The effect of printing blankets on the rolling condition of printing cylinders

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Abstract: The correct rolling condition is one of the most important aspects in a printing press. Different surface velocities of two unwinding cylinders in the nip lead to slip which causes undesirable effects like sluring or asymmetric power transmission in the case of individual drives. Therefore a experimental setup was developed which mimics a printing couple, consisting of one form and one blanket cylinder, with the diameters of a real printing machine which allows to adjust the indentation of the blanket precisely and measure the revolution frequency of the cylinders with sub-promille resolution. At various impressions the transmission ratio between blanket and plate cylinder was determined for a variety of blankets and the results were compared to the ideal compressible / incompressible case. The results show that a blanket-specific material constant can be defined which describes the effect of printing blankets on the rolling conditions of the cylinders. This semiempirical material constant allows to optimize the rolling conditions of printing cylinders already in the design phase of a webpress construction.