (which would result in larger crown facets and greater fire at the expense of brilliance) or too large (which would result in smaller crown facets and little to no fire).

Polish and symmetry

Polish and symmetry are two important aspects of the cut. The polish describes the smoothness of the diamond's facets, and the symmetry refers to alignment of the facets. With poor polish, the surface of a facet can be dulled, and may create blurred or dulled sparkle. Often the surface of a poor polished diamond will have grain lines running across the facet. It may also constantly look like it needs to be cleaned. With poor symmetry, light can be misdirected as it enters and exits the diamond.

Choice of cut

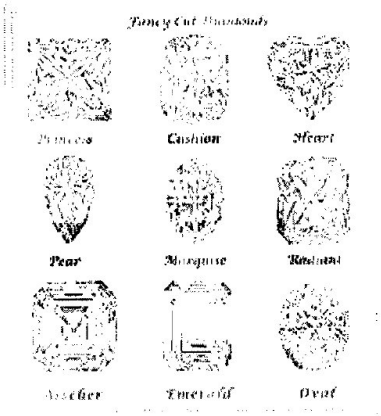
The choice of diamond cut is often decided by the original shape of the rough stone, location of internal flaws or *inclusions*, the preservation of carat weight, and popularity of certain shapes among consumers. The cutter must consider each of these variables before proceeding.

Most gem-quality diamond crystals are octahedra in their rough state (see material properties of diamond). These crystals are usually cut into *round brilliants* because it is possible to cut two such stones out of one octahedron with minimal loss of weight. If the crystal is malformed or twinned, or if inclusions are present at inopportune locations, the diamond is more likely to receive a *fancy cut* (a cut other than a round brilliant). This is especially true in the case of macle, which are flattened twin octahedron crystals. Round brilliants have certain requisite proportions that would result in high weight loss, whereas fancy cuts are typically much more flexible in this regard. Sometimes the cutters compromise and accept lesser proportions and symmetry in order to avoid inclusions or to preserve carat weight, since the per-carat price of diamond is much higher when the stone is over one carat (200 mg).

While the round brilliant cut is considered standard for diamond, with its shape and proportions nearly constant, the choice of fancy cut is influenced heavily by fashion. For example, the step cut *baguette*—which accentuates a diamond's luster, whiteness, and clarity but downplays its fire—was all the rage during the Art Deco period, whereas the mixed *Princess cut* —which accentuates a diamond's fire and brilliance rather than its luster—is currently gaining popularity. The princess cut is also popular among diamond cutters: of all the cuts, it wastes the least of the original crystal. Older diamonds cut before ca. 1900 were cut in "primitive" versions of the modern round brilliant, such as the *rose cut* and *old mine cut* (see History

section). Although there is a market for antique stones, many are recut into modern brilliants to increase their marketability. There is also increasing demand for diamonds to be cut in older styles for the purpose of repairing or reproducing antique jewelry.

The size of a diamond may also be a factor. Very small (< 0.02 carats [4 mg]) diamonds—known as *melée*—are usually given simplified cuts (i.e., with fewer facets). This is because a full-cut brilliant of such small size would appear milky to the human eye, owing to its inability to resolve the stone's dispersive fire. Conversely, very large diamonds are usually given fancy cuts with many extra facets. Conventional round brilliant or fancy cuts do not scale up satisfactorily, so the extra facets are needed to ensure there are no "dead spots". Because large diamonds are less likely to be set in jewelry, their cuts are considered for how well they display the diamonds' properties from a wide range of viewing directions; in the case of more moderate-sized diamonds, the cuts are considered primarily for their face-up appeal.



Fancy cuts

The dominating round brilliant diamonds are not as trendy as they used to be since the market was overcrowded in the last decades of the century[4] Simultaneously, giving a fancy diamond cut as a precious jewel on specific celebrations became a part of tradition. A *Heart cut* diamond has romantic symbolism so it is a common gift for Valentine's Day or wedding anniversary. The *pear-shaped* diamonds look like a drop of water and the shape is suitable for diamond earrings. The most famous shapes are: *Princess, Cushion, Heart, Pear, Marquise, Radiant, Asscher cut, Emerald, Oval.*[5]

Round brilliant

Developed ca. 1900, the *round brilliant* is the most popular cut given to diamond. It is usually the best choice in terms of saleability, insurability (due to its relatively "safe" shape), and desired optics.

