

# Regrind Testwork Review Initiative - The Grindwork for What is to Come

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## ABSTRACT

There is no generally accepted methodology to determine the energy requirements of regrind circuits. The typical Bond ball mill Work Index test is difficult to apply due to the nature of the samples and the limitations of the test, and regrind mill vendors typically have their own methodologies for estimating full scale mill performance.

The authors have compiled a database of regrind testwork results performed using different stirred milling technologies. This paper presents the regrind testwork methodologies used by different regrind mill vendors, and compares typical test conditions based on this dataset of stirred milling testwork results. A comprehensive review of the testwork results is provided, highlighting issues that metallurgists face when analysing testwork performed using different technologies and methodologies.

The regrind testwork database was analysed using different methodologies with the objective to identify a unique method that allow a direct comparison. The methodologies applied included the specific energy curves (signature plots), size specific energy, Larson's model and the fractals method.

A significant bias in the testwork following different technologies and procedures was observed, which typically results in a challenging selection of regrind circuit design parameters for greenfield projects. These inconsistencies were observed within studies performed on samples sourced from same location, demonstrating the uncertainty that this problem inflicts on design decisions.

Recommendations for regrind testwork planning are provided, with the intention of generating a robust testwork database for greenfield projects and reduce uncertainty in the design process of these circuits.