KPM

WE CRAFT ASSURANCE

APPLICATION BRIEF

Online Moisture Analysis of Ceramic Powder

NIR-7000

Control of clay powder moisture is paramount to the production of quality floor and wall tiles of consistent dimension.

Too high moisture results in a badly formed, flexible tile in the dry press, and too low moisture creates a product that is too brittle.

ONLINE MOISTURE MEASUREMENT

The KPM Analytics' NIR-7000 is a continuous online near infrared (NIR) analyzer that delivers reliable non-contact moisture measurements directly in process environments for monitoring and controlling almost any production line. The sensor is well-suited for high-throughput industrial applications where moisture content directly impacts product quality.

- Results in tighter control of bulk density of powder and consequently more consistent product in terms of final dimension.
- Enables achievement of optimal moisture level minimizing waste.
- Saves energy through not over drying.

CERAMIC POWDER MANUFACTURING PROCESS

Clay, talc and other mineral constituents are quarried, refined, mixed, and dried to a set moisture level prior to forming in a Dust or Ram Press at very high pressure. The formed tiles vary in moisture by as much as 6% and must be oven or air dried to within 1%, prior to kiln firing. This prevents explosion of tiles within the kiln.

GAUGE INSTALLATION

The NIR-7000 analyzer should be located perpendicular to, and approximately 8" above a conveyor transporting the clay powder. Ideally the analyzer should be viewing freshly turned product, so an ideal location is immediately after a conveyor change.

MEASUREMENT PERFORMANCE

Measurement	Location	Range %	Typical Accuracy %
Moisture	Post drier, over conveyor	2-7%	0.15%

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