Facet count and names

The modern round brilliant (Figure 1 and 2) consists of 58 facets (or 57 if the culet is excluded); 33 on the *crown* (the top half above the middle or *girdle* of the stone) and 25 on the *pavilion* (the lower half below the girdle). The girdle may be frosted, polished smooth, or faceted. In recent decades, most girdles are faceted; many have 32, 64, 80, or 96 facets; these facets are excluded from the total facet count. Likewise, some diamonds may have small extra facets on the crown or pavilion that were created to remove surface imperfections during the diamond cutting process. Depending on their size and location, they may hurt the symmetry of the cut and are therefore considered during cut grading.

Figure 1 assumes that the "thick part of the girdle" is the same thickness at all 16 "thick parts". It does not consider the effects of indexed upper girdle facets.[6] Figure 2 is adapted from the Tolkowsky book,[7] which was originally published in 1919. Since 1919, the lower girdle facets have become longer. As a result, the pavilion main facets have become narrower.

Proportions

While the facet count is standard, the actual proportions—*crown height* and *crown angle*, *pavilion depth* and *pavilion angle*, and *table size*—are not universally agreed upon. There are at least six "ideal cuts" that have been devised over the years, but only three are in common use as a means of benchmarking. Developed by Marcel Tolkowsky in 1919, the *American Standard* (also known as the *American Ideal* and *Tolkowsky Brilliant*) is the benchmark in North America. It was derived from mathematical calculations that considered both brilliance and fire. The benchmark in Germany and other European countries is the *Practical Fine Cut* (German: *Feinschliff der Praxis*, also known as the *Eppler Cut*), introduced in 1939. It was developed in Germany by empirical observations and differs only slightly from the American Standard. Introduced as part of the Scandinavian Diamond Nomenclature (*Scan. D. N.*) in 1969, the *Scandinavian Standard* also differs very little.

Other benchmarks include: the *Ideal Brilliant* (developed in 1929 by Johnson and Roesch), the *Parker Brilliant* (1951), and the *Eulitz Brilliant* (1968)[8] The Ideal and Parker brilliants are disused because their proportions result in (by contemporary standards) an unacceptably low brilliance. The Eulitz cut is the only other mathematically derived benchmark; it is also historically the only benchmark to consider girdle thickness. A more modern benchmark is that set by Accredited Gem Appraisers (AGA), although their standard generally makes a modern ideal cut it has been criticised for being overly strict. A summary of the different benchmarks is given below:

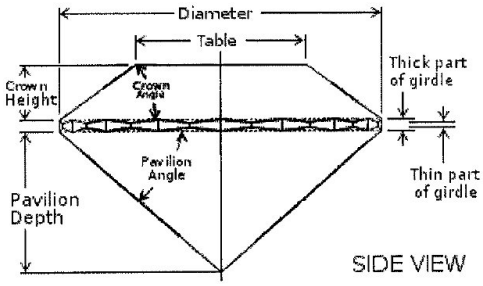


Figure 1: Diamond Proportions

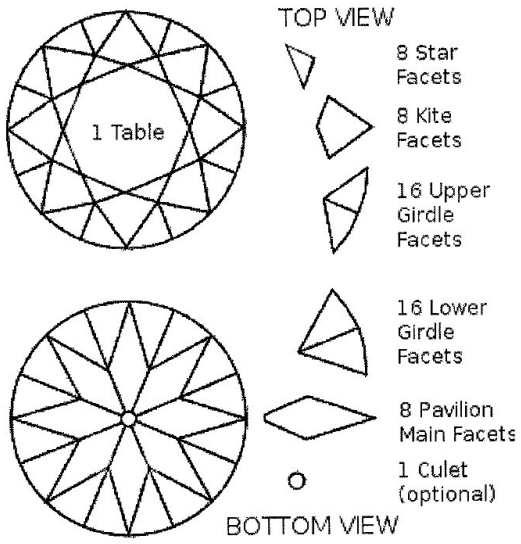


Figure 2: Facet Names

Benchmark	Crown height	Pavilion depth	Table diameter	Girdle thickness	Crown angle	Pavilion angle	Brilliance Grade
American Standard	16.2%	43.1%	53.0%	N/A	34.5°	40.75°	99.5%
Practical Fine Cut	14.4%	43.2%	56.0%	N/A	33.2°	40.8°	99.95%
Scandinavian Standard	14.6%	43.1%	57.5%	N/A	34.5°	40.75°	99.5%
Eulitz Brilliant	14.45%	43.15%	56.5%	1.5%	33.36°	40.48°	100%
Ideal Brilliant	19.2%	40.0%	56.1%	N/A	41.1°	38.7°	98.4%
Parker Brilliant	10.5%	43.4%	55.9%	N/A	25.5°	40.9°	Low
AGA	14.0–16.3%	42.8–43.2%	53–59%	N/A	34.0–34.7°	N/A	100%

