



## Hydrophilic Coater **VS** Flexographic Coater

Why you should purchase a CMS Hydrophilic Coater versus the competition.

The **CMS Hydrophilic Coater** has a realized advantage over its competition, the Flexographic Coater, due to rheology. Rheology, as it is defined, is “the study of the deformation and flow of matter” – in our case, rheology considers how liquids and soft-solids react to shearing.

Our Hydrophilic Coater is specifically designed for thixotropic\* (shear thinning) coatings and provides a superior pinhole-free laydown. Thixotropic coatings are largely used in food-oriented products and packaging such as paper plates, frozen dinner trays and liquid containers. These products require pinhole-free application to ensure that liquids do not seep through the substrate and deteriorate its composition and strength.

When using a Flexographic Coater to apply thixotropic coatings, it is very difficult to administer a pinhole-free application due to its utilization of an Anilox Roll. The Anilox Roll contains lines or cells and is designed to carry a specific amount of coating. This coating is then applied to the sheet or substrate at a 1:1 ratio with no shear to smooth the coating or to fill in the paperboard’s inconsistencies.

The CMS Hydrophilic Coater, on the other hand, uses the water-attracting ability of its Hydrophilic Roll to bond with the water in the coating, shearing the coating at various stages in its application. With a CMS Full-Coat Coater, coating is delivered and sheared the first time by the pressure and speed differential that exists between the Pick-up Roll and the Hydrophilic Roll. The second shear exists between the Hydrophilic Roll and the Plate Roll. It is important to note that, at the first shearing stage, all air and foam is removed from the coating, eliminating the transfer to the Hydrophilic Roll. During the second shearing stage, the coating is thinned and applied. In Spot-coat applications, there is a third shearing of coating that occurs at the pressure and speed differential that exists between the Plate Roll and the paperboard. The result is a smooth, pinhole-free coating application with superior performance characteristics.

As press speeds get increasingly higher, it becomes much more difficult to maintain any kind of coating consistency using a Flexographic Coater: Anilox wear, blade pressure and wear, and foaming become much more troublesome. Online, coating consistency and laydown is controlled automatically with the CMS Gravimetric System. Our Gravimetric System constantly monitors the coating application and adjusts the Coater’s settings to maintain optimal coat weight.

In the past five years, we have seen an increase in customers interested in replacing their existing Flexographic Coaters with CMS Hydrophilic Coaters. This can be attributed to rising line speeds, ascending performance reliability requirements and, of course, a desire to curb costs.

**CMS Industrial Technologies, LLC** continues to make improvements to its Coater design, providing dependable equipment that runs at higher speeds, promotes cleaner operation, accommodates easier maintenance, and prioritizes operational safety without sacrificing quality and performance reliability.

***Let us be your path forward.***

\*Thixotropy

/THik’sätrəpē/ - noun

*The property of becoming less viscous when subjected to an applied stress, shown for example by some gels which become temporarily fluid when shaken or stirred.*