



COROMANDEL CEMENTS LIMITED

Reduction of Motor Size in Limestone Primary Crusher

SUMMARY OF THE OPTION

Coromandel Cements Ltd., is a small OPC cement (Ordinary Portland Cement) manufacturing plant in South India, presently producing around 460 tons per day of OPC.

Limestone arrives from the mine quarry by dumpers in the form of blocks and boulders of around 300 mm size. These are subjected to primary size reduction by a primary crusher (hammer) operating at a capacity of 50-60 TPH (rated 100 TPH). The specified input size to crusher is (-) 300 mm. The Limestone Primary Crusher main motor of 220 kW was replaced by another motor of 165 kW in order to reduce the power consumption. This measure resulted in an annual monetary benefit of Rs. 101,209 (US\$ 2354/yr) and the investment of Rs. 100,000 (US\$ 2,326) was recovered in less than a year.

KEY WORDS

India, Cement, Electric motors, Limestone crusher

OBSERVATIONS

Reduction of Limestone Crusher motor power consumption by operating with a smaller sized motor.

Before Modification

- Lime stone Primary Crusher Main Motor Capacity: 220 kW
- Corresponding power consumption by the Crusher drive: 118 kW

After Modification

- Lime stone Primary Crusher Main Motor Capacity: 165 kW

RESULTS

Financial benefits

- Investment: US\$ 2,326 or Rs. 100,000
- Annual cost savings: US\$ 2,354 (Rs. 101,209 = 27820 kWh X Rs.3.71/kWh)
- Payback period: less than one year
- 1 US\$ = 43 Rs

Environmental benefits

- Annual electricity savings: 27280 kWh (8 kW/hr X 3410 hrs/yr)
- Annual GHG reduction: 24 tons of CO₂ (= 27820 kWh/yr X 0.000893 tons of CO₂/kWh)

FOR MORE INFORMATION

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