



PROBLEM SOLVED™ PAPER

SOLUTION: Martin® Tracker™

INDUSTRY: Steel

LOCATION: Tata Steel's Joda East Iron Mines in Odisha, India

TITLE: Martin® Tracker™ Resolves Belt Sway and Spillage in Iron Ore Mining



Tata Steel's Joda East Iron Mines in Odisha, was facing severe material spillage on a conveyor belt



Martin® Tracker™ deliver continuous, self-adjusting belt alignment preventing spillage and belt edge damage.



Belt sway was effectively eliminated, leading to a significant reduction in material spillage.

PROBLEM

A 5-star rated sustainable mining operation, Tata Steel's Joda East Iron Mines in Odisha, India was facing severe material spillage from a conveyor belt at its newly commissioned 4.6 million tonnes per year iron ore beneficiation plant. The primary issue was persistent belt sway and misalignment on 800 mm wide belts operating at 1.8 m/s, especially near the discharge chute area. Despite attempts to control the problem using roller frame tappers, spillage continued. This resulted in fugitive material challenges, productivity losses, higher maintenance effort, and increased safety and environmental risks in a critical, high-capacity mining operation.

SOLUTION

A comprehensive Walk the Belt™ conveyor audit was conducted by Martin Engineering's dedicated on-site field auditor to diagnose belt mistracking conditions and determine the optimal positioning of a belt-tracking solution. Based on the audit findings, Heavy Duty Martin® Trackers™ designed for a 800 mm belt width were recommended, with two units installed on the carrying side and one on the return side of the affected conveyor. This configuration was selected for its ability to deliver responsive, self-adjusting belt control without requiring major structural modifications. The Martin® Tracker™ provides continuous, precision alignment, minimizing mistracking, reducing edge damage, preventing spillage, and extending overall conveyor belt service life.

RESULT

Following installation, belt sway was effectively eliminated, leading to a significant reduction in material spillage. Conveyor tracking stability improved immediately and remained consistent during operation. Over six months of operation, the solution proved reliable, not only reducing material loss but also the need for manual cleanups, enhancing operational safety, and boosting overall productivity. The plant manager confirmed the issue was completely resolved and expressed satisfaction with the performance of the Martin belt trackers. The Martin® Trackers™ system continues to support smooth, efficient conveying in this high-importance, sustainable mining facility.