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Customer Story

Durable lining solutions for dry grinding application





SITUATION

Grinding in a [ball mill](#) involves impact of grinding media on target material and subsequent size reduction and homogeneous blending of material. The ball mill walls are lined with ceramic tiles to prevent [wall abrasion and contamination](#).

The situation here refers to a [7 ftX 7 ft Ball mill](#) where heavy minerals are being ground with Alumina Grinding Media. However it was observed that wall lining tiles were falling apart after running for some days. [Premature cracks and edge chipping off](#) was leading to this phenomenon.

CHALLENGE

The major challenge in this kind of situation is to establish the exact root cause for the problem as the [simulations costs due to downtime](#) are high for the customer.

To develop a suitable ceramic formulation having [good fracture toughness and lesser brittleness](#) while [maintaining the same wear performance](#) to suit to highly abrasive environment was a challenge.

SOLUTION

The In- house R&D team, our [material experts](#), developed a new formulation for this specific requirement having better fracture toughness, impact resistance and wear resistance. The design of the ceramic lining was also reviewed simultaneously for ensuring better fitment & removing any sharp edges/corners in the product.

RESULTS

Our [installation experts](#) installed the new product and supervised the ball mill operation for a continuous run of [500 Hrs](#). [No edge chipping and breakage](#) was observed in the ceramic lining. 600 Tons material was reduced from a size of #80 mesh to #325 mesh & the lining was still as smooth as before. Since then, No such premature failure of ceramic lining in continuous operations has been faced by the customer.

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