



Controlling PP-stretch in Paperboard Laminating

Tension Control has Critical Effect on Processes with Extensible Films

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Maintenance of a set tension to within a few ounces throughout each production run was required to control the amount of polypropylene stretch to within 1/32 inch.

The simple, affordable solution was to install a pneumatic tension control system including tension transducers and an automatic controller with a soft start feature to the unwind stand of the plant's extrusion laminating equipment.

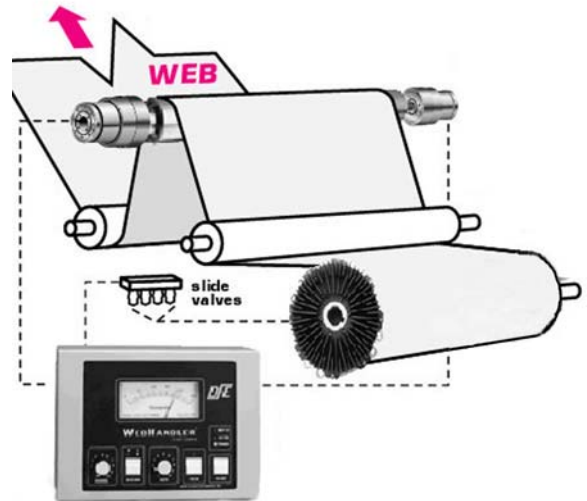
A manufacturer of recycled paperboard cartons in Michigan needed to expand the use of polypropylene film in its production of paperboard packaging. The plant's customers were seeking paperboard products with polypropylene's high moisture barrier properties.

Because of the stretchy nature of the polypropylene web, small changes in web tension that weren't being controlled on the company's laminating machinery resulted in inconsistent stretching and registration problems on pre-printed material.

The old manual web tension control system installed in the unwind zone produced readings in percentages rather than absolute web tension in pounds. This made it difficult for the operator to make adjustments of consistent magnitude with respect to changes in the observed web tension. The resulting stretch deviation in various locations on the web caused the web to be thrown out of register in places.

Because the tension of the polypropylene web was not accurately reproducible, the result was often lost productivity and material waste.

It was clear to see that this laminating process required a closed-loop tension control system that could measure actual tension in pounds and maintain substrate tension precisely and accurately within each batch and between batches.



This application illustrates the importance of using accurate tension control to reduce process deviations that have a negative effect on productivity or product quality.

By reducing web scrap and allowing a process to run at higher speeds with defect-free output, a good web tension control system will not only improve a machine's bottom line performance but can pay for itself in as little as a few weeks.

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