COMPARISON OF MICROSTICKIES MEASUREMENT METHODS. PART I, SAMPLE PREPARATION AND MEASUREMENT METHODS


Abstract

Recently, we completed a project on the comparison of macrostickies measurement methods. Based on the success of the project, we decided to embark on this new project on comparison of microstickies measurement methods. When we started this project, there were some concerns and doubts principally due to the lack of an accepted definition of microstickies. However, we agreed to undertake the project due to its importance to the industry. As one can see from the list of authors and organizations above, we were fortunate that eight organizations/institutions agreed to participate in the project. Furthermore, Carl Houtman and his group at Forest Products Laboratory volunteered to prepare pulp samples in their pilot plant and ship them to all participants. FPL was requested to prepare two pulps: sticky-containing pulp (Pulp A) and sticky-free pulp (Pulp B). Participants were then asked to prepare 5 pulp samples by mixing pulp A and pulp B in 25% increments: Sample (i): 100% A; 0% B, Sample (ii): 75% A; 25% B, Sample (iii): 50% A; 50% B, Sample (iv): 25% A; 75% B, Sample (v): 0% A; 100% B. Additionally, a sample of deinked pulp (Pulp C) was also sent to all participants. The current definition of microstickies is stickies particles that are smaller than 100 μm or smaller than 150 μm in size. These particles would pass through a 4-cut (0.1 mm, 0.004 in) or 6-cut (0.15 mm, 0.006 in) slotted screen. We let the participants decide whether to use whole stock or fractionated stock for testing. We did not set any lower limit though particles smaller than 5 μm are usually classified as colloidal and dissolved material - CDM or DISCO. We also did not specify the use of any chemical additive to promote the formation of secondary stickies. In Part I of the paper we present details of sample preparation and description of various methods used for the measurement of microstickies. Results of sample analysis from these methods will be presented in Part II.