

DE BEERS GROUP

BEST PRACTICE PRINCIPLES

Disclosure Practice Note
2020

INTRODUCTION

As the external landscape regarding synthetic diamonds continues to develop, De Beers Group will issue practice notes to accompany its existing Best Practice Principles material in order to provide Sightholders/Accredited Buyers with the latest guidance on how to mitigate risk in relation to trading in undisclosed synthetic diamonds, given the likely causes of risk and maturity of mitigation approaches.

This note provides guidance to Sightholders/Accredited Buyers until such time as a further practice note is issued by De Beers Group.

SITUATION OVERVIEW

De Beers first introduced guidance for sample-based testing for synthetic diamonds in 2014. Since then, detection equipment has been substantially improved, with more automated testing, faster results and lower referral rates; and with many more equipment options to select from on the market.

However, the risk in this area remains of concern, as:

- Production capacity of synthetic manufacturers has increased,
- Retailer/other downstream stakeholder expectations have enhanced, and
- Increasing media coverage by consumer-facing outlets on this issue.

As a result of both the changes in technology and the evolving landscape we have updated the BPP Disclosure Practice Note and amended the guidance on testing for synthetic diamonds. The guidance applies an agile risk-based approach with four options to choose from that we believe addresses the risks, while also addressing the complexities of each individual business.

The following approach and guidance should be taken to minimise the risk of undisclosed synthetic diamonds up until a further practice note is issued by De Beers.

DETERMINING THE RISK IN YOUR PIPELINE

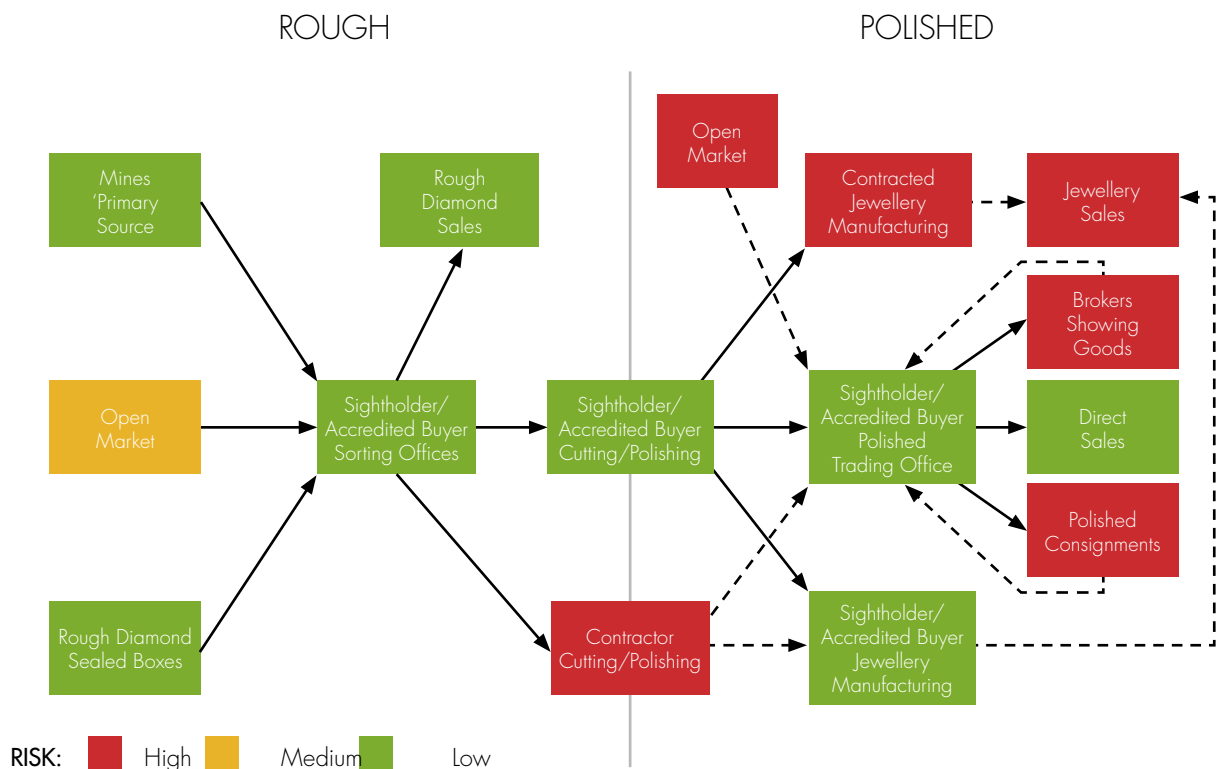
As part of the BPP Assurance Programme, Sightholders/Accredited Buyers are required to map out their pipeline and identify all the possible contamination points in their business. Each contamination point will hold a different level of risk and different risk levels will require different types of action to be taken.

