

MTI's Laser Systems Enhance Process Control and Improve Product Quality on Cement Board Production Line



Introduction

Cement backerboard is used as underlayment for tile floors, walls and countertops. It is also used as exterior sheathing and in exterior stucco systems. Cement backerboard has proven to be more durable than virtually any other underlayment if quality control and thickness is maintained.

The Problem

A major cement board manufacturer was faced with the challenge to improve a board production line throughput and decrease the amount of waste in the process. Too thin of cement board material weakens it structurally, while board that is too thick wastes material and resources, as well as drives up production costs. Unacceptable in either case!

A consistent method to accurately measure the board thickness without contacting the material was needed. It required a continuous output signal to provide fast, active feedforward control of the process line. The measurement solution needed to provide continuous thickness information under varying line speeds and load conditions and be capable of operating in a harsh production environment.

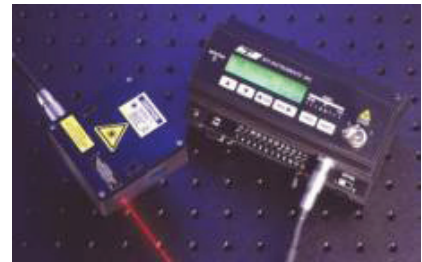
The Solution

MTI Instruments' Microtrak II precision laser sensor was selected because it offered a 20 kHz response time and a 4-20mA real-time output signal in a rugged, compact package. The operating distance of 120mm provided sufficient standoff to ensure the product never contacted the sensor. The scalable output sensitivity ensured complete compatibility of the Microtrak II with the existing process control equipment.

The Results

The Microtrak II's extreme stability coupled with its high accuracy helped the customer maintain a thickness tolerance below 250 um. This vastly improved the final product quality which resulted in material savings and decrease in the amount of scrap cement board.

MTI Instruments' Microtrak II laser can be used in other similar applications such as plywood/sheet veneer lines and wallboard as well as fiber board and paper thickness applications. MTII also offers fiber-optic and capacitance sensors for other process control applications.



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