

Relevant assessment and reporting criteria

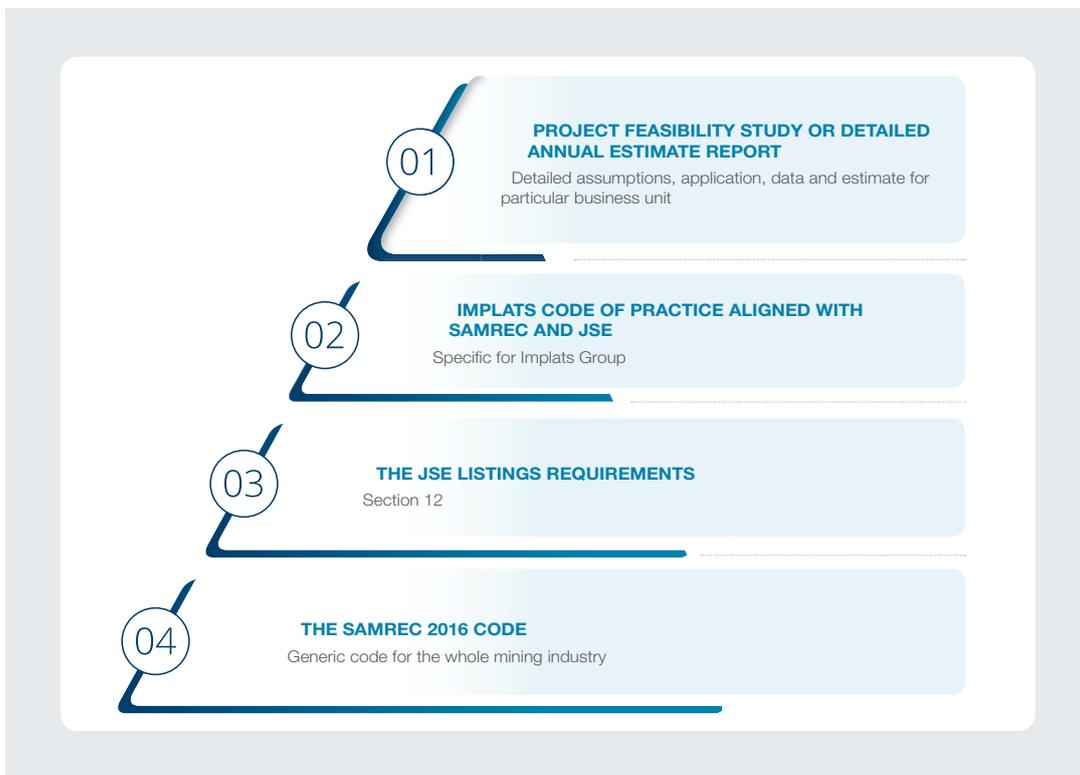
The following key assumptions and parameters, unless otherwise stated, were used in the compilation of the estimates in this declaration:

> A Group-wide committee, the Implats Resource and Reserve Committee (IRRC), was constituted in 2009 with the objective of promoting standardisation, compliant and transparent reporting, continuous improvement and internal peer reviews. The committee meets quarterly with representatives from the various operations and MRM disciplines. As a result, Implats developed a Group-wide protocol for the estimation, classification and reporting of Mineral Resources and

Mineral Reserves in 2010 to enhance standardisation and to facilitate consistency in auditing. This protocol is updated annually with the aim of improving and specifically guiding the classification of Mineral Resources and to ensure compliance with the SAMREC Code.

> While Implats complies to the JORC Code, the definitions are either identical or do not vary materially from the SAMREC Code. This report is compiled in compliance to the guidelines and principles of the SAMREC Code and the JSE Listings Requirements.

STRUCTURAL HIERARCHY OF PRINCIPLES, REQUIREMENTS, STANDARDS, ASSUMPTIONS AND ESTIMATES



> A key aspect of the Group-wide protocol determines the standards for classification of Mineral Resources. The classification standard is a matrix process and measures both geological and grade continuity between points of observation

> Mineral Resource and Mineral Reserve evaluation is based on a systematic process of collecting and validating geological data as depicted in the Group-wide protocol. Updating of geological and geostatistical models with data from exploration and underground drilling, mapping and sampling forms the basis of the Mineral Resource and Mineral Reserve Statements

> Quality, distribution and quantity of available data and the confidence thereof forms the basis of the Mineral Resource classification

