



PROBLEM SOLVED™ PAPER

SOLUTION: Martin® Hurricane Air Cannon

INDUSTRY: Copper Mining

LOCATION: DRC, Africa

TITLE: Air Cannons Tackle Material Build-Up in DRC's Largest Copper Mine



Material build-up in hoppers and chutes often led to manual hammering, causing damage & safety concerns



15 numbers of 70-Ltr Martin® Hurricane Air Cannons were strategically installed across critical chutes



Martin® Hurricane Air Cannons improved material flow, minimized downtime, and boosted overall productivity.

PROBLEM

One of Africa's largest copper producers, located in the DRC, was experiencing material build-up issues in hoppers and chutes, causing significant operational challenges. The high moisture content of the material leads to clumping, resulting in blockages that disrupt material flow and reduce efficiency. Producing approximately 400,000 tonnes of copper per year, it is critical for the mine to maintain optimal production levels—making it essential to address these material flow issues to optimize productivity and minimize downtime. Employees often rely on hammers to dislodge stuck material, creating visible hammer rash on hoppers and chutes. This damage not only increases maintenance costs but also raises safety concerns.

SOLUTION

After conducting an audit at the mine, our Sales Engineer proposed installing 15 numbers of 70-Ltr capacity Martin® Hurricane Air Cannons across four chutes. This solution is ideal given the chute structures and the challenges posed by materials that retain moisture and become sticky, such as copper, coal, cement, and aggregate. The Martin® Hurricane Air Cannon's design allows for straightforward maintenance, with the complete valve assembly removable in one easy step from one side of the tank. This enables quick replacement within minutes, ensuring minimal disruption to operations. This efficient solution will help tackling material build-ups, improve flow, and enhance overall productivity at the mine.

RESULT

The installation of 15 Martin® Hurricane Air Cannons strategically placed across critical chutes has significantly improved material flow, reducing downtime associated with manual cleaning. Sticky materials that once caused blockages are now effectively dislodged, ensuring smoother, more efficient operation. This has minimized labor-intensive cleaning and allowed employees to focus on productive tasks. As a result, overall productivity has increased, enabling the mine to operate at optimal levels. The user-friendly design also enables quick maintenance, supporting sustained efficiency.