Defining risk:

- **Low Risk:** Strong level of confidence, implausible risk of contamination, simple distinction between synthetic diamond and natural diamond component. Conducting spot checks is advised for this level of polished goods.
- **Medium Risk:** Moderate level of confidence, possible risk of contamination, simple distinction between synthetic diamond and natural diamond and/or existing systems in place: sample-based testing, policy, procedure and training required.
- **High Risk:** Moderate to low level of confidence, high risk of contamination. Testing required for distinction between natural diamond and synthetic diamond component alongside policy, procedure and training.

Sightholders/Accredited Buyers will be required to define the level of risk attributed to each identified contamination point and determine whether testing (including sample testing) is required alongside stronger policies, procedures and training. Refer to the Disclosure Requirements in the BPP documentation for further guidance.

The diagram below further illustrates how to conduct your Pipeline Risk Assessment:



Low Risk: if Sightholders/Accredited Buyers are buying rough directly from primary sources, they can be confident that the mined parcels are natural diamonds.

Medium Risk: buying rough from the open market is a medium risk contamination point. Unprocessed synthetic diamonds are easily identified with the naked eye and so this contamination point could be rightly addressed through policy, procedure and training. For example, in this case, the procedure could require that all members of the rough purchasing team are trained in identifying the different characteristics between unprocessed synthetic diamonds and rough natural diamonds. Buying polished diamonds from the open market could also be medium risk if your supplier has auditable systems in place to ensure that his contamination points are effectively addressed. Sample-based testing should be conducted through the use of in-house detection equipment, if available, or use of external testing platforms if required.

High Risk: Polished diamonds coming in to a Sightholder's/Accredited Buyer's pipeline from an external source may be considered high risk contamination points. For cases like these, stronger procedures are required to protect your pipeline; and must include a form of testing. Testing could be in house or through the use of external testing platforms and depending on the size ranges could be conducted through sample testing.

GUIDANCE ON TESTING (including sample-based checks)

As part of their procedures to cover high-risk points in their pipelines, Sightholders/Accredited Buyers are advised to ensure testing of all goods. However, we recognise that testing all goods can add a financial strain to your business, and therefore propose a risk-based random sample testing approach per size category and per level of risk of the parcel as outlined below if full testing is not financially feasible.

Polished diamonds of greater than 0.20 cts should all be tested or be accompanied by a certificate from a reputable grading laboratory prior to entering your supply chain. For polished diamonds that fall below this cut-off point we have developed the following approach as a guide to Sightholders/Accredited Buyers in choosing minimum sample sizes. If a sampling approach is adopted it is essential that measures are taken to ensure that sampling is random.

Depending on the size of the stones, the number of stones in the parcel, and the risk level of the source of the parcel; a 4-option risk-based approach has been designed that addresses the key risk areas, while also advising a pragmatic approach to the current context.

All risk assessments, processes, procedures and testing results should be retained.