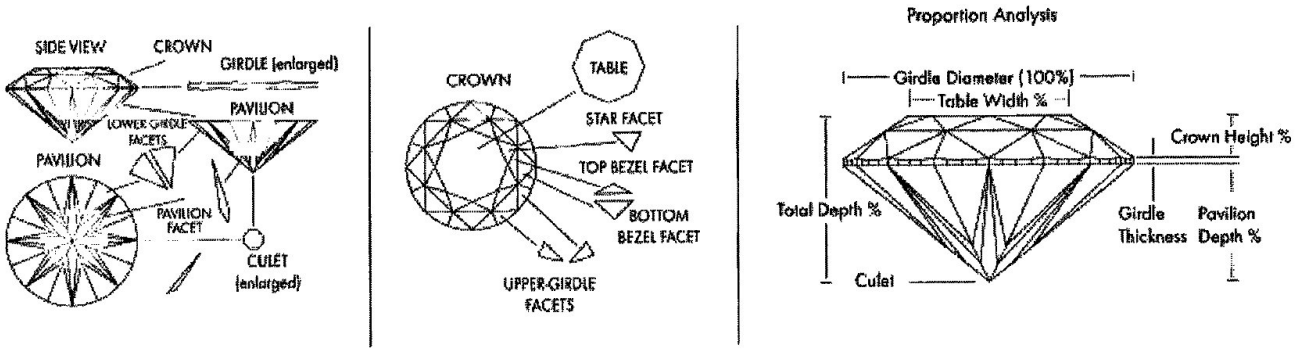
Crown height, pavilion depth, and table diameter are percentages of the total girdle diameter. Because the pavilion angle (and consequently pavilion depth) is so closely tied to total internal reflection, it varies the least between the different standards.

Hearts and arrows phenomenon

The term Hearts and Arrows is used to describe the visual effect achieved in a round brilliant cut diamond with perfect symmetry and angles that exhibit a crisp and complete pattern of Hearts & Arrows. When viewed under a special magnifying viewer, a complete and precise visual pattern of 8 hearts is seen while looking down through the pavilion, and 8 arrows can be seen when viewing the stone in the table up position.

The Passion Cut

Another modification of the round Ideal Cut that maintains the basic proportions of its angles is the Passion Cut.[9] This cut's design can be considered the opposite of the Hearts and Arrows, as it eliminates the arrows in order to capture a different light return from the center of the diamond. The cut splits the eight pavilion mains and increases the specifically-placed total facets from 57 to 81. The cut was designed to enhance brilliance and mask inclusions.



Fancy cuts

Even with modern techniques, the cutting and polishing of a diamond crystal always results in a dramatic loss of weight; rarely is it less than 50%. The round brilliant cut is preferred when the crystal is an octahedron, as often two stones may be cut from one such crystal. Oddly-shaped crystals such as macles are more likely to be cut in a *fancy cut* (that is, a cut other than the round brilliant), which the particular crystal shape lends itself to. The prevalence and choice of a particular fancy cut is also influenced by fashion; generally speaking, these cuts are not held to the same strict standards as Tolkowsky-derived round brilliants. Most fancy cuts can be grouped into four categories: *modified brilliants*, *step cuts*, *mixed cuts*, and *rose cuts*.

Modified brilliants

This is the most populous category of fancy cut, because the standard round brilliant can be effectively modified into a wide range of shapes. Because their facet counts and facet arrangements are the same, modified brilliants also look (in terms of brilliance and fire interplay) the most like round brilliants and are therefore (in general and at present) the most saleable.

