100TH PFEIFFER MILL FOR INDIA

Demand for high-efficiency mills has not let up!

// When Shree Cement Ltd., Kolkata/India, orders a new mill from Gebr. Pfeiffer, external reference plants are actually superfluous, because the enterprise has almost two dozen Pfeiffer mills in operation.
The new grinding plant in Bihar is the 100th mill that Pfeiffer supplied to India and one of the most powerful vertical roller mills across the globe, considering its installed drive power of 6700 kW.
Regarded as the state of the art, the innovative concept of active redundancy of this mill type is distinguished by the use of up to six grinding rollers, which is the basis for continuous operation.

Task: Flexible grinding technology for a wide variety of products

Shree Cement, Kolkata, had clear ideas about the Pfeiffer vertical mill it was going to buy: A good price/performance ratio and low energy consumption. It was equally important for the cement producer that the material could be ground, dried and classified in one step, in one mill. The planned grinding plant is capable of producing both OPC and ground granulated blast-furnace slag. It can also be used to grind mixed cement with granulated blast-furnace slag in batch operation. In addition, the mill allows the production of other cement types and cement qualities on an as-needed basis. As the extenders vary considerably, the grinding plant must be designed flexibly.

Project planning and engineering: Indian Pfeiffer subsidiary provides local support

When it came to grinding cement, ball mills were primarily used until the purchase of the MVR vertical roller mill. Especially low energy consumption and the option of a quick product change-over were among the main reasons behind the decision to invest. The customer only bought the mill for this project while all engineering works were performed by himself, with Pfeiffer's Indian subsidiary in support. The installed drive power of the mill is 6700 kW.
For the various cement mixes either granulated blast-furnace slag, a waste product from foundries, or fly ash, a waste product from coal power stations, is added to the clinker. The percentage not consisting of clinker in the finished cement accounts for as much as 30 %.
Due to the fly ash being very fine when delivered, it is fed to the mill at the very top so that it need not pass through the entire process. Moreover, the works has equipment to handle dusty materials such as fly ash, which cannot be transported on open belt conveyors.

Where frequent changes from one product to the other may be required, the favourable control behavior of a vertical mill is of great benefit in everyday operation. To achieve various fineness degrees, it is sufficient to adjust the classifier speed. However, the air volume passing through the mill also has an impact on the product fineness, because a stronger suction allows coarser material to be conveyed. All required parameters can be determined already at an early stage after grinding tests have been carried out at Pfeiffer's test station. The use of a MultiDrive® would have positively influenced both the plant's flexibility and the reliability.

The vertical mill, an MVR 6000 C-6, incorporates the latest technological innovations, marked by the active redundancy. The mill can be operated with a variable number of grinding rollers. One or two rollers – of a total of six rollers installed in Shree Cement's mill – can, for instance, be swung out for maintenance purposes. The mill remains in operation with the capacity of the mill being slightly reduced.

Result: Capacity well above target

The MVR mill was designed for a capacity of 300 t/h of OPC. Easier-to-grind cement mixes and Pfeiffer's in-built capacity result in capacities which are far above the guaranteed values. The mill plant is running successfully in 24/7 operation, flexibly processing a wide variety of feed materials. To be able to carry out planned maintenance works, calculation is based on 330 operating days a year.

If customer satisfaction is reflected in the number of mills sold, then surely Shree Cement is the best example. Since this MVR mill was commissioned, another thirteen mills have been ordered from Gebr. Pfeiffer.

Project data:

» Customer: Shree Cement Ltd, Kolkata/India
» Project: Upgrading
» Product: MVR mill
» Capacity: 300 t/h (OPC)
» Finished product: OPC, composite cements and ground granulated blast-furnace slag

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