



2011: Ramping up production

Holcim México -
Hermosillo, Mexico

“One of my main duties—and my daily motivation—as head of grinding technology sales for 25 years was to convince my Asian customers and others to adopt our FCB Horomill® technology. People would sometimes ask me what my ‘sales recipe’ was as a European supplier. Looking back, there were three key ingredients.

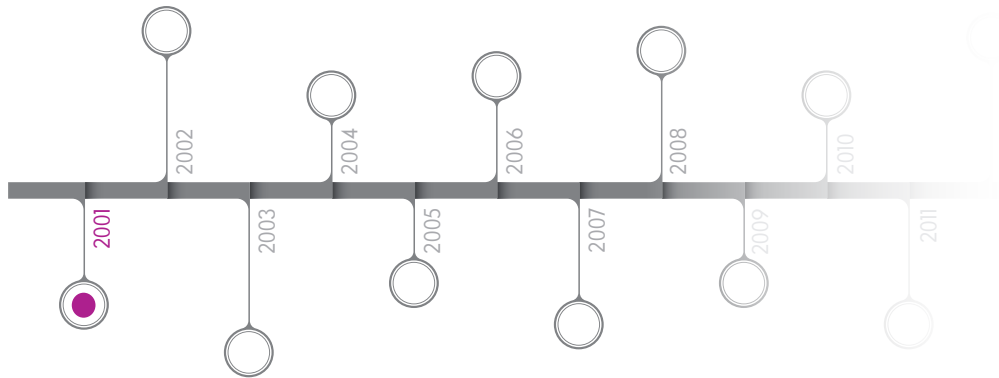
“First, it helped a lot that the FCB Horomill® was—and still is—particularly well adapted to the Asian market’s specific issues and targets: wet and fine feeding materials, high ambitions toward low clinker cement production, the lowest amount of electrical power installation and consumption, and ease of maintenance and operation. The emerging issue of CO2 moved these factors further to the top of the agenda.

“Second, I always got the support I needed, first from early FCB Horomill® end users, and later in Asia when our first mills began operation there. They offered fruitful technical site visits that demonstrated the outstanding production, quality performance data and maintenance experience of the FCB Horomill®, and openly shared and discussed these aspects of the solution.

“Last, but not least, these exchanges between producers proved to always be a key factor in convincing new customers to join the existing group of FCB Horomill® users to get the same performance on their sites.

“Again, looking back on these projects that I helped bring to fruition, I can proudly confirm that we delivered and generated trust in our customers. And what’s the best proof of that? The repeated orders we took, for instance in Mexico, the US, China, Vietnam and the Philippines.”

Didier Bourbon
Former VP Sales Asia, Fives FCB



2001-2011: RAMPING UP PRODUCTION

By the dawn of the 21st century, Fives knew that the FCB Horomill®'s technology was the significant breakthrough on the market. With successes in parts of Europe, North America and Asia, the energy efficiency savings provided by the FCB Horomill® compared with traditional ball mills and vertical mills were clear to customers.

But it was far from a household name within the cement industry, and Fives' team of engineers was still working on ways to improve its mechanical design and performance. From a mechanical perspective, these intensive efforts resulted in the single shoe bearing concept, the new sealing system, and the installation of shock absorbers. On the process side, they led to the FCB Aerodecantor and the very high fineness (THF) version of the FCB TSV™ Classifier.

By mid-decade of the 2000s, the team had found ways to make equipment simpler and even more reliable than it already was. While energy efficiency may have been its first selling point, customers were now reaping benefits like superior machine stability, ease of operation, and its ability to produce high-quality cement with less clinker.



Vinaconex -
Cam Pha, Vietnam

“A huge factor in the FCB Horomill®’s success has always been how it’s used in combination with the FCB TSV™ Classifier. Marrying these two solutions from the start, and later adding in the FCB Aerodecantor, we’ve been able to greatly lower the need for clinker.

This three-in-one system results in more efficiency than any other options.”

Yan Huerre
Commercial Director, Fives FCB

SERVING REPEAT CUSTOMERS...

Fives continued its burgeoning relationship with Buzzi Unicem in building a fully automated installation in Trino, Italy. This meant that operators could select all recipes needed for the day, then just push a button to ensure cement recipe transition (process adjustments and silo selection). And cement could now be produced—without operators’ physical presence—overnight and on weekends. Operators would simply receive a notification at home for any issues that might arise.

With such innovations and others, Fives sold six more raw and cement mills for new lines at Cementos Moctezuma’s Cerritos site in Mexico. And French producer Vicat’s Turkish subsidiary Konya Cement made a repeat order, going live with its second FCB Horomill® in 2007.

...AND WINNING NEW ONES

The decade was one of continuous improvement, resulting in several firsts for the FCB Horomill® (see 2001-2011 timeline,

adjacent page). With each new advance, new customers entered the fold. In 2006, Mexican cement giant Cemex showed faith in the still relatively new technology, ordering an FCB Horomill® 3800 for its Bayano facility in Panama during an expansion of the Canal. This required a huge quantity of cement, with no time for delays. Fives was able to offer an unbeatable delivery time compared to traditional mills and to execute the project on a turnkey basis in only 17 months. In addition, the high stability of the FCB Horomill® enabled stable and reliable grinding of clinker, even when it contained fine particles—which other technologies could not handle as well.

This period also saw sale of twin mills to Vinaconex in Vietnam, as well as to Vinaincon for its Thai Nguyen plant (see Success Story: Vietnam, p. 26). Meanwhile in China, the FCB Horomill® ushered a breakthrough for the grinding of steel slag (oxygen converter slag) with two twin mills starting up for Rizhao Jinghua. The Chinese producer selected the technology for its low power consumption, efficient iron particle separation, and comparably very low equipment wear.