Modified brilliants include the *marquise* or *navette* (French for "little boat", because it resembles the hull of a sailboat), *heart*, triangular *trillion* (also *trillian* or *trilliant*), *oval*, and the *pear* or *drop* cuts. These are the most commonly encountered modified brilliants; *Oval-shaped diamonds* have been created and introduced by Lazare Kaplan way back in the 1960s. Usually noted to have 56 facets, the weight of such diamonds is estimated by measuring the length and width of the stone. A ratio of 1.33 to 1.66 provides a good traditional range of oval-shaped diamonds. *Pear-shaped diamonds* are also known as the teardrop shape owing to their resemblance and is considered as a hybrid between the marquise cut and the round brilliant diamond. The stone has one end rounded while the other end is pointed. Pear shape diamonds can opt between varying length and width ratios for the ideal looking pear-shaped diamond. Length to width ratios between 1.45 and 1.75 are most common.

Modern cutting technology has allowed the development of increasingly complex and hitherto unthinkable shapes, such as stars and butterflies. Their proportions are mostly a matter of personal preference; however, due to their sharp terminations and diamond's relative fragility, these cuts are more vulnerable to accidental breakage and may therefore be more difficult to insure.

There are several older modified brilliant cuts of uncertain age that, while no longer widely used, are notable for history's sake. They are all round in outline and modify the standard round brilliant by adding facets and changing symmetry, either by dividing the standard facets or by placing new ones in different arrangements. These cuts include: the *King* and *Magna* cut, both developed by New York City firms, with the former possessing 86 facets and 12-fold symmetry and the latter with 102 facets and 10-fold symmetry; the *High-Light* cut, developed by Belgian cutter M. Westreich, with 16 additional facets

divided equally between the crown and pavilion; and the *Princess 144*, introduced in the 1960s, with 144 facets and 8-fold symmetry. Not to be confused with the mixed *Princess* cut, the Princess 144 cut makes for a lively stone with good scintillation; the extra facets are cut under the girdle rather than subdivided. The extra care required for these sub-girdle facets benefits the finished stone by mitigating girdle irregularity and bearding (hairline fracturing). Today, with the increased understanding of light dynamics and diamond cutting, many companies have developed new, modified round brilliant cut diamonds. If designed correctly, these extra facets of the modified round brilliant could benefit the overall beauty of a diamond, such as in 91 facet diamonds.

The Dutch firm Gassan has patented a new cut with 121 facets.

Step cuts

Stones whose outlines are either square or rectangular and whose facets are rectilinear and arranged parallel to the girdle are known as *step-* or *trap-cut* stones. These stones often have their corners truncated, creating an *emerald cut* (after its most common application to emerald gemstones) with an octagonal outline. This is done because sharp corners are points of weakness where a diamond may cleave or fracture. Instead of a culet, step-cut stones have a *keel* running the length of the pavilion terminus. Like other fancy shaped diamonds, emerald cut diamonds can come in a variety of length to width ratios. The most popular and classic outline of emerald cut diamonds are close a value of 1.5.

Because both the pavilion and crown are comparatively shallow, step cut stones are generally not as bright and never as fiery as brilliant cut stones, but rather accentuate a diamond's clarity (as even the slightest flaw would be highly visible), whiteness, and lustre (and therefore good polish).

Due to the current vogue for brilliant and brilliant-like cuts, step cut diamonds may suffer somewhat in value; stones that are deep enough may be re-cut into more popular shapes. However, the step cut's rectilinear form was very popular in the Art Deco period. Antique jewelry of the period features step-cut stones prominently, and there is a market in producing new step-cut stones to repair antique jewelry or to reproduce it. The slender, rectangular *baguette* (from the French, resembling a loaf of bread) was and is the most common form of the step cut: today, it is most often used as an accent stone to flank a ring's larger central (and usually brilliant-cut) stone.

Square step cuts whose corners are not truncated are known as *carré*; they are also characteristic of antique jewelry. They may resemble the square-shaped *Princess cut* in passing, but a carré's lack of fire and simpler facets are distinctive. They may or may not have a culet. In Western jewelry dating to before the advent of brilliant-type cuts, very shallow step-cut stones were used as lustrous covers for miniature paintings: these are known in the antique trade as *portrait stones*. Characteristic of Indian jewelry are *lasque* diamonds, which may be the earliest form of step cut. They are flat stones with large tables and asymmetric outlines.

Other forms of the step cut include *triangle* (or *Trilliant cut*), *kite*, *lozenge*, *trapeze* (or *trapezoid*), and *obus* shapes.

