

A 2006 REVIEW OF THE ICSL COLOURED STONES GRADING SYSTEM

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INTRODUCTION

ICSL is the acronym for 'Independent Coloured Stones Laboratory'.

The gem trade in South Africa has been the recipient of many ICSL coloured stones grading certificates/reports over a very long period of time. In recent years this demand has increased considerably. It is therefore appropriate that a review be given of this system so that a wider spectrum of users are better informed about it.

SHORT HISTORY

The ICSL system was introduced to the trade in 1982 by the Independent Coloured Stones Laboratory. It has been a successful and reliable medium for the quality grading of coloured gemstones for nearly a quarter century and has successfully withstood the test of time.

It was originally published in 1985 by the Accredited Gemologists Association in the USA. Only slight rationalization has taken place since then because of the system's proven stability. At that time it was openly presented to a relatively large number of professional gemmologists and their associates in the USA. The report-back was very good and there was no known criticism made. This was considered very significant because it was aired in the presence of one's peers. A certificate, still in possession by ICSL, was awarded for this.

The ICSL system was designed to give unbiased professional opinions by qualified gemmologists of the quality of cut gemstones after strictly taking into account the carefully constructed parameters essentially used in the process. It also gives realistic reports in *plain English* without stating misleading nomenclature that is so often seen these days.

Numerals (100-0 based) are coincidentally used. The reasons are two-fold: for computer data base applications, and to give an overall comparative perspective (overview) of grades. A carefully designed scale of deductions also allows a stable final quality grade to be assessed – without this it cannot be systematically done.

The ICSL system was the FIRST laboratory internationally to give FINAL GRADES, which were in turn based on the analysis of all the other component parameters. The nomenclature 'FINAL GRADE' was introduced by ICSL in 1982. It is believed that this important parameter, or any other of equal significance, had not been adopted by any other laboratory worldwide up to then. Only after the ICSL Coloured Stones Grading System was first published in 1985 in the USA, did the first laboratory, in New York, follow suit. However, this was under the guise of different nomenclature.

The principal users of this grading system, other than ICSL itself, and in slightly variant but acceptable formats, are the Coloured Stones Section of the Jewellery Council of South Africa Diamond Certification Laboratory (Johannesburg), Natal Gemmological Laboratory (Durban) & Arthur Thomas Gems (Sandton). These four assessing laboratories handle a substantial volume of work in this context. There are other approved additional practical users of it as well, the reports of which also fall under their respective brand names – this is acceptable to the copyright owner, but are still strictly subject to adherence of the ICSL terms of reference, which are well publicized.

USAGE OF ICSL GRADING SYSTEM REPORTS

Some very few traders that use the ICSL based reports do not want ANY derogatory remarks entered on their documents. This could normally be considered as misleading and does not say much in favour of this practice. However, the ICSL system is so designed as to allow this tolerance to be adopted, **BUT ONLY UP TO A POINT**. *It is important to know that whether this is done or not, the FINAL (quality) grade is ALWAYS, without exception, reduced as a penalty for whatever is wrong with the stone.* This is adequately covered in the terms of reference of the system. The recipient still receives the correct grade. Therefore, this descriptive omission, on a limited basis, is allowable only because it is, by default, taken fully into account in the report in any case. Properly used, the system is scrupulously fair to all concerned.

A QUICK WAY TO INTERPRET THE SIGNIFICANCE OF THE FINAL QUALITY GRADE:

One has to look only at the difference, if it exists, between the Colour Grade and the Final (quality) Grade. If there is a downward shift numerically between them, for example ICSL 80 (Very Good) to ICSL 70 (Good), this will immediately have the effect of informing the reader that the stone has been down-graded because of a number of faults that exist. If no faults exist to within the (practical) defined limits, the final grade will not change from the colour grade. In the example given above this would remain as ICSL 80 (Very Good). A stone's colour grade (and this can vary with the species) dictates its maximum possible final grade. The only exceptions are phenomenon-type stones (such as star ruby or sapphire, to name only two). It is important to use suitable colour comparison stones or other compatible means for assessing the colour grade, provided such are used correctly and consistently.

SPECIAL NOTE:

THE ICSL SYSTEM FULL CERTIFICATE OR 'MINI' CONSULTATION REPORT IS NOT A GLAMOURIZED 'SELLING DOCUMENT'. THERE ARE NO FANCY NAMES TO OVER-INSINUATE GRADES. THEREFORE IT CAN BE CONSIDERED NEUTRAL IN THIS CONTEXT TO BOTH BUYERS AND SELLERS ALIKE. ONLY THOSE WHO MARKET OVER-ENHANCED GRADED STONES WILL BE UNHAPPY WITH THIS SITUATION.

