



TECHNICAL C&A INFORMATION

Coefficient of Friction(COF) - General v1.1

Coefficient of Friction - General Information

Coefficient of Friction (COF) Testing	Coefficient of friction(COF), as it relates to waterbased and UV coated surfaces, is the measurable frictional force resistance between two surfaces when in direct contact. Results are achieved using specialized lab testing equipment along with industry accepted testing methods/procedures.
Testing Methods	Relevant COF testing methods: Tappi 402: Conditioning of test specimens Tappi 549: Coefficient of static/kinetic friction, horizontal plane method Tappi 815: Coefficient of static friction, incline plane method
Testing Equipment	TMI 32-76: Coefficient of friction - horizontal/flat plane tester Thwing Albert 225: Coefficient of friction - horizontal/flat plane tester TMI 32-25: Coefficient of friction - incline plane tester
Relevance of COF Testing	COF tests allow for the qualitative and objective analysis of coating film surface characteristics as they relate to the expected formulated results of a specific coating product. Variances in COF measurement results can impact the performance of a dried coating film in regards to: material handling, machine-ability and rub/abrasion resistance.
Static v Kinetic COF	Static: measurable force resistance between non-moving surfaces in direct contact Kinetic: measurable force resistance between moving surfaces in direct contact
Interpretation of Results - Lab Report	TMI 32-76 or Thwing Albert 225, Sled COF - Horizontal/Flat Plane Test Static and kinetic COF results are represented as a percentage based on the relationship between the required/applied force and the normal force/weight. The lower the measured percentage result, the more slippery the coated surface is determined to be. The higher the measured percentage result, the less slippery the coated surface is determined to be. TMI 32-25, Slide Angle Test Static and kinetic COF results are represented as an incline angle in degrees. The more slippery the coated surface, the lower the degree results. The less slippery the coated surface, the higher the degree results.
Influences of COF Results - Examples	COF results can be influenced by, but not limited to, the following variables: <ul style="list-style-type: none"> - Ambient conditions for testing: temperature/relative humidity - Age of test specimens related to drying/cure of coating/ink layers - Degree of coating film cure - UV coating - Coating wet-state uniformity prior to application - mixing - Applied dry coat-weight; coating film thickness/coverage/lay - Coating film surface contamination, i.e. spray powder, wax, silicone - Formulation of beneath ink layers for slip additives - Substrate smoothness/uniformity - Substrate hold-out