METZEN

Materials

From Mobile to Stationary: Modernised Primary Crusher for Higher Performance and Efficiency

A formerly mobile primary crusher with a feed hopper has been transformed into a fully stationary solution. The tipping hopper was modified so that a vibrating chute continuously feeds the roller screen and subsequently the jaw crusher. The discharged material is transferred via a belt conveyor directly to the processing plant, also constructed by GERWIN.

Project Overview

The modernised plant achieves a throughput of up to 500 t/h with a feed size of 0–800 mm and a target size of 0–200 mm. The new jaw crusher significantly increases performance while optimising particle distribution, reducing the proportion of fines. This results in a higher volume of marketable products and substantially improves the overall economic efficiency of the process.

In addition, the energy supply was adapted to the new stationary operation: converting from the previous diesel-electric drive of the mobile unit to a fully electrically powered stationary solution optimises energy efficiency and sustainability, contributing noticeably to CO_2 reduction.

Challenge

The mobile primary crusher had to be transformed into a high-performance stationary solution. The objectives were to increase throughput and product quality while optimising energy supply and reducing CO_2 emissions. Material feed had to be continuous and process-safe.

Solution
From mobile to stationary – optimised process

GERWIN modernised the primary crusher by modifying the tipping hopper and integrating a vibrating chute to feed the roller screen and jaw crusher continuously. The discharged material is transferred directly via belt conveyor to the processing plant. Simultaneously, the energy supply was redesigned for stationary operation, significantly improving energy efficiency and sustainability.

Result

The modernised stationary primary crusher combines high performance, optimised particle distribution, and sustainable energy supply. The volume of marketable products has increased, throughput has been enhanced, and CO_2 emissions have been reduced – a future-ready solution for efficient quarry operations.

Highlights

- **Maximum performance increase:** Throughput up to 500 t/h with optimised particle distribution
- **Higher economic efficiency:** More marketable products due to reduced fines
- **Flexible material feed:** Vibrating chute ensures continuous supply to roller screen and jaw crusher
- **Stationary energy supply:** Fully electric with optimised efficiency
- **Sustainable operation:** Reduced CO_2 emissions through optimised energy supply

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