

Coating Technology and Fundamental Aspects of Its Processes

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The present state of coating technology, current issues to be solved and coating processes are overviewed, and common features of coating flows are discussed. Instantaneous, very fast strains, the forced dynamic wetting and air entrainment, the thin film flows of Quette type which can be simulated by a lubrication theory, film splitting flows often resulting in vertical striped, rib patterns and stabilities of coating liquid beads against disturbances brought from outside are found as the fundamental characters of the flow and kinematics at the coating gap between a running substrate and a coating device.

Phenomena of ribbing, forced dynamic wetting and air entrainment, universal relations of film splitting flows are discussed from various aspects interesting on the context of practical coating.