RISK-BASED APPROACH TO TESTING:

STEP 1:

Determine relevant approach (A, B, C or D) depending on:

- Size of goods in parcel
- Number of stones in parcel
- Source of parcel and its associated risk rating, depending on the outcome of the pipeline risk assessment.

Table 1:

Size of stones	Source of goods	
	Medium risk sources, depending on outcome of pipeline risk assessment	High risk sources, depending on outcome of pipeline risk assessment
>0.20ct	Approach A (Full screening and full testing of any referrals)	
0.05ct – 0.20ct	Approach B (Screening of a sample and full testing of any referrals)	Approach A (Full screening and full testing of any referrals)
0.01ct – 0.05ct	Approach D (Screening of a sample from the parcel, and comparison with expected referral rates)	Approach C (Full screening of the parcel and comparison with the expected referral rate).
0.01ct – 0.003ct	Approach D (Melee Assurance Protocol – MAP - please refer to MAP guidance below)	Approach C (Melee Assurance Protocol - MAP - please refer to MAP guidance below))
<0.003ct	Approach D (<0.003ct) (Melee Assurance Protocol – MAP - please refer to MAP guidance below)	

STEP 2:

Once you have chosen the correct approach, follow sample guidance provided below.

Table 2:

Approach	Screening approach	Referral testing approach	Steps required depending on outcome of testing and referral testing
A	Screening the whole parcel	Test all referrals	
B	Screening a random sample from the parcel (see percentages below)	Test all referrals	Detection of any synthetics in the sample from the parcel should trigger the full screening of the parcel and testing of all referred stones.
C	Screening the whole parcel	If referral/pass rate agrees with expected referral rates for the given category of stones to within a set margin of error as provided by the manufacturer, then parcel can be accepted.	Detection of any synthetics during screening of the parcel should trigger the testing of all referred stones. If the referral rate differs from the expected referral rate by more than the margin of error this should trigger the testing of all referred stones. The approach should be backed up with testing of referrals for randomly selected parcels.
D	Screening of a sample of stones from a parcel (see percentages below)	If referral/pass rate for the sample tested agrees with the expected referral/pass rate to within a set margin of error, the parcel can be accepted.	Detection of any synthetics during screening of the sample from the parcel should trigger full screening of the parcel and testing of any referred stones. If the referral rate differs from the expected referral rate by more than the margin of error this should trigger full testing of all referred stones from the sample. If any synthetics are detected in testing of the referred stones from the sample this should trigger full testing of the parcel. The approach should be backed up with testing of referrals generated in screening samples from randomly selected parcels.

SAMPLE PERCENTAGES FOR APPROACHES B AND D:

SAMPLE PERCENTAGES FOR APPROACH B:

The sampling has been designed to give 95% confidence of less than 0.1% synthetics or 10 synthetics (whichever is less) if no synthetics were found after screening and testing of any referrals.

Illustrative example:

Consider a parcel of 4000 stones.

The minimum sample size to give 95% confidence that the parcel contains less than 0.1% (ie <4) synthetics (if no synthetics were found in the sample after screening and full testing of any referrals) is 2120 (= 53% of 4000). If any synthetics are found in the sample, clearly the whole parcel should be fully tested.

Table 3: Sample percentages for Approach B

Number of stones per parcel	% sample
1-1500	100%
1501-2500	78%
2501-3500	63%
3501-4500	53%
4501-5500	45%
5501-6500	40%
6501-7500	36%
7501-8500	32%
8501-9500	28%
9501-10500	26%
>10500	26%

EQUIPMENT EXAMPLES

AMS2 SAMPLE PERCENTAGES FOR APPROACH D:

Screening of colourless and near-colourless melee diamonds using AMS2 has indicated referral rates of 0.25% ($\pm 0.25\%$) independent of stone size in the range 0.003 ct – 0.20 ct. The highest referral rate that lies within this range has been set as the AMS2 threshold referral rate and this is $0.25\% + 0.25\% = 0.5\%$.