Mixed cuts

Mixed cuts share aspects of both (modified) brilliant and step cuts: they are meant to combine the weight preservation and dimensions of step cuts with the optical effects of brilliants. Typically the crown is brilliant cut and the pavilion step-cut. Mixed cuts are all relatively new, with the oldest dating back to the 1960s. They have been extremely successful commercially and continue to gain popularity, loosening the foothold of the *de facto* standard round brilliant.

Among the first mixed cuts was the *Barion cut*, introduced in 1971. Invented by South African diamond cutter Basil Watermeyer and named after himself and his wife Marion, the basic Barion cut is an octagonal square or rectangle, with a polished and faceted girdle. The total facet count is 62 (excluding the culet): 25 on the crown; 29 on the pavilion; and 8 on the girdle. This cut can be easily identified by the characteristic central cross pattern (as seen through the table) created by the pavilion facets, as well as by the crescent-shaped facets on the pavilion. A similar cut is the *Radiant cut*: It differs in having a total of 70 facets. Both it and the Barion cut exist in a large number of modified forms, with slightly different facet arrangements and combinations.

The most successful mixed cut is the *Princess cut*, first introduced in 1960 by A. Nagy of London. It was originally intended for flat rough (macles), but has since become popular enough that some gemological labs, such as that of the American Gem Society (AGS), have developed Princess cut grading standards with stringency akin to standards applied to round brilliants. Its higher fire and brilliance compared to other mixed cuts is one reason for the Princess cut's popularity, but more importantly is the fact that, of all the diamond cuts, it wastes the least of the original crystal. Another beautiful cut is the Flanders cut, a modified square with cut corners, brilliant facets and is currently being cut by cutters at Russian Star.

Rose and mogul cuts

Various forms of the *rose cut* have been in use since the mid-16th century. Like the step cuts, they were derived from older types of cuts. The basic rose cut has a flat base - that is, it lacks a pavilion - and has a crown composed of triangular facets (usually 12 or 24) rising to form a point (there is no table facet) in an arrangement with sixfold rotational symmetry. The so-called *double rose cut* is a variation that adds six kite facets at the margin of the base. The classic rose cut is circular in outline; non-circular variations on the rose cut include the *briolette* (oval), *Antwerp rose* (hexagonal), and *double Dutch rose* (resembling two rose cuts united back-to-back). Rose-cut diamonds are seldom seen nowadays, except in antique jewelry. Like the older style brilliants and step cuts, there is a growing demand for the purpose of repairing or reproducing antique pieces.

Related to the rose cut, and of similar antiquity, is the *mogul cut*, named after the Great Mogul diamond that was the most famous example of its type. Like the classic rose cut, the mogul cut also lacks a pavilion and a table facet, and its crown is also composed of triangular facets rising to form a point. But in mogul-cut diamonds the rotational symmetry is normally fourfold or eightfold, and the eight apical facets are girded by two or more additional rings of facets. The modern mogul cut evolved from earlier faceting techniques originally used to disguise internal flaws in very large stones;[1] in the modern day this cut has also become rare, but still finds occasional use where it is less important to showcase a stone's internal clarity, as with the black and internally opaque Spirit of de Grisogono Diamond.

Cut grading

The "Cut" of the "4-Cs" is the most difficult part for a consumer to judge when selecting a good diamond. This is because some certificates will not show the important measurements influencing cut (such as the pavilion angle and crown angle) and will not provide a subjective ranking of how good the cut was. The other 3-Cs can be ranked simply by the rating in each category. It requires a trained eye to judge the quality of a diamond cut, and the task is complicated by the fact that different standards are used in different countries (see proportions of the round brilliant).

Other proportions also affect the look of the diamond:

- The table ratio is very significant.
- The length of the lower girdle facets affects whether Hearts and arrows can be seen in the stone, under certain viewers.
    - Most round brilliant diamonds have roughly the same girdle thickness at all 16 "thick parts".
    - So-called "cheated" girdles have thicker girdles where the main facets touch the girdle than where adjacent upper girdle facets touch the girdle. These stones weigh more (for a given diameter, average girdle thickness, crown angle, pavilion angle, and table ratio), and have worse optical performance (their upper girdle facets appear dark in some lighting conditions).
    - So-called "painted" girdles have thinner girdles where the main facets touch the girdle than where adjacent upper girdle facets touch the girdle. These stones have less light leakage at the edge of the stone (for a given crown angle, pavilion angle, and table ratio), but does have a negative effect on the overall beauty of a diamond.[10]

Several groups have developed diamond cut grading standards. They all disagree somewhat on which proportions make the best cut. There are certain proportions that are considered best by two or more groups however.