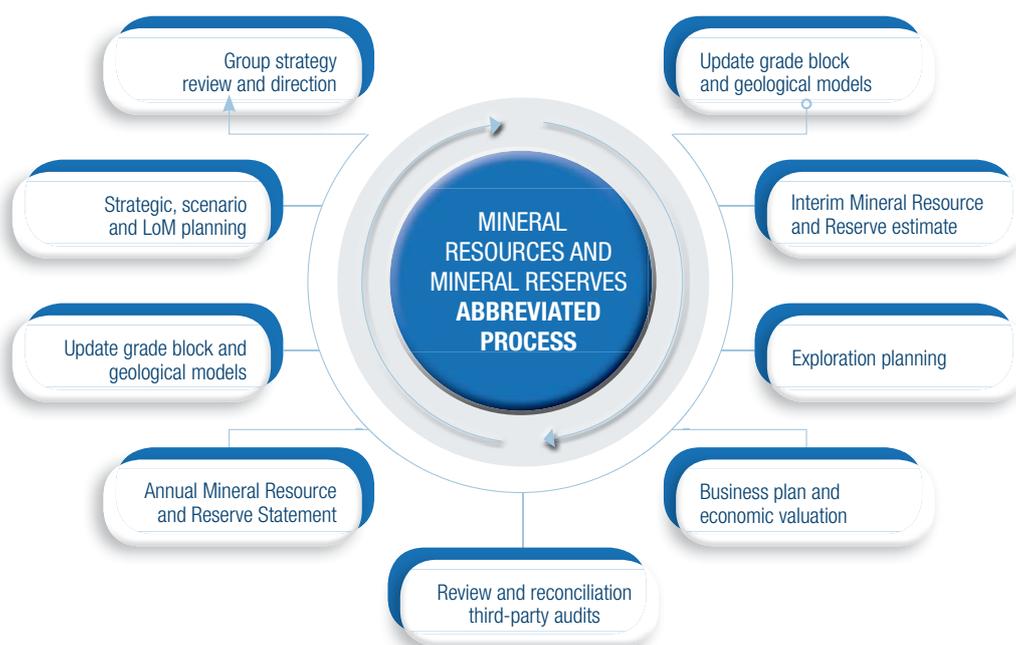
> Geostatistical estimation is done using different geostatistical software packages within the Implats Group. Different interpolation methods and geostatistical parameters are used depending on the orebody and sampling density. Ordinary kriging and inverse distance weighting are the primary interpolation methods used within the Implats Group

> Implats introduced a depth cut-off in 2010 whereby mineralisation below a certain depth is excluded from the Mineral Resource estimate. The depth cut-off of 2 350m was applied during the 2013 Implats Mineral Resource estimates and equated to a VRT of 73°C. A depth cut-off of 2 000m below surface was introduced in 2014. In addition to the new depth cut-off areas, various Mineral Resource blocks are considered on a case-by-case basis and this has resulted in areas where the eventual economic extraction is in doubt. These areas are excluded from the summation of total Mineral Resources per area and the attributable Mineral Resources (see page 27)

> Mineral Resource tonnage and grades are estimated *in situ*. The Mineral Resources for the Merensky Reef are estimated at a minimum mining width, and may therefore include mineralisation below the selected cut-off grade. Mineral Resource estimates for the UG2 Reef reflect the minimum mineable width and may include dilution

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- > Mineral Resource estimates for the Main Sulphide Zone are based on optimal mining widths. Such mining widths are reviewed from time to time given varying economic and operational considerations
- > Mineral Resource estimates are reported inclusive of Mineral Reserves, unless otherwise stated
- > Mineral Resource estimates allow for estimated geological losses but not for anticipated pillar losses during eventual mining, except where these pillars will never be extracted, such as legal, boundary and shaft pillars
- > Mineral Reserve estimates include allowances for mining dilution and are reported as tonnage and grade delivered to the mill
- > Mineral Reserve estimates take cognisance of all mine stability pillars and the content associated with pillars are excluded
- > Rounding-off of figures in the accompanying summary estimates may result in minor computational discrepancies. Where this occurs it is not deemed significant
- > It is important to note that the Mineral Resource Statements, in principle, remain imprecise estimates and cannot be referred to as calculations. All Inferred Mineral Resources should be read as 'approximations'
- > Exploration samples are mainly assayed for all PGEs and Au, using the nickel sulphide fire assay collection method and determining the elements with an inductively coupled plasma mass spectrometer (ICP-MS). Base metal content is determined by an atomic absorption (AA) spectrometer using partial digestion in order to state metal in sulphide that is amenable to recovery by flotation processes. All these analyses are undertaken by Intertek via their preparatory branch in Bapsfontein
- > Underground samples are mainly assayed for Pt, Pd, Rh and Au using the lead collection method by the in-house laboratories at the respective mines. A partial digestion at the in-house laboratories is used to determine the base metal content of samples using AA
- > All references to tonnage are to the metric unit
- > All references to ounces (oz) are troy with the factor used being 31.10348 metric grams per ounce
- > The Mineral Resources and Mineral Reserves reported for the individual operations and projects are reflected as the total estimate (100%). The corresponding estimates relating to attributable Mineral Resources and Mineral Reserves are only given as combined summary tabulations
- > Mineral Reserves are that portion of the Mineral Resource which technical and economic studies have demonstrated can justify extraction at the time of disclosure. Historically, Implats has only converted Mineral Resources to Mineral Reserves on completion of a full feasibility study for a project with Board approval of the full project capital and LoM I for an operating mine (as per SAMREC). The conversion of Mineral Resources to Mineral Reserves for Zimplats has been aligned to the Implats standard since 2014
- > The work processes and flow are fully integrated with the planning cycle and a structured approach has been adopted with activities aligned in a continuous sequence. The simplified cycle is illustrated below:



