

PREDICTING THE OVERALL SPECIFIC ENERGY REQUIREMENTS OF AG/SAG, BALL MILL AND HPGR CIRCUITS ON THE BASIS OF SMALL-SCALE LABORATORY ORE CHARACTERISATION TESTS

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ABSTRACT

Until recently there was an almost complete absence of a formalised and validated approach to estimating the specific energy requirements of what are now regarded as conventional comminution circuits ie AG/SAG – ball mill circuits. This problem has been further compounded by the rise in popularity of HPGR technology, for which there is an even greater scarcity of relevant work to aid circuit designers. This paper describes a simple yet accurate procedure for determining the overall specific energy for such circuits using parameters that are derived from the SMC Test[®] and the Bond ball work index test. The approaches that are described are subsequently used to compare the energy usage of three different circuit configurations.