

Improved Level Measurement in a Small Cement Powder Silo

RESULTS

- Improved accuracy and reliability of tank level readings
- Eliminated maintenance of measurement devices
- Accurately measured level in a dusty environment with an inclined probe



APPLICATION

Small cement powder silo

Application Characteristics: 5.9 ft. (1.8 m) high silo; powder, dusty vapor space.

CUSTOMER

Cement Plant

CHALLENGE

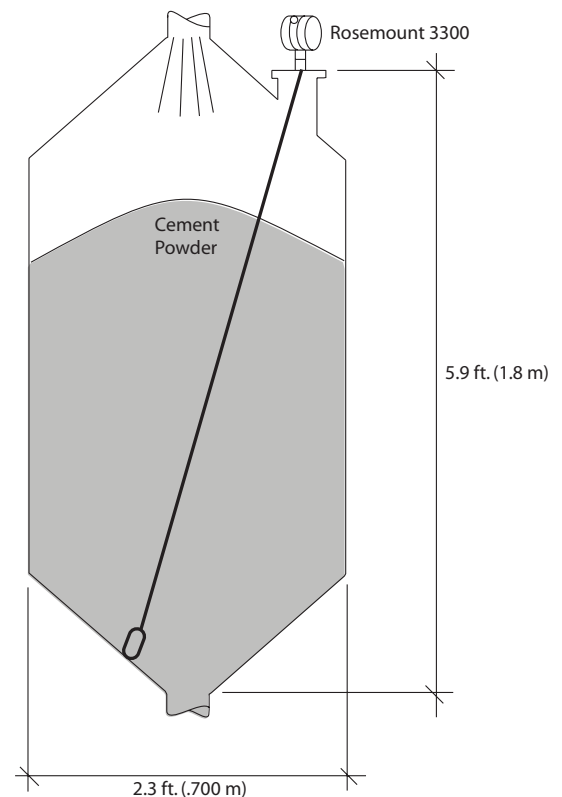
A cement manufacturer had not been able to successfully measure the level of their small cement powder silos. The application previously used an echo depth sounder to measure level of the solid cement powder in the silo, but the dusty vapor space within the tank caused unreliable measurements. Cement produces large amounts of dust during emptying and filling which makes it difficult to use traditional level gauges and ultrasonic technology.

Other challenges that affected the measurement are the cement's low dielectric properties and the inclination angle of the cement powder surface.

SOLUTION

The Rosemount 3301 transmitter was installed with a DN150 (6") flange in an opening at the top of the silo. A flexible single probe connected to the tank bottom was installed into the silo. To compensate for the resulting attachment angle, a mounting angle parameter was defined in the Radar Configuration Tools software. The transmitter compensates for this angle and reports the vertical level, not the rise up the probe.

The dusty environment and a low dielectric did not affect the measurement quality of the Rosemount 3300. The level transmitter delivers accurate and reliable level readings, solving the customer's previous measurement problems.



The Rosemount 3300 requires no regular maintenance, resulting in a labor cost savings. The extra maintenance involved with the previous technology was eliminated, resulting in further labor cost savings. Installation and initial setup was also simplified with the user-friendly interface of the Radar Configuration Tools software. With a reliable level measurement, plant efficiency and productivity has increased.

RESOURCES

Rosemount 3300

<http://www.emersonprocess.com/rosemount/products/level/m3300.html>

Rosemount Technical Note - Guided Wave Radar in Solid Level Applications

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