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- > No Inferred Mineral Resources have been converted into Mineral Reserves at any of the Implats' operations reported. According to the SAMREC Code, Inferred Mineral Resources may be included in mine design, mine planning and economic studies only if a mine plan exists. SAMREC requires that a comparison of the results with and without the Inferred Mineral Resources must be shown and the rationale behind including it must be explained
- > There are only limited changes in the estimation principles and reporting style as at 30 June 2018 relative to the previous report
- > The term Ore Reserve is interchangeable with the term Mineral Reserve
- > Implats uses a discounted cash flow model that embodies economic, financial and production estimates in the valuation of mineral assets. Forecasts of key inputs are:
 - Relative rates of inflation in South Africa and the United States
 - Rand/Dollar exchange rate
 - Metal prices
 - Capital expenditure
 - Operating expenditure
 - Production profile
 - Metal recoveries
- > The outputs are net present value, the internal rate of return, annual free cash flow, project payback period and funding requirements. Metal price and exchange rate forecasts are regularly updated by the marketing department of Implats. As at 30 June 2018, a real long-term forecast for PGM basket revenue per platinum ounce sold of R27 300 was used. Specific real long-term forecasts in today's money include:

| | | |
|---------------|---------|---------------|
| Platinum | US\$/oz | 1 040 |
| Palladium | US\$/oz | 1 040 |
| Rhodium | US\$/oz | 2 300 |
| Ruthenium | US\$/oz | 215 |
| Iridium | US\$/oz | 1 020 |
| Gold | US\$/oz | 1 370 |
| Nickel | US\$/t | 13 750 |
| Copper | US\$/t | 7 000 |
| Exchange rate | R/US\$ | 13.00 |

- > The spot basket price calculated for Implats at a Group level as at 30 June 2018 was R26 091 and the equivalent real long-term market consensus basket price is R25 130 (US\$1 860) per ounce
- > The long-term market consensus metal price estimates are the mean of 19 broker companies real term metal price estimates over the next three to five years
- > Long-term basket price forecasts per operation vary in accordance with the PGM metal ratios
- > Rigorous profitability tests are conducted to test the viability of the Mineral Reserves, references to this are listed in the sections per operation and highlight the

spot price scenarios. A summary graph showing the price sensitivity of the total Group Mineral Reserves is depicted on the right.

An economic profitability test was conducted at each shaft. At Impala and Marula so-called tail-cutting tests were performed. The process entails the determination of when a shaft is no longer profitable and no longer contributes to fixed overheads. Each shaft's processing, services and other costs are split between their relevant fixed and variable portions. Once a shaft is no longer profitable (or contributing to fixed overheads), it is removed from the LoM I profile (and Mineral Reserves) and the fixed costs apportioned to the shaft are then allocated over to the other shafts that remain operational.

Mineral Resource, by definition, is 'a concentration or occurrence of solid material of economic interest in or on the earth's crust in such form, grade, quality and quantity that there are reasonable and realistic prospects for eventual economic extraction'. The interpretation of such 'eventual economics' varies significantly. However, it implies some form of high-level view in terms of either 'yard-stick comparisons' or high-level scenario models. On this basis Implats has excluded significant mineralisation (2 000m below surface, and selected areas based on geology and potential infrastructure (see section 'Areas excluded from Mineral Resource estimates'). In total some 42Moz Pt have been excluded from current statements on this basis. However, under the present price regime and outlook, the bulk of Implats' South African Mineral Resources are marginal at best and require long-term metal prices higher than current estimates.

The deeper Rustenburg Mineral Resources beyond current infrastructure investment require a real basket price of between R31 000 and R34 000 per Pt oz (US\$2 500). This suggests that future investments at Impala will at best be marginal under the current price assumptions. Notably, the Zimbabwean Mineral Resources are reasonably robust in terms of 'eventual economic extraction'. Mineral Resources beyond current infrastructure investment will require a real long-term basket price in the order of R31 000 per Pt oz (US\$2 350).

Implats Mineral Reserves versus real basket price as at 30 June 2018