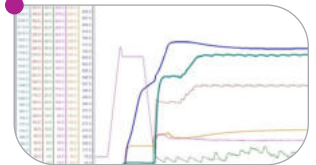
2002

Fives sells a first complete plant including including the FCB Horomill® for cement grinding to Holcim Costa Rica



2004

First completely automatic plant start occurs at Buzzi Unicem's Trino (Italy) facility



2005

Vicat orders its second FCB Horomill® for its Turkish subsidiary Konya Cement



2006

Cemex Panama orders an FCB Horomill® grinding mill for its plant in Bayano

Fives' first twin mills for Vinaconex start up at its Vietnam facilities (see [Success Story: Vietnam, p. 26](#))

2007

Rizhao Jinghua orders 2 sets of FCB Horomill® twins for its steel slag production in Rizhao (China), the first application for steel slag grinding



2008

Vinaincon starts up twin FCB Horomill® mills for its Thai Nguyen plant (see [Success Story: Vietnam, p. 26](#))

Holcim affiliate Holcim México orders triplets: 3 FCB Horomill® grinding mills for its Hermosillo (Mexico) 3,500 tpd facility, each producing 100 tph with zero water consumption (see [Success Story: Holcim México, p. 27](#))





SUCCESS STORY VIETNAM

Vinaincon's Thai Nguyen and Vinaconex's Cam Pha grinding plants • Vietnam



Challenge: State-owned construction company Vinaincon was looking to build a new cement plant, near Thai Nguyen in northern Vietnam. Vinaincon needed two cement grinding mills to achieve the intended capacity for this greenfield cement plant.

Meanwhile, Vinaconex needed to boost its Cam Pha Cement company production capacity to 1.8 million tpy. In this framework, Vinaconex decided to build a new separate grinding plant in the south, near Ho Chi Minh City. Both needed a trusted partner and proven leader in the cement industry who could scale up a solution combining low footprint with reduced Total Cost of Ownership (TCO).

Response: Fives came up with an innovative concept to meet these needs. It developed a first-of-its-kind twin mill concept: two FCB Horomill® machines using a common gas and selection circuit, with one FCB TSV™ Classifier 6500 HF and one filter, along with one feeding system.

Result: The compact structure of the twin FCB Horomill® system enabled a reduction in investment costs for both companies compared to standalone workshops. It also provided high flexibility in terms of production and maintenance. The system further reduced investment cost by requiring a minimum of spare parts. On each of the sites, the two customers achieved production capacity of over 240 tph.

Added value: When one of the twin mills needed to undergo maintenance, the other could still be used, preserving the same high level of product quality.

“Our main plant at Cam Pha wasn’t yet in operation at the time of commissioning, so we had to import foreign clinker for the performance tests. Despite the variations in clinker quality, the FCB Horomill® performed great. It achieved the numbers we needed in terms of production rate, cement quality and energy consumption.”

Lê Quang Uyên Phương
Director, Southern Branch - Cam Pha cement JSC

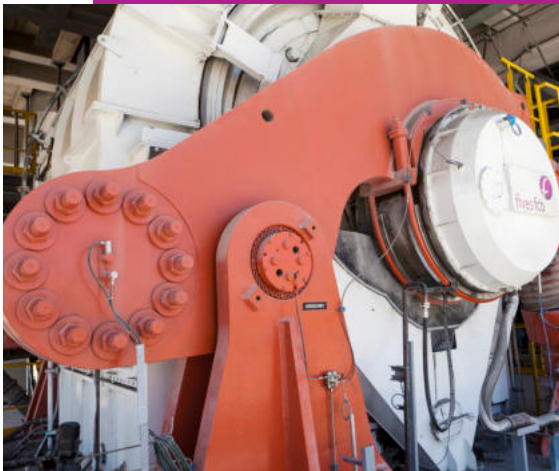
“Our Hermosillo site required a grinding solution that would meet criteria specific to the harsh local environment. The FCB Horomill® was our choice because we knew it could achieve a high level of fineness in desert-like conditions. In addition, the fact that we could source a significant amount of the plant equipment from one supplier made Fives’ technology the right option.”

José Gama
Plant Director, Holcim México



SUCCESS STORY HOLCIM MÉXICO

Hermosillo plant • Sonora, Mexico



Challenge: Following Fives’ successful installation of a 3,000 tpd complete, turnkey plant to Holcim Group’s plant at Cartago (Costa Rica), Holcim called on Fives for its affiliate’s new project near Hermosillo (Mexico). The 3,500 tpd greenfield cement plant was being built in an area marked by significant water scarcity.

Response: For the cement grinding section, Fives built not one but three FCB Horomill® 3800 mills in an integrated, compact building. Along with the cement mills, Fives supplied an FCB Off-Line Precaliner and an FCB Rotary Kiln to produce high-quality clinker for the mills with low thermal energy consumption—using alternative fuel—and low NOx emissions.

Result: The unprecedented “triplet” installation of FCB Horomill® grinding mills saw each achieve up to 100 tph production capacity of very high-quality cement. The triplet solution’s grinding process was especially adapted to the desert-like conditions in which the plant was situated and could handle a wide variety of additive materials to reduce clinker content.

Added value: Leveraging the experience and technological knowhow of the entire Fives Group, the project incorporated Fives’ Pillard ROTAFLAM® multichannel burners and Fives Solios TGT® technology for common kiln, raw mill and cooler gas filtering.