Table 4 lists minimum random sample sizes for different ranges of numbers of stones per parcel. The sample sizes listed are based on what is required to give 95% confidence level that the referral rate for the sample of stones from a parcel would reflect, to within a 0.25% error margin, the referral rate for the parcel as a whole if the entire parcel were screened.

There is no size dependence of the minimum sample sizes across the range 0.003ct – 0.2ct. One or more stones dispensed into the “synthetics” bin during screening of a parcel should trigger an investigation of all referrals from the parcel. A referral rate above the appropriate threshold referral rate (0.5%) should also trigger full testing of referred stones from the sample.

Illustrative Example:

Consider the following example: a 160 ct parcel containing 16,000 stones.

In using AMS2 screening with Approach D screening of 8.1% (1296 stones) of the parcel would be required (independent of size) to give 95% confidence level that the referral rate for the sample of stones from a parcel would reflect, to within a 0.25% error margin, the referral rate for the parcel as a whole if the entire parcel were screened.

The expected referral rate for AMS2 is 0.25% ($\pm 0.25\%$). The threshold referral rate is the highest referral rate that lies within this range and this is $0.25\% + 0.25\% = 0.5\%$.

In this example, 8.1% of the parcel of 16,000 is screened and this is 1296 stones. 0.5% of 1296 is 6.48. Therefore, if in screening the random sample of 2096 stones with AMS2 there are more than 6 referrals, further action, as advised in Table 2 should be taken. The first step in such further action would be to test the referrals from the sample and if any synthetics are detected in testing the referred stones, this should trigger full testing of the parcel.

Table 4: AMS2 sample percentages for Approach D

Number in parcel	% of parcel to be sampled
0–100	96.8%
101–200	91.1%
201–300	86.0%
301–400	81.4%
401–500	77.3%
501–600	73.6%
601–700	70.2%
701–800	67.1%
801–900	64.3%
901–1000	61.7%
1001–1200	58.2%
1201–1400	54.1%
1401–1600	50.5%
1601–1800	47.4%
1801–2000	44.7%
2001–2500	40.5%
2501–3000	35.8%
3001–4000	30.5%
4001–5000	25.4%
5001–6000	21.8%
6001–7000	19.1%
7001–8000	17.0%
8001–9000	15.3%
9001–10000	13.9%
10001–12500	12.0%
12501–15000	10.0%
15001–20000	8.1%
20001–25000	6.4%
25001–30000	5.3%
30001–40000	4.2%
40001–50000	3.3%

SYNTHDETECT SAMPLE PERCENTAGES FOR APPROACH D:

Screening of colourless and near-colourless melee diamonds with SYNTHdetect has indicated an expected referral rate of 0.05% ($\pm 0.05\%$). The highest referral rate that lies within this range has been set as the SYNTHdetect threshold referral rate and this is $0.05\% + 0.05\% = 0.1\%$.

Table 5 lists minimum random sample sizes for different ranges of numbers of stones per parcel. The sample sizes listed are based on what is required to give 90% confidence level that the referral rate for the sample of stones from a parcel would reflect, to within a 0.05% error margin, the referral rate for the parcel as a whole if the entire parcel were screened.

One or more stones identified as synthetic during screening of a parcel should trigger an investigation of all referrals from the parcel. A referral rate above the appropriate threshold referral rate (0.1%) should also trigger full testing of referred stones from the sample.

Illustrative Example:

Consider the following example: 200 carat parcel containing 20,000 x 0.01 ct stones.

In using SYNTHdetect screening with Approach D, screening of 23.6% (4720 stones) of the parcel would be required (independent of size) to give 90% confidence level that the referral rate for the sample of stones from a parcel would reflect, to within a 0.05% error margin, the referral rate for the parcel as a whole if the entire parcel were screened.

The expected referral rate of SYNTHdetect has been found to be 0.05% ($\pm 0.05\%$). The threshold referral rate is the highest referral rate that lies within this range and this is $0.05\% + 0.05\% = 0.1\%$.

