

The SMC Test®

The SMC Test® is the most widely-used comminution test in the world for AG & SAG Mills, High Pressure Grinding Rolls (HPGR) and Crushers.

It was developed to provide a range of comminution parameters for circuit design, optimisation and geometallurgical purposes through highly controlled breakage of rock samples using the JK Drop-weight Tester. Drill core, even quartered small diameter core, is suitable. Only relatively small quantities of sample are required which, if required, can be re-used to conduct Bond ball work index tests.

The results from conducting the SMC Test® are used to determine the drop-weight index (DWi®) which is a measure of the strength of the rock as well as the comminution indices Mia®, Mih® and Mic®. In conjunction with the Bond ball mill work index they can be used to accurately predict the overall specific energy requirements of circuits containing AG and SAG mills, Ball mills, Rod mills and HPGRs using the “Morrell Method”. This approach has been adopted by the Global Mining Guidelines Group and is described in detail via the following link: <https://gmgroup.org/the-morrell-method-to-determine-the-efficiency-of-industrial-grinding-circuits/>

The SMC Test® also generates the JK rock breakage parameters A, b, Axb® and estimated t_{a10} as well as the JK crusher model's t_{10} -Ecs matrix, all of which are provided as part of the standard report output from the test. Estimates of the crusher model appearance function can be provided on request. These values are used to simulate crushing and grinding circuits using JKTech's world renowned comminution simulator: <https://jktech.com.au/products/software>

Further information can be found via the following link: <https://www.smctesting.com/>