- The AGA standards may be the strictest at the upper range of quality. David Atlas developed the AGA standards in the 1990s for all standard diamond shapes.[11]
- The HCA changed several times between 2001 and 2004. As of 2004, an HCA score below two represented an excellent cut. The HCA distinguishes between brilliant, Tolkowsky, and fiery cuts.

- The AGS standards changed in 2005 to better match Tolkowsky's model and Octonus' ray tracing results. The 2005 AGS standards penalize stones with "cheated" girdles. They grade from 0 to 10.
- The GIA began grading cut on every grading report for round brilliant beginning January 1, 2006 based on their comprehensive study of 20,000 proportions with 70,000 observations of 2,000 diamonds. The single descriptive words are as follows: Excellent, Very Good, Good, Fair, and Poor.

The distance from the viewer's eye to the diamond is important. The 2005 AGS cut standards are based on a distance of 25 centimeters (about 10 inches). The 2004 HCA cut standards are based on a distance of 40 centimeters (about 16 inches).

- Various labs around the world are using ImaGem's VeriGem device to measure Light Behavior. DGLA in the USA and Mumbai, India, PGGL in the USA and EGL-USA are both offering versions of this grading in 2008. DGLA has graded thousands of diamonds with this promising direct assessment technology.
- "Brilliancescope" by Gemex is another assessment light behavior technology in use by many US and now foreign retailers and diamond cutters.

Effect of cut on other diamond characteristics

During the diamond cutting process, the diamond cutter wants to get the heaviest diamond out of a rough stone. However, this can come at the cost of lowering cut grade. If a diamond is too deep, the carat weight will increase but result in a loss of brilliance due to light leakage. Diamond cutters have to contend with working a stone to its best finished form with the least amount of waste. This strategy depends on the quality of the stone and its final proportions. If two diamonds of equal weight are inspected there can be a noticeable difference in size when viewed from above; arguably the most important view. A well cut 0.90ct diamond for example could have the same width as a poorly cut 1.00ct diamond. This phenomenon is known as spread.

See also

- Cut (gems)
- List of gemstone cuts
- Brilliant (diamond cut)
- Princess cut
- Diamond cutting
- Diamond clarity
- Diamond color
- Diamond enhancement
- Diamond simulant
- Synthetic diamond
- Material properties of diamond
- Famous diamonds

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Guide to Diamond Shapes

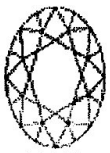
When thinking of diamonds, many will immediately think of the classic round diamond shape. It's no doubt that the round brilliant cut is the most popular shape but if you're looking for something different, there are plenty of other shapes available. A diamond's shape refers to its physical form and each diamond shape is very different, possessing unique characteristics. Even though shape is not a part of the 4 C's of Diamonds, this element will have an impact on the appearance of your diamond. Since each diamond shape is cut to different specifications, they reflect light differently, giving each shape a unique fire and brilliance.

Popular Diamond Shapes

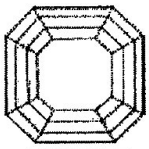
Choosing the right diamond can be tricky for many people. It is our hope that the information below will provide you with a basic understanding so that you can confidently move through the process. At Wixon Jewelers, we strive to offer our clients the highest quality diamonds and carry the largest selection of loose diamonds in Minnesota. Our collection of diamond jewelry features many different options for the shape of the diamond, from traditional round brilliant cut or oval diamonds to fancy shaped diamonds like pear and heart shapes. Below you will find a comprehensive list of the most popular diamond shapes and their characteristics.

ROUND PRINCESS CUSHION MARQUISE EMERALD RADIANT

PEAR

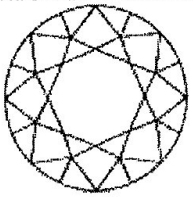


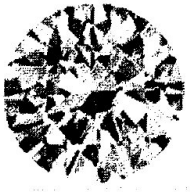
OVAL



ASSCHER

ROUND BRILLIANT CUT

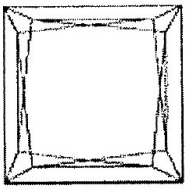


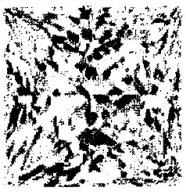


The round brilliant cut diamond is the most popular shape of diamond. For hundreds of years, diamond cutters have been working with this cut to maximize its brilliance and fire. While this cut offers great flexibility within the four C's, you will want to select higher quality grades to bring out the most brilliance within a round diamond.

