



BIG IN CAMBODIA

Offering double active redundancy, the largest cement mill in Southeast Asia has been proving the performance and efficiency of the Pfeiffer MVR technology for over a year now

The client

The end customer CMIC - Chip Mong Insee Cement Corp. - is a joint venture consisting of INSEE Cement (member of SCCC - Siam City Cement Public Company Ltd.), Thailand and Chip Mong Group Ltd, Cambodia.

Chip Mong Insee Cement's production facility, namely Touk Meas Plant, is located in Kampot province, 125 km south of the capital Phnom Penh. Since the ground-breaking ceremony at the end of March 2016, CMIC has built a fully integrated cement plant there in just 20 months and has been supplying its first local cement product since October 2017.

Chip Mong Insee cement products are advanced quality cements for the retail and industrial sectors, all manufactured from carefully selected local raw mate-

rials with first-class quality and safety standards. As a responsible heavy industrial company, Chip Mong Insee Cement strives to manage the use of Cambodia's natural resources efficiently and to deploy its extensive and talented human capital in accordance with the best international safety standards. The company wants to make a difference by meeting the needs of today's customers and simultaneously considering the interests of future generations. The energy-efficient Pfeiffer mills used at the Touk Meas plant make a contribution here. They are used in the Cambodian plant in all three areas where mills are needed in a cement plant and were sold to Chip Mong Insee Cement via the Chinese general contractor CITIC Heavy Industries.



The grinding technology used in Cambodia

Originally, two cement mills operated in parallel were to be used to implement the project.

A rethinking towards the One-Mill Solution did not take place until after CMIC had dealt intensively and for a long time with the failure and availability evaluation of both concepts during the planning phase. In the overall view, the One-Mill-Solution was in the lead in the end and was also convincing due to its smaller space requirement and lower investment costs.

The operating cement mill of the type MVR 6000 C-6 used as a One-Mill-Solution is the most modern vertical mill worldwide and comes equipped with a fixed-speed MultiDrive® consisting of four drive units. This drive system with an installed power of 7,200 kW ensures a double redundant operation of the MVR mill and, compared with other drive solutions available on the market, achieves the highest level of reliability and availability. And this high reliability of the mill-drive combination was the main reason for choosing a Pfeiffer MVR mill with MultiDrive®. This choice was additionally underpinned by the low production costs over the long term and the enormous smoothness of this grinding technology. The high availability was also convincing, because the combined system enables grinding operation to continue not only when one grinding roller is swung out but also in case of a planned maintenance stop or an unplanned failure of a gear unit or a drive motor.

Already at the start of production and with the rotary kiln not yet optimized, the vertical mill produced cement of impeccable quality and after optimization up to 325 t/h OPC at over 3,800 Blaine. With further potential for increasing the production rate.

The challenge

The biggest challenge in this project was the short delivery and erection times for a fully integrated cement plant. In order to be able to complete such an ambitious large-scale project without delays, reliable and experienced suppliers are essential.

It is part of Gebr. Pfeiffer's day-to-day business to realize short installation and commissioning times on site. We achieve this through tight organization and coordination as well as with the help of experienced supervisors and commissioning engineers. In order to meet the ambitious deadlines of the Cambodian end customer, both erection and commissioning were carried out in shifts, which further shortened the const-

Besides cement grinding, a vertical mill MVR 5000 R-4 is also used for raw material grinding in Touk Meas.



Die Schulung des Betreiberpersonals beginnt bereits in der Inbetriebnahme-Phase

This mill reached the contractually guaranteed 400 t/h right from the start and, after optimization, grinds 453 t/h of the precrushed raw material reliably to a fineness of 12 % R 90 µm using a conventional gearbox. It has also been shown that there is further potential in the mill.

The coal used for the rotary kiln firing is also ground with a Pfeiffer vertical mill (type MPS 3350 BK). Due to its design, the MPS mill is ideally suited for inert operation. This is required by many customers, depending on the individual properties of the coal used. The reliable MPS mills from Gebr. Pfeiffer have proven themselves in the coal and pet coke grinding sector for decades, so that today more than 2000 Pfeiffer coal mills are in use worldwide. The coal mill also achieved the guaranteed performance data right from the start.

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In addition to the tight organization, Gebr. Pfeiffer, together with the Chinese general contractor and CMIC, also managed to comply with the most difficult process conditions. All three mills reached or exceeded the required performance data within a short time, with further potential for the future. And although the end customer's desired deadline for the first bag of cement in Cambodia was exceeded by 7 days at the end of the day, he was extremely satisfied with the performance of Gebr. Pfeiffer during the entire course of the project. Currently, the three Pfeiffer mills have been producing for CMIC in Southeast Asia for more than a year.

Performance data of the vertical mills

In order to express his satisfaction about the enormous smoothness of the cement mill and to illustrate this, an employee of the end customer sent us a self-recorded mobile phone video in which he placed a one-euro coin upright on the mill foundation while the cement mill

was in operation. When watching the video, one gets the impression that it is a picture, as the coin does not show any movement. The operation of the mill can only be recognized by the moving pull rods. We found this nice gesture of the end customer worth mentioning.



Cement mill MVR 6000 C-6 with MultiDrive®

» Material to be ground:	OPC	
» Throughput rate:	guarantee	300 tph
	achieved	325 tph
» Fineness:	guarantee	3500 cm ² /g
	achieved	3600 cm²/g
» Vibration:		0.6 mm/s



Raw meal mill MVR 5000 R-4

- » Material to be ground: Cement raw material
- » Throughput rate: guarantee 410 tph
 achieved 453 tph
- » Fineness: guarantee 15 % R 0.090 mm
 achieved 12.6 % R 0.090 mm
- » Vibration: **0.5 mm/s**

Coal mill MPS 3350 BK

- » Material to be ground: Lignite
- » Throughput rate: guarantee 45 tph
 achieved 48 tph
- » Fineness: guarantee 15 % R 0.090 mm
 achieved 14.8 % R 0.090 mm
- » Vibration: **0.2 mm/s**