

Case Study



Vertical Roller Mill Grinding Elements

Mitak utilised its advanced Mitak IC ceramic composite material and achieved a wear life many times that of standard high chrome.

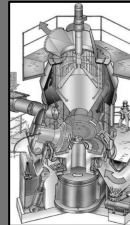
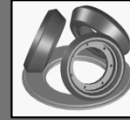
A South African Power Station had for decades used standard High Chrome White Iron alloys for their grinding elements. A tyre was lasting on average **1,500** hours and a set of table segments **2,500** hours.

The parts were replaced with an initial trial set made in Mitak IC – an advanced metal ceramic composite that combines the wear resistance of ultra-hard ceramic with the strength of a cast white iron matrix.

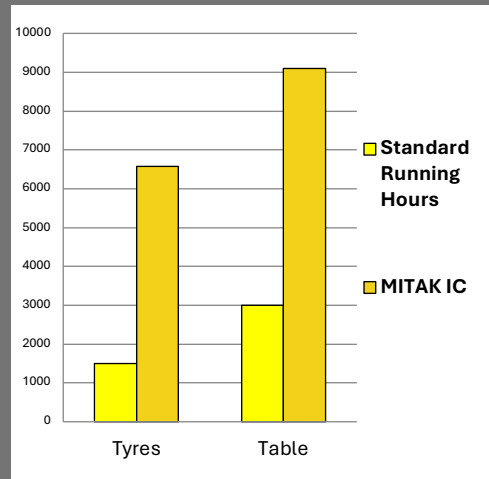
An extensive investigation was done by the plant owner to evaluate the performance of the new material. This work, which took over a year to complete, measured the tyres in nine places across the wearing face. The average wear rate over the entire tyre was 306.6mm per hour an improvement of over 4 times that of the standard white iron.

In spite of this success, a number of further improvements were made by Mitak to increase the ceramic coverage and depth of ceramic in the wear profile. Today, all of the tyres and segments made in standard white iron have been replaced with the Mitak IC material. The tyres now have a wear life of between **8,000** and **11,000** hours and the segments last well beyond this.

The ultimate measure of the success of Mitak IC shows in the consumption of spares: The station was expected to use more than 30 sets of tyres and segments a month. Now, by using Mitak IC, it uses on average only 2 sets per month.



Coal Specification	Average Present Value
Calorific Value (MJ / Kg)	20,76
Total Moisture (%)	7,43
Ash (%)	27,43
Volatile Matter (%)	19,5
Fixed Carbon (%)	48,5
Sulphur (%)	0,9
Size Grading 0% (+40mm,)	1,5
Abrasiveness (mg/Fe)	295
Hardgrove Index	59,00



Mitak is a global leader in the supply of hi alloy, abrasion-resistant wear parts.
For any queries please contact Graham Anderson +27 82 464 1972 or grahama@mitak.co.za

Visit www.mitak.co.za +27 11 908 1696 7 Dienst Street, Alrode, 1451, South Africa