In this example, 23.6% of the parcel is screened and this is 4720 stones. 0.1% of 4720 is 4.72. Therefore, if in screening the random sample of 4720 stones with SYNTHdetect, there are more than 4 referrals, action should be taken as advised in Table 2. The first step in such further action would be to test the referrals from the sample and if any synthetics are detected in testing the referred stones, this should trigger full testing of the parcel.

Table 5: SYNTHdetect sample percentages for Approach D

Number in parcel	% of parcel to be sampled
0-100	99.1%
101-200	97.3%
201-300	95.6%
301-400	93.9%
401-500	92.3%
501-600	90.8%
601-700	89.3%
701-800	87.8%
801-900	86.4%
901-1000	85.1%
1001-1200	83.1%
1201-1400	80.6%
1401-1600	78.3%
1601-1800	76.1%
1801-2000	74.0%
2001-2500	70.6%
2501-3000	66.3%
3001-4000	60.7%
4001-5000	54.6%
5001-6000	49.6%
6001-7000	45.4%
7001-8000	41.9%
8001-9000	38.9%
9001-10000	36.3%
10001-12500	32.5%
12501-15000	28.2%
15001-20000	23.6%
20001-25000	19.4%
25001-30000	16.4%
30001-40000	13.4%
40001-50000	10.7%

WHAT TO DO WITH IDENTIFIED SYNTHETIC DIAMONDS:

It is the responsibility of the recipient to ensure sufficient provisions are in place to safeguard the integrity of the diamond pipeline such that synthetics are not inadvertently disclosed as anything other than synthetic.

FURTHER DETAIL DESCRIPTIONS ON APPROACHES:

APPROACH A:

Full screening of all stones in a parcel followed by testing of all referred stones.

This is the most rigorous approach and the only one which can give 100% confidence. Although this approach can generally be applied for all stones above a particular threshold size, this guidance recognises that, with equipment available, in some parts of the trade it might not be viable for smaller stones. This approach is not based on any assumptions about the equipment and testing methods, other than that they never erroneously pass a synthetic.

APPROACH B:

Screening of a sample of stones from a parcel with full testing of any referred stones.

Statistical methods can be used to derive minimum random sampling required for given numbers of stones in a parcel to give particular levels of confidence (95% in this guidance) that if no synthetics were detected in the sample (following testing of any referred stones) there will be less than a given percentage (0.1% in this guidance) of synthetics in the parcel as a whole. While not giving 100% confidence, this approach may provide a suitable compromise that is not based on any assumptions about the equipment and testing methods used, beyond their never erroneously passing a synthetic and that sampling is random. Detection of any synthetics in the sample from the parcel should trigger the full screening of the parcel and testing of all referred stones.

APPROACH C:

Full screening of all stones in a parcel and accepting the parcel if the referral rate agrees with the expected referral rate for the given category of stones to within a set margin of error.

By testing a large volume of stones using particular screening equipment (eg AMS2 and SYNTHdetect) it has been possible to state referral rates that are broadly expected for colourless and near-colourless diamonds.

For AMS2, screening of colourless and near-colourless diamonds the expected referral rate is 0.25% ($\pm 0.25\%$). In this case, if the AMS2 referral rate for the parcel lies within the range 0 - 0.5% the parcel may be accepted.

For SYNTHdetect, screening of colourless and near-colourless diamonds the expected referral rate is 0.05% ($\pm 0.05\%$). In this case, if the SYNTHdetect referral rate for the parcel lies within the range 0 – 0.1% the parcel may be accepted.

Please note that the expected referral rate is specific to the equipment and the category of goods that are screened. This approach can therefore only be used if an expected referral rate is provided, either in this guidance for the named equipment, or by the equipment manufacturer.

Detection of any synthetics during screening of the parcel should trigger the testing of all referred stones.

If the referral rate differs from the expected referral rate by more than the margin of error this should trigger the testing of all referred stones. The approach should be backed up with testing of referrals for randomly selected parcels.

