

# Optimising Ball Mill Grinding Circuits – It's Not Just the Mill

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## **ABSTRACT**

Ball mill grinding circuit operation is complex due to the interactions between the circuit components; as such, there is little to be gained from attempting to optimise the milling or classification stages independently. Circuit optimisation is best undertaken with a holistic approach, and a well-proven system is the Functional Performance Evaluation as developed by Metcom Technologies (McIvor et al, 2017). This analysis involves assessing mill power draw along with grinding and classification efficiencies, including a full review of all mineral characteristics testwork and circuit operating data. Mill grinding efficiency is established based on precise testwork with an actual sample of ball mill feed using a laboratory torque mill that reveals the cumulative grinding rate curves.

ME Elecmetal and Metcom have been partners since 2014, and this has been leveraged at several mineral processing plants globally with ball mill circuit optimisation projects. This paper describes the Metcom evaluation process and laboratory testwork and offers three case studies where ME Elecmetal customers have established improved ball mill circuit performance.