

Micro Motion® Meters Improve Foaming and Frothing for Carpet Manufacturing Processes

RESULTS

- Maintenance cost for latex flows greatly reduced
- Throughput greatly increased
- Operators freed up for other tasks
- Gained competitive advantage by offering higher value for lower cost to customers



APPLICATION

Perpetual Machine Company is a Georgia-based manufacturer of a variety of specialized textile equipment. In addition to other equipment, the company manufactures two types of urethane applicator systems (mechanical and chemical) and a latex foamer.

The polyurethane applicator systems mix polyol (with some additional ingredients) and isocyanate to create a polyurethane froth that is used to make polyurethane backing for carpeting. The characteristics of the polyurethane backing depend on the ratio between the polyol and isocyanate, so these feeds must be carefully measured.

Latex foam is good for a variety of uses in carpet manufacturing. Among other things, it can be used for locking tufts to the primary packing or gluing a secondary backing to the primary backing.

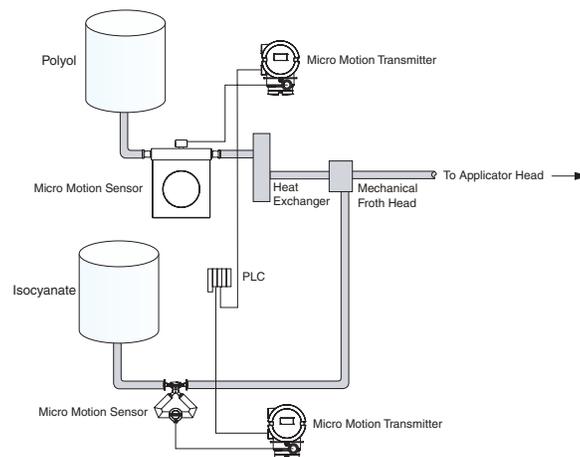
A latex foamer is a mechanical foam head that froths latex and air into a foam that is applied to the backing of the carpet. Historically, pumps and air regulators were used in an attempt to maintain the ratio of latex and air fed into the foam head.

CHALLENGE

The challenge for the urethane applicator system was that the density of the polyol was frequently changing. The existing metering system required recalibration every time the polyol changed. Even so, customers still found it necessary to verify the measurements with a weight check before every run and rezero the meters frequently.

Perpetual Machine Company's mixers and frothers produce a more consistent, higher quality product with lower maintenance costs.

➔ WWW.micromotion.com



For more information:
www.EmersonProcess.com/solutions/chemical
www.micromotion.com



The challenge for the latex foamer is the difficult properties of the latex. It readily coats materials, it shears when it flows, and its density can vary widely with the various additives required for carpet manufacturing.

Because scales are mechanical devices with many moving parts, the reproducibility of their performance diminishes as system components wear down. To combat the continuous measurement drift, weigh scales must be protected from rough loading and unloading and meticulously maintained and calibrated. Additionally, the scales can be damaged by chemicals spilled during loading and unloading and even by the solutions used to wash them down.

SOLUTION

Perpetual Machine Company began to install Micro Motion® Coriolis meters in their urethane applicators and latex foamers. Because Coriolis meters are not affected by changes in process density, fluctuations in the density of the feeds do not affect the meter's measurement accuracy. Both the urethane applicators and latex foamers benefited from this advantage, resulting in higher product quality.

Micro Motion meters have no intrusive parts, so maintenance costs (especially of the latex flows) are greatly reduced and overall throughput is increased. Operators are freed up for other tasks, since they are no longer required to spend time recalibrating, rezeroing, or unclogging the meters. In addition to reducing downtime, customers' operators are more productive.

Through all of these benefits, Perpetual Machine was able to gain a competitive edge in its market by offering higher value to its customers.

