



## APPLICATION REPORT Minerals & Mining

### Level measurement of talcum powder

- Improved storage for the processing of talcum
- 80 GHz radar level measurement of dusty, low reflective product
- Non-contact measurement for reduced maintenance costs and increased product quality



#### 1. Background

IMERYS is a French multinational mining company that specialises in the production of special minerals. It produces mineral components (including clays, fire clay, kaolin), functional additives as well as finished products (bricks, slate etc.) for the building and other industries.

The company runs 270 sites in more than 50 countries, 47 of those sites are in France. The Luzenac site in Ariège, France specialises in the extraction, processing and sale of talcum (talcum powder). It covers 15% of the global demand and is the largest active talcum mine in the world.



Talcum powder silos

#### 2. Measurement requirements

The talcum is refined, packaged and loaded on site. For this reason, the customer requires continuous level measurement of the stored amount of coarse talcum powder. A long-standing customer of KROHNE, IMERYS had previously used the OPTIFLEX 1300, a level transmitter with guided radar (TDR), for this measuring point.

To decrease maintenance requirements even further, the customer decided to use a level transmitter that measures without contact. It should be able to measure down to the floor of the silo and up to the top of the 18 m / 59 ft high storage silos without any blocking distance.

**KROHNE**

## 3. KROHNE solution

KROHNE recommended using the OPTIWAVE 6500. The 80 GHz FMCW radar level transmitter is ideal for applications with powders in dusty atmospheres. Thanks to its small beam angle, the radar is designed for the non-contact level measurement in tall, narrow silos which can also be reinforced with metal.

The radar device was installed with PEEK lens antenna (DN40) and G1½ process connections in a total of eight vertical cylindrical silos. A slanted flange supplied by KROHNE was also used. This made it possible to align the radar lobe to measure across the entire usable filling height down to the deepest point of the funnel-shaped silo.

The 80 GHz radar was easy to install and calibrate and the previously used TDR devices were easy to replace. No additional mechanical changes to the measuring point were required for the customer.



OPTIWAVE 6500 level transmitter on the storage silo

## 4. Customer benefits

KROHNE's 80 GHz radar makes it possible for the customer to measure this difficult, minimally reflective medium. Unlike level transmitters with guided radar whose cable probe must be attached to the bottom of the silo, the non-contact FMCW radar can be installed with minimal effort.

The free-space radar level transmitter has proven itself as an alternative to the TDR radar in this application. The flush-mounted PEEK lens antenna does not protrude into the silo, making it possible to measure without dead zones. There is thus no contact with the product. The customer benefits from increased product safety as there is no metal abrasion caused by talcum deposits on the cable probes.



Level measurement of talcum powder

## 5. Product used

### OPTIWAVE 6500

- FMCW radar level transmitter for continuous, non-contact level measurement in tall and narrow silos, hoppers or containers
- Extremely high dynamics for accurate measurements despite dusty atmospheres or low reflective media
- 80 GHz radar, Lens antenna
- Measuring range: 0...100 m / 328 ft



### Contact

Would you like further information about these or other applications?  
Do you require technical advice for your application?  
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