



Customer  
Success  
Story

We pioneer motion

## Predictive maintenance solution prevents expensive fan downtime

For the comprehensive condition monitoring of its machines, the Polish cement plant Chetm of CEMEX, the world's leading manufacturer of building materials, uses the wireless condition monitoring solution OPTIME (CM). A few months after the installation of the solution, a warning message was displayed in the OPTIME app on one of the large fans. Thanks to this warning the maintenance team was able to react quickly and avoid an unplanned downtime.

### Customer benefits

- Condition monitoring in real time via OPTIME App
- Quick and easy installation of OPTIME CM components
- Data is easy to read and understand – no expert knowledge required
- Improved safety for employees – wireless sensors eliminate the need to access hard-to-reach machinery
- Cost-effective solution for comprehensive machine monitoring
- Permits long-term planning of maintenance measures, personnel requirements and spare parts procurement
- Less unplanned downtime



### Customer

CEMEX Polska Sp. z o.o.,  
plant Chetm

### Sector

Cement

### Application

Motors, pumps, fans,  
gearboxes

### Solution

Condition Monitoring

# What drives our customer ...



Additives are obtained from land-based sources or by excavating marine sediments. When combined with cement and water, concrete or mortar is obtained.

## Challenge

Motors, gears, pumps and fans are some of the critical units in a cement production plant. If these units unexpectedly fail, the maintenance department has to expect significant costs. Reasons for the failures can be caused, for example, by imbalance, heavy contamination, incorrect lubrication of the bearings or aging. Therefore, the maintenance department was looking for a monitoring solution that would allow the possible reasons to be detected at an early stage and avoid unplanned downtimes.

Jacek Roman, maintenance manager at the Polish plant in Chełm, specifies his needs as follows:

**On the one hand, we need a monitoring solution that gives us a comprehensive overview of the machines. On the other hand, the new solution should ensure more safety for the employees. After all, the auxiliary units are often very difficult to access and can thus easily result in accidents.**



### Technical information on the fan

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Type	Large radial fan Application: exhauster
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### Motor of the fan

Speed	992 rpm
Power	2250 kw

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# What Schaeffler has to offer ...



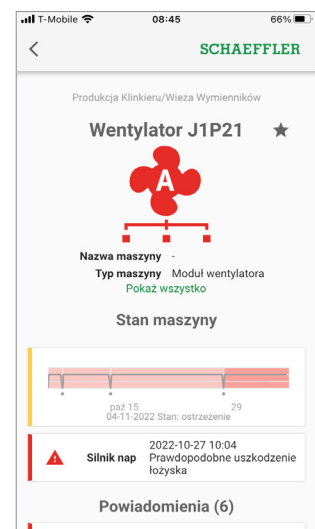
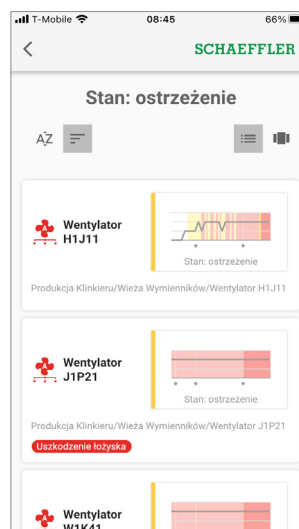
## Solution

The experts at Schaeffler recommended their award-winning OPTIME condition monitoring solution. This scalable system consists of wireless sensors, a cellular gateway and digital services that are based on proprietary Schaeffler algorithms.

100 OPTIME sensors have been installed to monitor pumps, fans, gearboxes and motors at the first stage. With this solution most of the machines are monitored on a continuous basis.

A few months after installation, a warning message was displayed on fan J1P21 in the OPTIME app. This main exhaust fan is a strategic machine for the clinker production process area. The Cemex maintenance team confirmed the error message after an inspection.

An imbalance and bearing damage probably caused an increase in the vibration level. The problem was preliminarily fixed by the maintenance team and an unplanned shut-down was avoided. The machine is still under control and corrective action is planned for the next main shutdown.



The status of fan J1P21 changed from „normal“ to „warning“.\*

### \*Warning level

- 1 = Normal
- 2 = Suspect
- 3 = Warning
- 4 = Severe

# What Schaeffler has to offer ...

## How OPTIME CM works

OPTIME's CM sensors monitor the machinery and equipment at the customer's site. The gateway receives the data from the sensors and transfers them to the Schaeffler cloud. OPTIME CM automatically detects problems, issues the appropriate alarms, and provides information about the possible cause of the problem. Expert condition monitoring knowledge on the part of the customer is not required as it is already fully integrated into OPTIME CM in the form of Schaeffler know-how. OPTIME CM essentially provides customers with an expert analysis that has been integrated into the Digital Services.



Schaeffler OPTIME CM wins the Red Dot Award 2021 in two categories

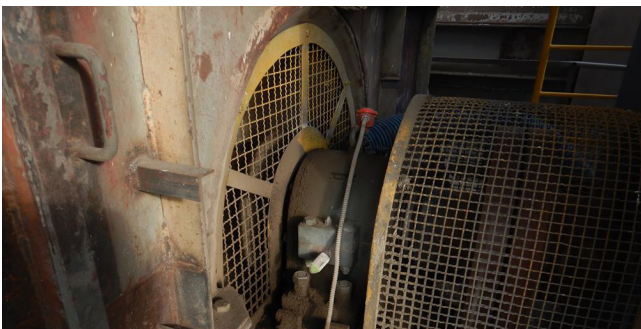
### Information on OPTIME CM Sensor 3/5

Vibration bandwidth	OPTIME-3: 2 Hz – 3 kHz OPTIME-5: 2 Hz – 5 kHz
Calculated parameters	7
Sensor commissioning	NFC (Near Field Communication)
Communication	Wirepas Mesh (2.4GHz ISM Band)
Measurement cycle	Parameters: every 4 h Time waveform: every 24 h

## What's special

The maintenance department at the Chelm plant in Poland has trusted Schaeffler condition monitoring solutions for years. They started out with SmartCheck, a monitoring solution for individual production-critical machines. OPTIME CM has now been implemented for comprehensive monitoring. For monitoring of the large Symetro gearbox of the cement mill and the main drive of the kiln and dryer crusher, the plant's

maintenance department uses the ProLink CMS. This is a multi-channel condition monitoring system. It is preferably used for machines with variable operating conditions and harsh ambient conditions such as surface temperatures of more than 70 °C. Another ProLink CMS will soon be installed to monitor other Symetro gearboxes.



OPTIME CM sensors on a driven side of the fan



OPTIME CM sensors on a non-driven side of the fan

# What our customer says ...

**We have been using condition monitoring solutions by Schaeffler for years. Each solution provides us with the protection we need for our machines. With OPTIME CM we are able to implement comprehensive monitoring in our plant in the future. The ProLink CMS monitoring solution is ideal for our critical gears on the cement mills, kiln and dry breakers. We are completely satisfied with Schaeffler Lifetime Solutions and Service.**

**Jacek Roman, Maintenance Manager, Poland Chelm**

## Why Schaeffler?

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

## Why this specific solution?

- Precise machine condition data
- Easy, intuitive operation
- Automated learning mode

## Customer

With 63 cement plants, 1351 concrete plants and 253 mining plants, Cemex is one of the leading manufacturers of building materials. The core manufacturing activities are cement, ready-mixed concrete, additives and urbanisation solutions. Founded in 1906, the construction company employs around 46,000 people today (2022).

Sustainability is one of the most important pillars of the corporate strategy and an integral part of the business activities of CEMEX.



OPTIME CM 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)