REGARDING COPYRIGHT

In spite of the copyright nature of this grading system, the Independent Coloured Stones Laboratory confirms that there is no legal problem to be encountered by those seriously using and thus recognizing the ICSL system, subject to only two conditions:

1. The grading is done **CORRECTLY** within the **FULL** terms of reference of the ICSL system.
2. The relevant documents always acknowledge use of the ICSL system. (Simple endorsement: 'Based on ICSL grading parameters').

Comments: The usage of the ICSL system is encouraged, because it has an established history, is well conceived and sets a good standard for the quality assessment of cut gems. It also protects the interest of the trade and buying public alike. The terms of reference are openly published for public scrutiny.

PART ADAPTION OF THE ICSL SYSTEM

There are additionally other report formats that appear to base their existence on only *parts* of the ICSL system - these appear to be of an unethical advantage in terms of the modified parameters used in such grading procedures, because only the enhanced-quality 'selling parameters' are incorporated at the expense of others of a more derogatory nature to the stone in question. The chosen parameters, sometimes further incorrectly modified by the users and even taken out of context, can result in better-than-usual quality grades being given - which really do not apply. Unfortunately this type of incorrect grading is weighted in favour of over-enhanced quality grades being given. In anycase, such incomplete 'systems' are considered to be a form of plagiarism by the writer when the **FULL** ICSL system is not adhered to. The terms of reference are defined for very valid reasons and should not be modified in order to make a stone easier to sell, or even to simply introduce another brand name just for the sake of business ego.

QUESTIONABLE GRADING SYSTEMS

Notwithstanding what is written above, numerous so-called grading systems that have made an appearance in South Africa in comparatively recent times use nomenclature which indicates over-enhanced qualities at almost all significant pro-rata levels on the recognized quality scale. Looking at the prevalence of such, one could even wonder if there are any poorer quality stones left in the market place! Tanzanite in particular is subject to this type of over representation. This type of over-grading is a worrying trend and should not be encouraged.

The term *so-called* used in the above paragraph is because proper terms of reference cannot be found for such 'systems'. Purely descriptive names relating to grades are all very well, but supporting parameters should be properly defined if they are to relate to a meaningful system. Definitions are very important in this context, in that they afford reasonable stability on an on-going basis.

Worst of all are what could be termed quasi-systems. These show parameters that really do not make much sense, other than to glorify a stone to an absurd degree of high quality. As an actual example, one such parameter relates to clarity grading (of tanzanite in this case), which goes beyond the state of 'Flawless' to become described as 'Flawless +'. How flawless can a stone get? There are also other similar type overdone grades that parallel this – not only in that particular grading process, but others as well, where highly suggestive alphabetical letters are very misleading to the un-initiated buyer in the way they are presented in the reports.

This leads to an opinion that this sort of thing constitutes an enhanced 'selling' certificate or report, whereby a prospective customer is lulled into a false sense of having bought a stone of unusually good quality, when in fact it is well below that status. Such misrepresentation, in the opinion of this writer, does a disservice to both the customer as well as the image of the gem trade, no matter where that happens to be. It is this type of anomalous service that stretches credibility to the limit in the case of meaningful documentation in this context.

AN INTEGRATED COLOURED STONES PRICE GUIDE

This is mentioned here only because it is associated with the grading system. ICSL Coloured Stone Price Guides are published in January annually (since 1984) and covers a reasonably wide number of gem species and varieties. It is in each of these that the ICSL system is printed in detail. The price guide parameters and the system are fully integrated. Thus once an ICSL system-based report is *correctly* issued, there is an associated practical means of obtaining a reasonable guide to the stone's estimated value at most practical levels in the gem trade marketing scenario.

THE ICSL GRADING PARAMETERS

These are backed by 35 years of relevant knowledge, practical experience and proven methods. The original full certificate, which is seldom called for now because of its size, detail and cost to produce (being time intensive), has almost been phased out. (This is separate from other designated gemological reports that are called for on a continuous basis).

The popular so-called 'mini' report is a more practical document to work with because of its convenient size. It is by far the main format that is called for, at least in South Africa, and contains all the essential information required. Therefore the entries on this smaller document will be explained hereunder, as opposed to the complete set of parameters built into the original and physically much larger certificate. In essence this abridged mini-report known as a 'Coloured Stone Consultation Report' is generally issued under the brand names of the particular laboratories or gemmologists that use the ICSL system.