APPROACH D:

Screening a sample of stones from a parcel and accepting the parcel if the referral/pass rate for the sample tested agrees with the expected referral/pass rate to within a set margin of error.

For very small stones, this guidance recognises that full screening of all stones might not be viable. Guidance is therefore provided on screening of samples of stones from parcels, with no requirement for referral testing if the referral rate from screening of a sample is close enough to the expected referral rate for the equipment used. The guidance includes tables of the minimum random sample sizes, for different parcel sizes, required to give 99% confidence level that the referral rate for the sample of stones from a parcel would reflect, to within a given margin of error, the referral rate for the parcel as a whole if the entire parcel were screened. Such tables are provided for both AMS2 and SYNTHdetect based on the acceptable range of referral rates. These are specified above under Approach C but, for clarity, they are repeated below.

For AMS2, screening of colourless and near-colourless diamonds the expected referral rate is 0.25% ($\pm 0.25\%$). In this case, if the AMS2 referral rate for the sample of the required size lies within the range 0 - 0.5% the parcel may be accepted.

For SYNTHdetect, screening of colourless and near-colourless diamonds the expected referral rate is 0.05% ($\pm 0.05\%$). In this case, if the SYNTHdetect referral rate for the sample lies within the range 0 – 0.1% the parcel may be accepted.

Detection of any synthetic diamonds during screening of the sample from the parcel should trigger full screening of the parcel and testing of any referred stones. If the referral rate differs from the expected referral rate by more than the margin of error this should trigger full testing of all referred stones from the sample. If any synthetics are detected in testing of the referred stones from the sample this should trigger full testing of the parcel. The approach should be backed up with testing of referrals generated in screening samples from randomly selected parcels.

For screening equipment for which expected referral/pass rates have not been defined by the manufacturer, Approach C and Approach D cannot be applied effectively. When considering use of Approach A or Approach B, we recommend use of screening equipment that gives the lowest referral rate.

DETECTION EQUIPMENT OPTIONS

While the guidance provided is based on AMS2 and SYNTHdetect equipment; the BPP requirements do not specify which specific detection equipment or gemological laboratory should be used by a Sightholder or Accredited Buyer.

It is advisable for Sightholders and Accredited Buyers to purchase equipment or third party testing services from reputable organisations to ensure full compliance with the BPP requirements.

In March 2019, the Assure Instrument Testing Programme was launched which published performance testing results, as verified by an independent third party laboratory, of eleven diamond verification machines. For more information go to www.diamondproducers.com/assure.

GUIDANCE FOR COLOURED STONES AND FANCY CUT MELEE

Some equipment can only be used to screen round brilliants but equipment that can be used to screen fancy cut stones has become available (eg AMS2 and SYNTHdetect). For fancy cut stones it is therefore now possible to follow the same guidance as for round brilliants.

All stones can be tested to see if they are natural or synthetic diamonds but it must be recognised that referral rates from screening of coloured goods can be significantly higher than from colourless and near-colourless stones. The expected referral rates given in the sampling guidance provided for Approaches C and D is specific to colourless and near-colourless goods. It should also be recognised that for coloured goods there is in general a greater risk of application of treatments. We therefore recommend that the risks related to trading in undisclosed synthetic diamonds should be addressed through a combination of processes. These should include:

Testing: Detection equipment can be purchased (recognising that expected referral rates are in general higher for coloured goods) or goods should be sent to a reputable gemological institute.

Buying from trusted suppliers: Sightholders/Accredited Buyers should only buy from suppliers on which they have carried out robust due diligence and with which KYS (Know Your Supplier) and "Chain of Accountability" systems are fully implemented.

Assurance: Sightholders/Accredited Buyers should only purchase/receive goods which come with assurances relevant to the risk. For example should Sightholders/Accredited Buyers contract their cutting and polishing to an external factory, the polished yield should come with an assurance that it is a direct yield from the provided rough parcel.

