

# Solutions for the building materials industry

## Level measurement of silos on construction sites



### The Customer

Profibaustoffe Austria GmbH is one of the leading companies of the Austrian building materials industry. The company develops, produces and markets building material systems for walls, floors, facades, gardens, road constructions and lime for industrial applications and for agriculture. The consistent improvement of existing products and services as well as ongoing new developments of specialized and high-quality product systems are an integral part of the company's corporate philosophy. The company also places very high priority on environmentally friendly production. The principles of the company management are orientated around economical and ecological goals. Therefore, forward-looking resource protection, minimisation of energy and emissions as well as optimisation of the use of raw materials and fuel are important aspects during production.



Headquarters of Profibaustoffe Austria GmbH



Sensor on silos: Level sensor Micropilot FWR30 (battery-powered)

**The challenge** Planning the material requirements of a construction site is often still a manually controlled process. This ordering process is based on telephone calls and the experience of employees. Accordingly, the process is significantly influenced by factors such as illness, holidays, temperature and the tendency to place orders too early or too late. The consequences can be a lack of product availability, high storage costs or inefficient operational processes.

**Our solution** Our solution for Profibaustoffe Austria GmbH is the completely automated recording, visualization and provision of all relevant parameters on the construction site and at the distribution site. This ensures that everyone involved in the supply chain can access the information they need in a precise and uniform manner and act accordingly. In this way it can be ensured that every delivery is made „just-in-time“ and that missed trips

or late deliveries are avoided. As a result, the efficiency of operational processes increases and avoidable costs can be saved.

The first step is the precise measurement of all relevant parameters inside the silo. A battery-operated IIoT-enabled level sensor (80 GHz radar) provides information about the exact fill level inside the silo. In addition to considering the behaviour of the bulk material, the measuring device has additional sensors for:

- Measurement of the ambient temperature to ensure the integrity of the product quality
- Measurement of the angle of inclination in order to be able to draw conclusions about the time of transport and installation
- GPS position detection
- Monitoring of the battery status

The second step is the user-friendly visualization of the measured parameters. In combination with a web-based inventory management software, the level measurement offers full transparency across all steps of the supply chain of the Profibaustoffe Austria GmbH. From production to distribution to storage on site. Orders and subsequent deliveries can also be automated by automatically transmitting inventory data to other systems. This allows deliveries to be optimally planned and transmitted to the customer.

**Details of the solution** Similar to a tablet or mobile phone, the measurement data recorded by the radar is transmitted to a cloud via mobile communications and visualized via a browser-based user interface. The visualization of the data is supplemented by an integrated map view. Based on Google Maps the current positions of the individual silos are shown. For the exact calculation of the mass inside a silo, product-specific conversions can also be configured within the Software. The different behaviour of bulk materials when setting up, filling and emptying can be taken into account in the best possible way.

**Customer benefit** The cellular and battery-powered solution enables Profibaustoffe Austria GmbH to quickly and easily view the available quantity of materials at their customers' locations. Deliveries can be efficiently planned based on the data. Unnecessary journeys can be avoided, which not only reduces operating costs. In accordance with the corporate philosophy, it also reduces the carbon footprint of the Profibaustoffe Austria GmbH. The time of delivery and availability of the material on the construction site can be documented and thus verified based on the change in the angle of inclination. In addition, the quality of the stored materials can be ensured by continuous measurement of the ambient temperature. This offers customers decisive added value, with which the manufacturer can differentiate itself from its competitors on the market.



Digital service: SupplyCare Hosting SCH30



Exemplary representation of the position of individual silos



Micropilot FWR30

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