It is important to bear in mind that the system is presented in HALF grade gradations if it is used properly. This can be considered to have a stricter tolerance than normal.

THE GRADING PARAMETERS ARE DETAILED AS FOLLOWS. THESE ARE WHAT ARE ESSENTIALLY SHOWN ON A 'MINI' CONSULTATION REPORT.

Slight variations may occur from one laboratory to another, but they are considered to be relatively minor.

See the shaded horizontal areas of the overview shown below. These principally refer to a 'mini' consultation report, as opposed to the *full* certificate when it is issued.

Some shaded parameters in this schedule are in fact a product of some unshaded ones. For example transparency, proportion, finish and (to within limits) symmetry, will have an effect on brilliancy. Similarly, the grade of colour is a product of vividness (or saturation), as well as tone and a stone's degree of transparency. This can even be further modified by the amount of brilliancy that is present or not in a stone. A heavily included stone can also modify colour appearance as well as brilliancy. It will be obvious to the reader that there is a lot of linking between the interactions of the phenomena listed in these grading parameters, the latter of which will now be independently discussed.

Overall Interpretation of ICSL Grade Scales (Established 1982)											
	100	90	80	70	60	50	40	30	20	10	0
Final	Excellent		Good		Medium		Fair		Poor		
Colour	Excellent		Good		Medium		Fair		Poor		
Vividness (Saturation)	Very High		High		Moderate		Low				
Tone	Black		Dark	Medium Dark		Medium			Light		Colour-less
* Transparency	Excellent		Good	Fair	Poor	Semi-transparent			to		Opaque
Brilliancy		Excellent		Good			Fair		Poor		
* Clarity	Internal			Difficult to see		Minor		Fairly easily seen		Very obvious	
	External										
Proportion	Very good		Good				Fair			Poor	
Symmetry	Very good		Good			Fair		Poor			
Finish	Very good		Good			Fair		Poor			

* Some scale for internal and external blemishes

The split grades in the above schedule are denoted by the vertical lines between the numeric grades shown at the top. In explanation: Good (ICSL 70) & Good+ (ICSL 75) are represented by 70 in the first case and the vertical line between 70 & 80 in the second case, being the upper good grade.

The Final, Colour, Clarity & Brilliancy grades are the most important single parameters of a coloured stone and can be seen exactly where their graded positions relatively fit into the overall comparison scales shown above.

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The first procedure is to assess the colour grade. This is essentially based on an experience of dealing with coloured stones. What is required as a pre-requisite, are visual comparisons, whether these be sets of comparison stones for a given species or variety, or other equitable visual comparisons. These can be in various forms that enable the assessor to give reasonably accurate depictions of a species colour grades. The important object here is to be able to reliably reproduce a colour grade to within specified tolerances. COLOUR IN ITSELF IS NORMALLY THE MOST IMPORTANT PARAMETER, OTHER THAN IN SOME PHENOMENON-RELATED STONES.

The final (overall) grade is arrived at through a well proven system of half grade deductions from the colour grade. (The numeral 5 is equivalent to a half grade). This is why it is important to get the colour grade assessment right in the first place. As already stated elsewhere in this article, a colour grade is the MAXIMUM quality grade that a stone can attain, assuming there are no other parameters that detract from this – within the terms of reference of this system.

DEDUCTIONS: HOW THEY ARE APPLIED IN PRINCIPLE

Clarity & brilliancy are essentially the most important initial deductions made when warranted. Other parameters are as well, when they noticeably detract from the stone's appearance.

Other parameter deductions are made individually when they have a detrimental effect on the stone. Some may not warrant a deduction on their own, but in *combination* they will. Some deductions should not be unnecessarily compounded. However, a very dark toned stone can be penalized for both its dark tone *and* lack of brilliancy, because in such cases the colour grade is also negatively affected and will be lower – thus being what could be termed a de facto penalty anyway). However, do not deduct for BOTH low brilliancy AND additionally a window effect ('fisheye') under the table facet, because the window in itself will reduce brilliancy.

DEDUCTIONS ARE NEVERTHELESS MANDATORY FOR WINDOW EFFECTS SEEN UNDER THE TABLE FACET. (This is commonly due to bad cutting to retain weight in some cases; or conversely and paradoxically, cutting over-spread stones from shallow rough material in order to give the illusion of larger sizes weight-wise, than in reality – the stone would weigh less than a properly cut one of similar sized physical appearance).

Most really experienced assessors of quality automatically take these parameters into account when assessing gems, but the tables given here that follow help one to, if necessary, retain a methodical report of a gem's vital statistics that may be of use in the event of potential disputes arising at a later date.