Factory controls in place: Implement effective and detailed policies, procedures, security, monitoring and training to avoid "switching" on the factory floor. For more information, refer to the Product Security section (A.6) of the BPP Requirements.

BPP MELEE ASSURANCE PROTOCOL

GUIDANCE ON ROUGH AND POLISHED DIAMONDS OF SIZE 0.01CT AND LESS

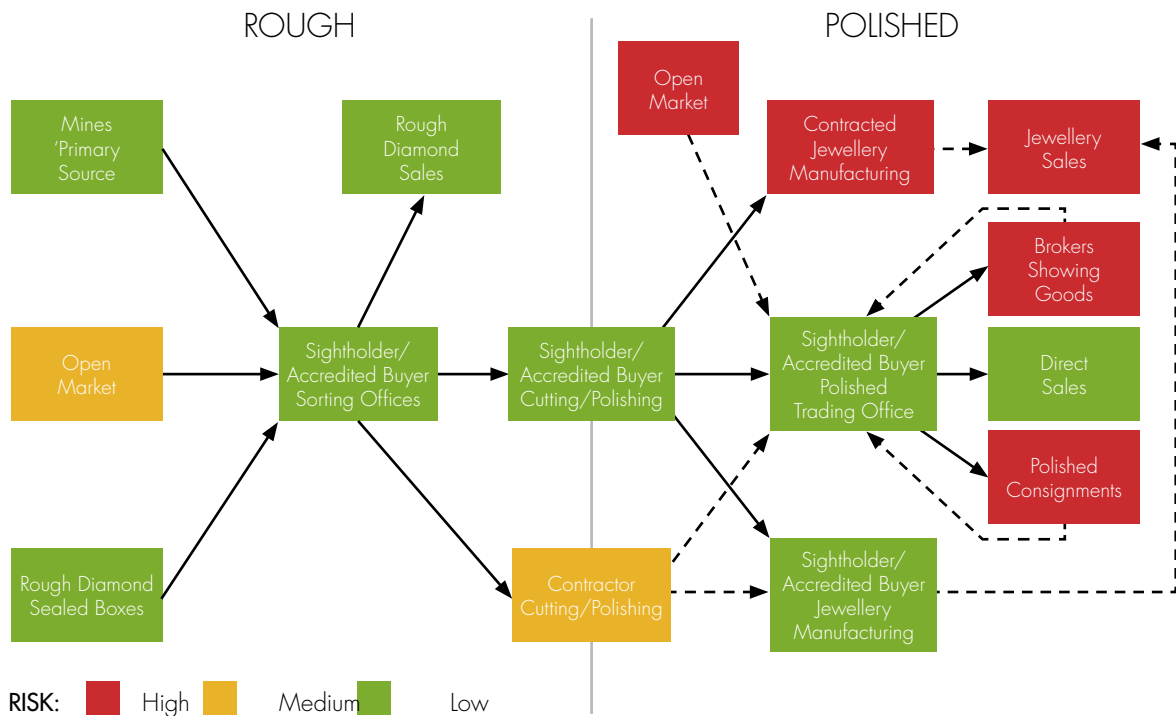
Please note this is also applicable to non-substantial contractors in this higher risk area.

SITUATION OVERVIEW

De Beers Group recognises that there is not, at present, a cost effective practice to address the potential risk of undisclosed synthetic diamonds entering the natural diamond pipeline in the 0.01ct and below category through full testing. However, the new guidance provided above, as well as the BPP Melee Assurance Protocol requirements, offer a practical solution to mitigate against this risk through the implementation of auditable and segregated systems that are independently verified by a third party auditor, as part of the BPP Assurance Programme.

PIPELINE RISK ANALYSIS OF CONTAMINATION POINTS

Sightholders and Accredited Buyers are required to map out their pipeline for diamonds that are 0.01cts and below, identify all the possible contamination points in their business and assign them with a risk level. This can be done as part of the overall pipeline risk assessment for all sizes of goods, but should reflect clearly how risk has been assessed for goods that are 0.01ct or less.



