



*The Erlus Baustoffwerke tile plant retrofitted its production lines with Milltronics belt scale systems to improve blending control.*

## Belt Scales Enhance Productivity, Quality

### Challenge

Erlus Baustoffwerke AG, located in Neufahrn, Germany, produces building materials for roofs and chimneys. The plant manufactures Germany's best-selling ceramic roof tiles as well as the first self-cleaning clay roof tile in the world.

Before tiles can be formed and fired in a kiln, it is important to define the right blend of raw materials, clay, and additives. Quality of the finished product depends on the correct ratio and homogeneity of the mixture. This requires precise control of material discharge feed rates of the mechanical feeders drawing from the charge bins. Material is transferred on belt conveyors, using belt scale rate signals to control the discharge rate. Additional belt scales are also used to control feed rates at the secondary mill and for simple rate detection.

### Solution

Recently, Erlus contracted with Elektro Kreuzpaintner, an engineering firm based in Dorfen, to create completely

automated production flow controls, so operators would only need to program the total batch size and use stored blending ratios. Kreuzpaintner selected the Milltronics® MSI belt scale system from Siemens. They replaced two existing belt scales and installed four new ones on the production lines.

The restricted space in a brickworks plant requires very short transfer conveyors, and it limits the possibilities for belt scale installation. The compact design of the Milltronics MSI belt scale, requiring only 23 cm in length, allows for minimum idler spacing so that a belt scale may accurately detect the rate even on short, troughed belts. This also allows for simple, quick, and cost-effective installation.

Since different material rates are required from the charge bin discharge feeders, depending on total batch size and feed rate, the respective throughputs vary greatly. Even for rates as low as 20% of total capacity, the MSI provides accurate and repeatable measurements that exceed requirements for homogenous blending.

The belt scales are connected to Milltronics BW 100 integrators that process the data and provide a local readout, an analog output, and outputs for remote totalization. The process control system requires only a 4-20 mA signal representing the actual flow rate and pulse outputs based on flow totalization. Belt speed is measured using a Milltronics RBSS return belt speed sensor that delivers 60 pulses per revolution.

All charge bins are equipped with Siemens MultiRanger® ultrasonic level measurement systems. They provide reliable continuous level measurement that helps operators ensure sufficient supplies for production.

### Benefits

Upgrading the production lines using Milltronics MSI belt scales helped Erlus achieve the desired productivity enhancements. Operators need program only the total charge of the desired mixture. Blending ratios are stored in the process control system. The automated blending process is very efficient. Improved blending control has enhanced quality, reduced finished product rejects, and increased productivity.

In addition, having reliable level measurement of supplies has reduced production downtime and maintenance, while ensuring the plant does not run out of raw materials in the charge bins.