ADDITIONAL MISCELLANEOUS FINAL ADJUSTMENTS

There are further deductions which apply if necessary. (See schedule on the last page).

COLOUR

The colour grade depends on hue vividness (i.e. saturation: purity and intensity). Mostly speaking, the best colours have a tonal range of 80 to 50 (i.e. respectively : the darkest end of the medium-dark range being 80, and the lighter medium toned end being 50 in the scale below). It should be obvious that if a stone is too dark it will mask the colour's vividness (saturation) to a greater degree until the stone appears more black (e.g. very dark blue Australian sapphires). This will then decrease the colour grade. Also, and to an even greater extent, the lighter the tone becomes - right down to colourless, where there is obviously not enough actual hue present to make the stone desirable (i.e. it's 'wishy washy') - the lower the colour grade will be as well. Both ends are non-desirable extremes. **Take care, though: some gems – at best – do not characteristically reach the medium-dark tonal grades.**

STONE:

A neutral gray scale showing these differences in principle is as follows. The numerical scale relates to the equivalent ICSSL system as applied.

THE MEDIUM-DARK BAND IS REPRESENTED BY 75,70,65.



DEFINITIONS OF COLOUR GRADE

Grade		
100	-	Exceptional
95-90	-	Excellent
85-80	-	Very good+ to very good
75-70	-	Good+ to good
65-60	-	Moderately good+ to moderately good
55-50	-	Medium+ to medium
45-40	-	(Fair-to-medium+) to (fair-to-medium)
35-30	-	Fair+ to fair
25-5	-	25-20 Fair-to-poor; 15-5 Poor to V.poor.

CLARITY DEFINITIONS

As can be seen by the scale given below, there is a highly practical way of grading clarity: **Your attention is directed to the warning below marked with an asterisk.***

This is the degree to which a gem is internally included and/or flawed.

External imperfections are graded using the same scale as well.

The terms of reference are as follows:

The first three grades are eye-clean. They are further subdivided under 10x magnification.

- 100.** Free of imperfections under 10x magnification.
- 90. Very slight imperfections under 10x magnification.
- 80.** Slight imperfections under 10x magnification.

The following grades show imperfections **increasingly visible to the unaided eye: Do not do this parrot fashion**

***TAKE CARE - DARK COLOUR TONES CAN MASK INCLUSIONS.**

- 70. Imperfections seen with difficulty.
- 60. Imperfections not easily detected.
- 50. Minor imperfections detectable, but do not detract from overall appearance.
- 40. Imperfections more obvious and slightly affects appearance.
- 30. Imperfections easily seen and detract from appearance.
- 20. Imperfections obviously affect appearance.
- 10. Imperfections seriously affect appearance and/or cleavages which present a hazard to the stone.
- 0. Unacceptably 'included' in respect of faceted gems.

COMPARISON OF THE SCALE TO A MORE CONVENTIONAL DESCRIPTION IS AS FOLLOWS:

<u>ICSL</u>	<u>GENERAL DESCRIPTION</u>
100	IF (internally free of inclusions under 10X).
90 - 80	Eye-Clean (inclusions seen under 10X).
70 - 60	Very lightly included
50	Lightly included
40 - 30	Moderately included
20 - 10	Heavily included
0	Excessively included

CLARITY DEDUCTIONS

ALL DEDUCTIONS ARE IN BLOCKS OF 5 (i.e. HALF-GRADE DIFFERENCES).

(FIX THE COLOUR, BRILLIANCY & CLARITY GRADES FIRST) Any other adulterations will further reduce the grade and result in the Final (quality) Grade.

Deductions depend on species:

