Optech

measurement at the speed of light

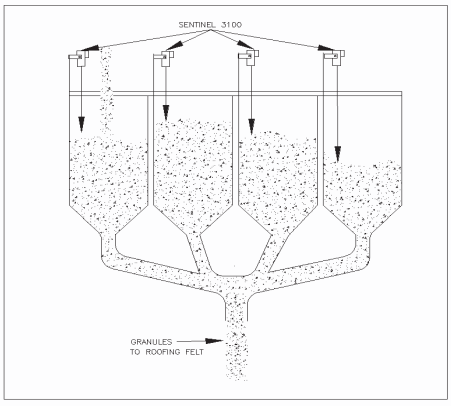
PRODUCT APPLICATION NOTE
SN0306

Industry:	Chemical and Allied Products, Petroleum Refining and Related Products
Type of Application:	Level monitoring of solid granules
Optech Equipment Used:	Sentinel 3100
Application Description:	The customer required continuous and accurate monitoring of solid granules used in roof shingle manufacturing

A manufacturer of roofing shingles blends solid granules and stores them in hoppers prior to use as a coating material. It was necessary to establish an effective method of monitoring and controlling level in the hoppers to ensure even coating and production efficiency.

The narrow geometry of the hoppers made the Sentinel 3100 the preferred non-contact monitor because of its focused low-divergence beam. The hoppers have open tops and a deep conical bottom allowing the Sentinel 3100 to be easily aligned for pinpoint accuracy. Furthermore, changes in ambient temperature and excessive background noise have no effect on the laser as they would with an ultrasonic gauge. The low dielectric properties of the granules make them "invisible" to radar gauges, giving laser an additional advantage.

Eight hoppers (two rows of four) of different sizes were each set up with individual Sentinel 3100 laser level monitors. The easy-to-mount units did not require any special accessories to ensure stable mounting and a direct line-of-sight into the hopper. The analog output from each unit was tied to a programmable logic controller (PLC) system to monitor and control levels as well as to ensure the proper filling logic for the production line. The reliability and repeatability of the readings helped to automate the production line, ensuring a more consistent and higher quality finished product. Specialized optics allowed for effective level measurements to even the darkest, lowest reflectance materials. The handheld keypad made it easy to configure the units and calibrate the analog settings.



KEY ADVANTAGES OF LASER TECHNOLOGY IN LEVEL MEASUREMENT

- Measurements unaffected by moderate dust
- Measurements unaffected by low dielectric constant of material
- Measurements unaffected by temperature changes and background noise
- Narrow beam divergence allows for pinpoint accuracy

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