

코팅 부동화 측정장치개발 및 부동화시간에 관한 연구

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The rate of coating consolidation influences the operation of several coating methods and the final quality of the coating layer. The rate of coating consolidation is characterized with a dynamic gloss meter at short times for a thin coating layer applied to the base sheet of interest. During the coating consolidation process, the laser gloss meter response curve exhibits two critical turning points that indicate the two coating immobilization points defined by the traditional methods. Five base sheets with several different coating suspensions are characterized.

A model is proposed to estimate the rate of consolidation based on physical properties of the coating suspension, the base paper, and the liquid phase of the coating. The paper properties, especially the contact angle, are found to be an important factor in determining rate of consolidation. The model predicts the correct trends for the different coating suspensions and base sheets. The test method, along the model, can be used to determine the filtercake resistance of the coating layer for a thin and rapidly formed filtercake.

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