GRADE	INTERNAL DEDUCTIONS	ALL SPECIES EXT. DEDUCT
100-70	All 0	0
60	Tourmaline: red, pink, yellow, blue. 0-5	0 - 5
	Demantoid, Emerald, Spessartine (Mandarin garnet). 0	
	Sapphire, Tsavorite, Tanzanite, Spinel and Chrome Tourmaline. 0-5	
	Ruby 0	
	Other 0-5	
50	Tourmaline: red, pink, yellow, blue. 5	5
	Demantoid, Emerald, Spessartine (Mandarin garnet). 0-5	
	Sapphire, Tsavorite, Tanzanite, Spinel and Chrome Tourmaline. 5-10	
	Ruby 0-5	
	Other 5-10	
40	Tourmaline: red, pink, yellow, blue. 5-15	10
	Demantoid, Emerald, Spessartine (Mandarin garnet) 5-15	
	Sapphire, Tsavorite, Tanzanite, Spinel and Chrome Tourmaline. 15-25	
	Ruby 10-20	
	Other 15-30	
30	Tourmaline: red, pink, yellow, blue. 15-25	15
	Demantoid, Emerald, Spessartine (Mandarin garnet). 15-25	
	Sapphire, Tsavorite, Tanzanite, Spinel and Chrome Tourmaline. 25-35	
	Ruby 20-30	
	Other 30-40	
20	Tourmaline: red, pink, yellow, blue. 25-35	20 - 25
	Demantoid, Emerald, Spessartine (Mandarin garnet). 25-35	
	Sapphire, Tsavorite, Tanzanite, Spinel and Chrome Tourmaline. 35-40	
	Ruby 30-40	
	Other 40-50	
10	All Species: Fixes Grade: 25-5	Based on est. recut
0	All Species: Fixes Grade: 5*-0	Based on est. recut but max*

NOTE 1. Where there is a range of deductions, the deduction itself depends on how close the actual clarity is to the grade above or below. Noticeable external blemishes are assessed under the external clarity grade. Minor ones under 'finish'.

BRILLIANCY

This is an important aspect of faceted stones, but to within practical reason.

1. 100% (which is theoretical) down to 55 brilliancy does not affect the final grade, except when the colour grade is 100 or 95. If, in reality, the brilliancy is high, this may (in darker toned stones) result in a higher colour grade being observed.
2. Very loosely speaking the deductions are on a reducing or sliding scale basis and are related to the colour grade - on the basis that this becomes increasingly more important as the stone's colour becomes increasingly better. For example, a high degree of brilliancy is not going to make much difference to a low colour grade (say if the stone is very pale - at least in so far as the final grade is concerned).
3. The brilliancy (areas of light being reflected back from the pavilion via the crown to the observer's eyes) is basically:

ASSESSED AS FOLLOWS:

Progressively ask yourself:

1. Are the general areas (over the cross-section of the stone in top profile) over 50% or under 50%?
2. If either side, are they between 50 & 75, or between 50 & 25%?
3. Are they over 75% or under 25%?

At some points you will arrive at a situation where the result(s) are probably in between these main fixing points, i.e. under 25%, 25-50%, 50-75%, above 75%. You will have to decide just where in between the percentage is.

Brilliancy can be modified by poor cuts, dark tones and/or heavy inclusions.

BRILLIANCY GRADES

<u>PERCENTAGE</u>	<u>GRADE</u>
100	Theoretical
85 and above	Excellent
80-75	Very good
70-65	Good
60-55	Moderately good
50-35	Fair
Below 35	Poor

Notes:

- (i) Brilliancy and scintillation are related.
- (ii) Scintillation is merely brilliancy broken up into numerous small reflections (also referred to by the layman as 'sparkle')
- (iii) **Caution:** A scintillating stone can erroneously appear to have more brilliancy than, say, one that is emerald-cut of equally good proportions.

BRILLIANCY DEDUCTIONS

COLOUR GRADE	BRILLIANCY & RANGE (Note: 100% Brilliancy is Theoretical)	DEDUCTION FOR THE RANGE
100 - 95	95 - 75	Nil
	70 - 55	5
	50 - 45	10
	40 - 10	15 to 40
90 - 85	95 - 55	Nil
	50 - 25	5 - 15
	20 - 15	20 - 25
	10 - 5	30 - 35
80 - 75	95 - 55	Nil
	50 - 15	5 - 20
	10 - 5	25 - 30
70 - 65	95 - 55	Nil
	50 - 35	5
	30 - 15	10 - 15
	10 - 5	20 - 25
60 - 55	95 - 55	Nil
	50 - 25	5
	20 - 5	10 - 15
50 - 45	95 - 35	Nil
	30 - 25	5
	20 - 5	10
40 - 35	95 - 35	Nil
	30 - 5	5
30	95 - 25	Nil
	20 - 5	5
25	95 - 35	Nil
	30 - 5	5
20 - 15	95 - 5	Nil
10 - 5	95 - 55	Nil
	50 - 25	5
	20 - 5	10
0	This virtually refers to uncut material, or so badly cut/damaged as to be considered as 'rough' for re-cutting	

SPECIAL NOTE:

The deduction figures above may appear to be illogical in a number of cases. However, they are not merely a play on figures but are carefully associated with a realistic situation with regard to the effect on the final grade and consequently value. Do not re-arrange these figures on an assumption.

