Chrome Recovery

Metallurgical Testing

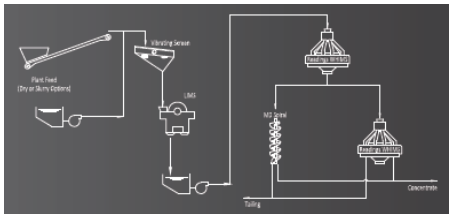
Our world class test facilities deliver extensive testwork for chromite ores including ROM/tails of LG, MG and UG2 materials from >15% Cr_2O_3 grade to metallurgical, chemical or foundry grade products.

We routinely test samples as small as 100 grams for characterisation and specific gravity fractionation, through to larger samples up to 2000 kg for bench and pilot scale testing and flowsheet development. Our laboratory also has the capability to create multi-stage pilot scale circuits to treat bulk samples (80-100 tonnes) for process testing and circuit optimisation.

Process and Flowsheet Design

Results from metallurgical testing help our design teams to develop cost effective and efficient flowsheets for specific ore bodies.

The separation of valuable minerals from the ore is enhanced by the appropriate selection of feed preparation systems such as scrubbing, screening, classification and slimes removal. The diagram shown below is a subsection of a typical example of a chrome flowsheet.



Plant Design

Our most recent designs for chrome plants include modular plants that incorporate the latest wet high intensity magnetic (WHIMS) technology.

Providing an alternative to mining more feed material, the WHIMS plants process existing waste streams from current operations, essentially recovering what the conventional plants leave behind.

Mineral Technologies has become the ‘go to’ provider for relocatable, modular plants which incorporate core process technology into new low-cost configurations.

In addition to fast assembly and trouble free start-up, the modular plants provide the added benefits of minimal civil engineering work, easy modular scale-up for increased capacity, and relocatable options to move plants from site to site ensuring optimum return on capital expenditure.

Technology

We recently developed the CS1 spiral for low-cost chrome recovery. The CS1 spiral joins our fine mineral FM1 and olivine rejection VHG spirals to deliver optimised chrome recovery through spiral separation.

For Rand based chrome ores across Africa we also supply magnetic recovery (WHIMS technology).

Our latest range of equipment designed for the optimisation of chrome beneficiation includes:

- MD Spirals
  - CS1 (chrome spiral)
  - HC1 (high capacity)
  - FM1 (fine mineral)
  - HG (high grade) for LHM rejection
- Reading Magnetic Separators
  - Wet High Intensity Magnetic Separators (WHIMS); and
  - Medium Intensity Magnetic Separator (MIMS).

Completed Projects

- Doornbosch Chrome Mine, Samancor, South Africa
- Tweefontein Chrome Mine, Samancor, South Africa
- Tharisa Mine, Tharisa, South Africa
- Thorncliffe Chrome Mine, Glencore, South Africa

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