

## CASE STUDY

# Detect and localize leaks in cement manufacturing



Air leaks detected in a cement plant with the ii900 Sonic Industrial Imager.

Cement manufacturing process involves several phases where the process temperature needs to reach up to 2000 °C. These high temperatures result in equipment deformation, making it very likely for leaks to appear in various locations. These leaks decrease process temperature, which in turn increase coal or gas consumption to compensate for the temperature drop.

### Location

Maintenance of cement plants

### User/department

- Maintenance Managers
- Energy Managers

### Application

- Vacuum in calcination
- Dust removal filters
- Flange connections
- Pneumatic actuators
- Packaging process

## Today's practice

During the calcination phase, vacuum is extremely critical. Avoiding leaks in that stage is one of the most important focus areas. Identifying those leaks might be a challenging task due to the big distances and harsh process conditions such as high temperatures and dusty environments. Compressed air is widely used in cement industry from instrument air in the beginning of production until the final packaging phase. Leaks are mostly found in dust removal filters, fans, connection points and valves used in the process.

## Our solution

Fluke ii900 Sonic Industrial Imager enables maintenance teams to increase efficiency, safety and quality while reducing energy costs. The user-friendly interface helps the team to start detecting leaks without any further training. Once a leak is found, it can be documented using acoustic and visual images, making leak identification and reporting more intuitive than ever for the maintenance teams. The imager's Leak Quantification feature also enables the team to better estimate losses and prioritize repair based on ROI.

### Why use the Fluke ii900 Sonic Industrial Imager?

- Ease-of-use
- Quick detection from the distance
- Reliable operation in noisy environment
- Increased efficiency
- Report generation capabilities
- Time saving benefits



We asked a maintenance leader from a cement factory:

### "Why did you choose the Fluke ii900?"

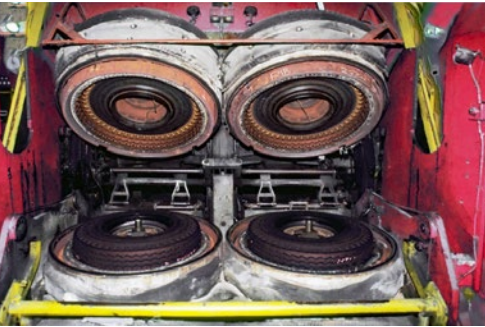
*"We were already aware of the leaks in our process but because of the high temperature and distance, we were not able to locate them. The ii900 helped us to easily pinpoint the leaks and visually see them."*

*"Reporting is extremely important for us. Documenting the exact leak locations and the ability to calculate ROI easily helps us get approval for the required investments from our top management."*

*"We already found over 100 leaks in our production facilities through our inspections with the ii900. We can easily improve energy efficiency by just fixing those leaks."*

## CASE STUDY

# Detect and visualize leaks in a tire manufacturing process



Tire molding machine.  
Encik Tekateki/ CC-BY-SA-4.0

Nitrogen, steam and compressed air are widely used in the tire manufacturing process. In the curing phase, steam is used to implement 8 bar pressure to liquify rubber compounds—and nitrogen is used for applying 24 bar pressure to shape the tire. If predefined pressure cannot be applied, the tire cannot pass the quality checks and is separated as waste. Beside the production losses, recycling the waste tire is also another source of additional cost.

### Location

Maintenance in tire manufacturing

### User/department

- Maintenance managers
- Energy managers

### Application

- Steam and nitrogen usage in curing process
- Leaks in molding machinery due to high temperatures

### Why use the Fluke ii900 Sonic Industrial Imager?

- Ease-of-use
- Visual localization of leaks
- Quick detection from the distance
- Time saving benefits
- Reliable operation in noisy environment
- Improved process control, less recycling
- Increased efficiency
- Leak quantification
- Easy documentation



## Today's practice

Identifying the leaks is a big challenge as the process leads to too much noise. Also, due to safety reasons, the machines are located behind fences, making it difficult to reach all the piping and detect the leaks. Spotting the correct location of the leak is therefore extremely time consuming. Finally, because of the high temperature, the process equipment deforms, which then causes further leaks.

## Our solution

The Fluke ii900 Sonic Industrial Imager enables maintenance teams to improve process control, increase energy efficiency and reduce costs by detecting N<sub>2</sub>, steam and compressed air leaks. The ii900 helps to easily and visually detect leaks in noisy environments. Leak quantification feature simplifies the estimation of losses and helps prioritize repair actions based on ROI.

We asked a maintenance engineer from a tire manufacturing plant: **"Why did you choose the Fluke ii900?"**

*"We were looking for a tool to easily detect the leaks and visually see the location as this is a pain point for us. We are glad that Fluke came up with a solution, which is beyond our expectations."*

*"Safety is our priority, we are working in harsh environments—steam and high pressure is being used in various sections. Detecting the leaks easily and visually from the distance is a major advantage."*

*"The ii900 helped us perform preventive maintenance, we are able to reduce downtime by detecting the problems in advance."*