

Lime Supplier Eliminates Need for Costly Manual Silo Level Testing with Rosemount 5408

Results

- Reliable and accurate measurement of hydrated lime powder
- No need for hazardous manual level testing
- ROI realized after 5 months of use



Application

Emerson Rosemount™ 5408 Non-Contacting Radar Level Transmitter with cone antenna and air purging adaptor installed in a hydrated lime powder storage silo.

Customer

A global supplier of lime, limestone, and clay products

Challenge

The company has a storage silo hydrated lime as end product. Hydrated lime is a fine dry powder that flows similar to a liquid. Whenever the silo is filled, the lime powder creates an internal dust cloud similar to a blinding snowstorm. The material is warm, with a slight static charge that makes it cling to surfaces. If the lime comes into contact with any moisture, it tends to form a hard, crusty layer that can be difficult to remove. Since the hydrated lime is a finished product, accurate inventory measurements are important as the product accumulates in the silos and is removed for sale. To perform level measurements, the company had been using non-contacting radar technology, but with marginal results. Initially, measurements seemed to be correct, but the readings would eventually start to drift. The existing radar used a PTFE cap attached to the antenna to help reduce buildup. However, buildup still occurred, and the resulting readings became unstable, requiring the units to be cleaned. This required a maintenance engineer with the appropriate tools to climb over 200 steps to the top of the silo, remove the unit to clean the antenna. This occurred every two or three days and was not only time-consuming, but also hazardous, especially during inclement weather.

Solution

The process inlet for the radar was a 6" nozzle, which was too narrow for a parabolic antenna. The combination of silo height and low dielectric properties of the hydrated lime exceeded the range limits of a process seal antenna. Therefore, the Emerson Rosemount 5408 Non-Contact Radar Level Transmitter with a standard cone antenna and a flushing connection for an air purge was recommended.



Rosemount 5408 Non-Contacting Radar Level Transmitter

The return on investment for the Customer was less than 5 months for this new solution. Previously, each trip was a safety concern and took personnel away from other maintenance tasks. To date, no cleaning of the antenna has been needed for over a year. The radar has also replaced daily hand dips of the inventory. By implementing this more reliable measurement device, the automation system measurements are verified with the manual measurements required in the monthly audits and the company is able to reconcile inventory mass balances.

Resources

Emerson Automation Solutions Industries

[Emerson.com/Chemical](https://www.emerson.com/Chemical)

Rosemount 5408 Non-Contacting Radar Level Transmitter

[Emerson.com/Rosemount5408](https://www.emerson.com/Rosemount5408)

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