*Please be aware that the following examples for risk assessment for goods that are **0.01ct or less** are not definitive and exceptions may occur.*

High Risk: A moderate to low level of confidence, high risk of contamination due to unknown rough origin; high risk of unknown sources of polished diamonds/manufacturers; no visibility of systems or processes. Robust procedures are required and must include full, effective testing for synthetic diamonds.

Purchasing polished diamonds from the open market, polished diamonds being sent out on consignment, and the use of brokers or other third parties could all be considered high risk contamination points. Auditable systems must be implemented to ensure that all purchases are documented and the testing results are retained.

Medium Risk: A moderate level of confidence, possible risk of contamination, however verified compliance against the BPP Melee Assurance Protocol requirements reduces the risk. Robust procedures are required and must include sample testing for synthetic diamonds at a reputable laboratory or by effective in-house detection equipment.

Purchasing rough diamonds from the open market is classified as medium risk due to simple visual distinction between unprocessed synthetic diamond and natural rough diamond. To address any potential contamination risk, all members of a rough purchasing team should be trained to identify the different characteristics unprocessed synthetic diamonds.

Off-site non-substantial contractors that are engaged to cut and polish rough diamonds in the 0.01 carat and below category shall be declared as substantial contractors on the BPP SMART System and will fully participate in the Contractor BPP Assurance Programme. Sightholders and Accredited Buyers must ensure that the offsite contractor has auditable internal management controls to address any potential contamination points at its premises.

If only partial compliance is demonstrated by the Sightholder/Accredited Buyer, then the off-site manufacturing process shall be classified as high risk and full testing of polished diamonds at a reputable laboratory will become a requirement.

Low Risk: A strong level of confidence, implausible risk of contamination due to all processes from rough to polished being performed in house.

Purchasing rough diamonds directly from a primary source would be classified as low risk and would constitute the beginning of a sealed pipeline. Manufacturing that is carried out by an on-site contractor would ensure continuance of the sealed pipeline; however, the Sightholder or Accredited Buyer must have full overview of the systems in place by completing a merged tier A BPP workbook and have full oversight of the processes and systems at the manufacturing location.

GUIDANCE FOR SAMPLE TESTING

Please follow the guidance provided above in Tables 1 and 2 for stones that are less than one 0.01 ct.

For clarification, only Approaches C or D are applicable for this size range.

APPROACH C:

If the parcel has been purchased from a high risk source, Approach C must be followed as a minimum. This requires 100% screening of all stones in the parcel.

If referral rate agrees with expected referral rates for the given category of stones to within a set margin of error as provided by the manufacturer, then parcel can be accepted.

Detection of any synthetics during screening should trigger testing of all referred stones. If the referral rate differs from the expected referral rate by more than the margin of error, this should trigger testing of all referred stones. The approach should be backed up with testing of referrals for randomly selected parcels.

APPROACH D:

If the parcel has been manufactured internally, or via a medium risk source, please follow Approach D as a minimum.

Please note that **ALL** melee contractors must be disclosed on the BPP SMART System, even if they are non-substantial contractors. Non-substantial contractors manufacturing melee will participate in the BPP MAP audit process, focused on looking at health and safety, product security and disclosure risks. All substantial contractors manufacturing melee will participate in the normal contractor BPP Programme.

Approach D requires sample screening of the parcel per the guidance stipulated above.

If the referral/pass rate for the sample tested agrees with the expected referral/pass rate to within a set margin of error, the parcel can be accepted.

Detection of any synthetics during screening should trigger full screening of the parcel and testing of all referred stones. If the referral rate differs from the expected referral rate by more than the margin of error, this should trigger testing of all referred stones. If any synthetics are detected in testing the referred stones from the sample, this should trigger full testing of the parcel. The approach should be backed up with testing of referrals for randomly selected parcels.

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