



Applications Notes

Moisture in Corn Flour

Moisture content of the meal or flour needs to be kept below a certain percentage in order to prevent spoiling within the storage bins. Typically moisture levels should not exceed 14% for the coarsely ground material, and 10% for the fine flour.

Corn Refining Process

Corn Dry Milling grinds corn into grits, meal, flour and bran. Corn is tempered with the addition of water before passing through a Beall Degerminator which breaks open the kernel, separating the endosperm, germ and pericarp(bran). Through the use of aspirators, gravity tables, sifters and dryers the different sized particles are separated and graded into grits, meal and flour.

Measurement Location

Choice of measurement location is dictated by the process and the conveying mechanisms. Ideally on-line moisture measurements are made prior to, or soon after the dryer in order that corrective action can be quickly implemented, often the moisture measurement can be used directly in closed loop control. If this isn't feasible, measurement can be made prior to the storage bins.

Gauge Installation

On-line gauges cannot be successfully installed in pneumatic ducts, but they can be configured to view product in a gravity chute or screw conveyors. If the product volume is low or the flow is discontinuous, a powder sampler is advisable, otherwise a viewing window or a sample probe can be used.

Measurement Performance

Measurement	Location	Target	Typical Accuracy
Moisture in meal	Exit of screw conveyer	12-14%	0.3%
Moisture in flour	Exit of screw conveyor	8-10%	0.3%