

## It's all in the mixture!

# Reliable and accurate moisture measurement in concrete mixing plant



With headquarters in the Swiss Canton of Valais, the Volken Group has been in operation since 1968 and currently employs around 500 employees at various sites. In addition to recycling facilities, landfill sites and gravel plants, Volken produces top-class, standardized and sustainable concrete in the concrete and pavement plant in Leukerfeld to name one location.

*„Thanks to Endress+Hauser's solution, we can now measure our material moisture with an accuracy of up to 0.3% live in the process. The values collected by the sensor have been verified multiple times in the laboratory using samples and we are more than impressed.“*

Tobias Zeiter  
Manager, Building Material  
Laboratory, Volken Group



Tobias Zeiter



Moisture measurement in bulk solids application

**The largest and most modern concrete and pavement plant of the Volken Group is located near the town of Leuk in Switzerland. Up to 50,000 m<sup>3</sup> of concrete are produced there annually. To avoid construction defects, the moisture content must be measured regularly, which is difficult in quantities below 1 m<sup>3</sup> in particular.**

**The challenge** of moisture, or the water content, affects the technical characteristics of the concrete. This means that, if it is too wet, shrinkage cracks can lead to defects. The bulk solids used in production have a varying residual moisture content. More or less water must be added depending on the moisture content of the raw material. This has proven to be a challenge with the probe used until now, particularly for quantities below a cubic meter. In addition, the sensor must be calibrated 4 times a year.

**Our solution** The Volken Group opted for Endress+Hauser's Solitrend MMP41 material moisture sensor.

This sensor is suitable for all free-flowing materials with a density of between 0.8 kg and 2.0 kg/dm<sup>3</sup> at a conductivity of up to 5 mS/cm. The sensor can reliably cover a moisture range of 0-100% at process conditions of up to 120 °C. Solitrend can be used to ensure consistently high quality in the production process, with reduced resource consumption.



### The benefits

- TDR measurement with guided wave radar enables accurate moisture measurement in the material flowing past the sensor
- High wear resistance
- High accuracy and reproducibility
- Low-maintenance
- Once-off calibration

The Solitrend MMP41 technology operates with guided wave radar in accordance with the time-domain reflectometry (TDR) method. A unique feature of the TDR technology is the high level of measuring stability as the sensor is not susceptible to changes in the measured value caused by natural wear and tear. Recalibration is therefore not necessary after initial commissioning. The sensor can be integrated into all common controllers using 0-20 mA, 4-20 mA or 10 V and measures 0-4 mm sand reliably and accurately.

**Installation** The sensor was installed using a baffle plate underneath the silo discharge hatch of the product to be measured. The material passing over it ensures that the sensor is self-cleaning. The advantage of this installation is also that the measurement of the sensor is limited to the material used for mixing. Old material attached to the silo wall is left on the outside.

#### ✓ Scope of delivery

##### ■ Solitrend MMP41-1380/0

Accessories:

- Remote display (in the cabinet) for easy commissioning of the sensor - up to 16 Solitrend sensors can be measured via a serial interface
- Baffle plate for installation below the silo discharge hatch
- Mounting clamp for installation on the baffle plate



Volken - Leukerfeld

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