



Customer  
Success  
Story

We pioneer motion

## Vibrating screen monitored safely & easily

Early detection of bearing damage prevented unplanned failure and costly downtime

Construction materials manufacturer Holcim was seeking a condition monitoring solution for the vibrating screens in its cement plant in Hermosillo, Mexico. Specifically, Holcim wanted a solution that would more effectively predict and prevent catastrophic bearing failures. The company chose SmartCheck, Schaeffler's permanent predictive monitoring system. Shortly after SmartCheck was installed, the system detected an impending bearing failure at an early stage.

**Annual savings: more than 43,000 US dollars.**

### Customer benefits

- Improved availability of the vibrating screens
- Fewer catastrophic bearing failures
- Longer Mean Time Between Repairs (MTBR)
- Lower maintenance costs
- Easy to operate



### Customer

Holcim, Hermosillo plant,  
Mexico

### Sector

Cement/Raw Materials

### Application

Vibrating Screens

### Solution

Condition Monitoring

# What drives our customer ...



Vibrating screen

## Challenge

In the past, the Hermosillo cement plant's maintenance department would take monthly vibration readings on its vibrating screens during plant inspections. Even though regular measurements were taken, the plant experienced three catastrophic bearing failures in its vibrating screens - in just one year! Unfortunately, the plant's monthly readings were momentary measurements that were not sufficient to detect the degradation of the bearings. To better monitor the vibrating screens - which are considered particularly critical due to the strong vibrations and their sensitive excitation mechanism - the Hermosillo cement plant's maintenance team sought out a new monitoring solution that would detect bearing degradation at an early stage in order to prevent unplanned downtime. To that end, they approached Schaeffler Mexico with this request.

### Technical information - vibrating screen

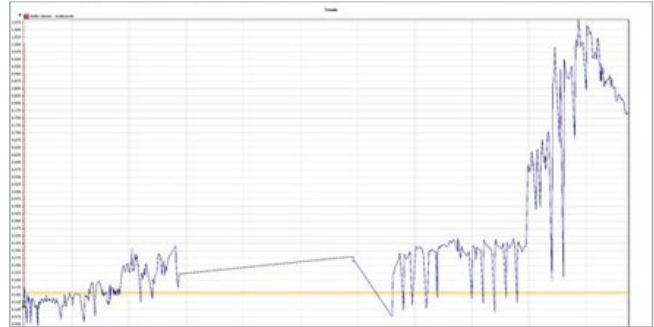
Type	Metso
Rotation speed	700 rpm
Temperature	60°C
Bearing	22328

# What Schaeffler has to offer ...

## Solution

Schaeffler Mexico recommended its SmartCheck permanent condition monitoring solution, a robust online monitoring system that detects abnormalities and changes in vibration behavior. The accompanying software identifies bearing damage early enough to prevent an unplanned shutdown.

Just two weeks after a SmartCheck had been commissioned on each of the vibrating screen's two bearing housings, abnormalities were detected on one bearing. The bearing's condition had deteriorated significantly over a six-week period, which can be seen in the acceleration trend diagram at right. With this knowledge, the damaged bearing could be replaced during a scheduled plant shutdown.



Acceleration trend diagram of 22328 Inner Race shows defect frequency. TWF shows 9.5 g pk-pk



## What's special

Without early detection of the bearing damage, other components could have been damaged. As a result, Holcim's maintenance team is more than satisfied with the SmartCheck solution. They also appreciate the easy-to-use Schaeffler software, which does not require expert knowledge in vibration analysis.

### Technical information for SmartCheck

Monitoring system	2 Schaeffler SmartChecks
Data exchange	via OPC/UA
Monitored units	Vibrating screen bearing
Monitored operating parameters	Vibration, temperature, speed
Method of diagnosis	Speed, acceleration and envelope
Status display	Visualization in customer's control room



Bearing defect in the inner race



SmartCheck installed on the bearing housing

# What our customer saves and says ...

(Cost-)Factors	Without Monitoring	With Monitoring	Savings
Downtime	72 hr	48 hr	24 hr
Downtime costs (1 hour = 1,340 \$)	96,480 \$	64,320 \$	32,160 \$
Repair cost*	15,500 \$	4,500 \$	11,000 \$

## SAVINGS 43,160 \$

(One-time \$5,500 acquisition cost must be deducted from the above amount.)

This corresponds to an ROI of: **685 %**

\* Early detection: (Bearings only, planned, no overtime, etc)  
Asset to Failure: (Bearings, shaft, gears, expedited parts, overtime)

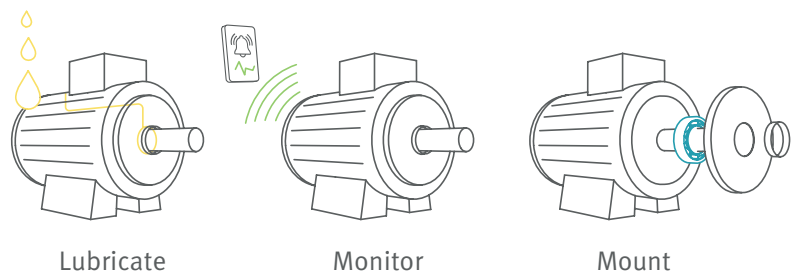
SmartCheck helps us monitor the vibrating screens, saves repair costs, and drastically reduces unplanned downtime. SmartCheck's data is easily accessed and we are always informed about the machine's status.

SmartCheck inspires me!

Alan Pacheco  
Maintenance Manager, Holcim Mexico

SmartCheck is part of the Schaeffler Lifetime Solutions portfolio, which offers a comprehensive range of products, services and solutions for industrial maintenance. It is designed to support maintenance engineers throughout a machine's entire lifetime.

[www.schaeffler.de/en/lifetime-solutions](http://www.schaeffler.de/en/lifetime-solutions)



## Customer

Holcim is a global leader in innovative and sustainable building materials. Around 70,000 employees work in its four business lines - cement, ready-mixed concrete, aggregates, and solutions & products. The company makes construction sustainable with its decarbonization concept.

With its 3,200 employees, Holcim Mexico mainly produces and markets cement, ready-mixed concrete and aggregates. The company operates seven cement plants and one grinding plant with the capacity to produce 13.3 million tons of cement per year.

## Why Schaeffler?

- Technical expertise
- Friendly and knowledgeable customer service
- Quick and easy installation

## Why this specific solution?

- Precise machine condition data
- Easy, intuitive operation
- Much safer operating environment for personnel and machinery