» *Browse: Round Diamond & Gemstone Jewelry*

PRINCESS CUT





Princess cut diamonds are exceptionally brilliant because of the way they are cut and are available in both square and rectangular shapes. The color that is emitted from princess cut diamonds is very unique. While the color of other diamond is displayed mainly in the center, the princess cut diamonds show distinct color in each of the corners as well.

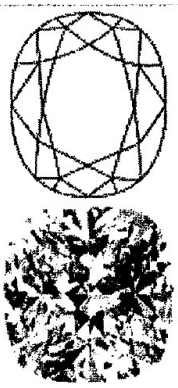
» *Browse: Princess Cut Diamond Jewelry*

MARQUISE CUT

A marquise cut diamond is a perfect shape for maximizing carat weight by emphasizing the size of the diamond. Its unique shape creates the effect of longer, more slender hands and fingers. The outline of a diamond is determined by its length to width ratio, which also provides an image of the shape and look of the diamond.

» *Browse: Marquise Cut Diamond & Gemstone Jewelry*

CUSHION CUT

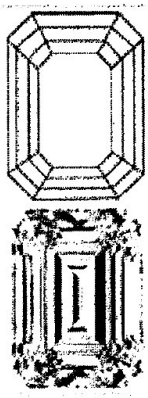


Sometimes called a pillow-cut diamond, the cushion cut is a timeless cut that has earned its name for its pillow shape. Cushion cut diamonds tend to have impeccable brilliance and clarity in their appearance which can be attributed to their rounded corners and larger facets. These diamonds are available in square and rectangular shapes.

» *Browse: Cushion Cut Diamond & Gemstone Jewelry*

» *Learn more: Cushion Cut Diamonds*

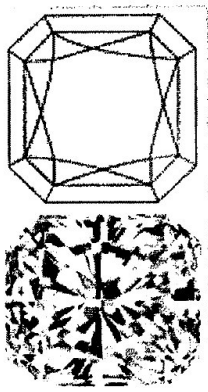
EMERALD CUT



Emerald cut diamonds have a unique optical appearance because of the rectangular facets step-cut into the diamond's pavilion. This cut showcases the diamond's original clarity beautifully because of its large rectangular table which will also make inclusions and color more apparent.

» *Browse: Emerald Cut Jewelry*

RADIANT CUT



Perfect for those looking for a unique style, radiant cut diamonds feature uniquely trimmed corners which combines the lines of an emerald cut with the brilliance of a round diamond. The sparkle of this diamond cut looks beautiful when combined with a variety of other diamond cuts.

» *Browse: Radiant Cut Diamond Jewelry*

PEAR SHAPED

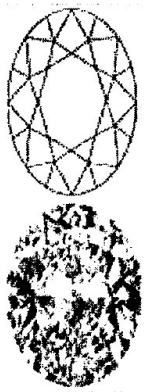
Combining round and marquise cuts, the teardrop style of pear shaped diamonds is exceptional. The slender pear shape will give fingers and hands a slimmer appearance while creating a soft and delicate look. Pear shaped diamonds are cut to produce maximum brilliance, so it's important to look for excellent symmetry.

» *Browse: Pear Shaped Jewelry*

OVAL CUT

Oval cut diamonds have a classic appearance with a modern twist! It is a popular cut in all types of jewelry, especially in engagement rings, making it easy to match with other jewelry. It has an incredible brilliance, similar to the round brilliant cut, but also has the advantage of accentuating long, slender finders.

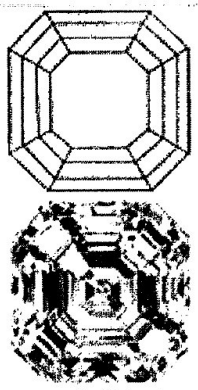
» *Browse: Oval Diamond & Gemstone Jewelry*



ASSCHER CUT

Asscher cut diamonds are often mistaken for an emerald cut because of its similar cut style; however an asscher is square rather than rectangular. Created in the early 1920s, the asscher cut has recently resurged in popularity, especially amongst celebrities.

» *Browse: Asscher Cut Engagement Rings*



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