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Abrasion Tester AT II

The **Abrasion tester AT II** gives for the first time the possibility to examine the abrasion behaviour between printing ink, forme and doctor blade material under laboratory conditions and according to the practice, and to derive from it reproducible results. Together with the ink reservoir and the driving member, the testing apparatus forms a complete unit. The removable doctor blade head with the multiple doctor blade system represents his priciple item. By four doctor blades, arranged in a circle, and a pretended doctor blade angle of 60°, the test time will be fourfold reduced. These present facts are noticeable, for so we get within a range of five hours a result corresponding to a printing number of two millions of cylinder revolutions.



Abrasion Tester AT II,
complete device with drive and base plate including basin for cooling and counter

Technical data and test method

The doctor blade pressure, having an important function at all abrasion proceedings, can be hold constant with help of the simple method of construction, not only during the complete test time but also from one test to another. It can be differently positioned from 200 bis 400 p/cm.

The problem of loss by evaporation resulted sooner in heavy variations of the viscosity at some test devices. By skillfully joined component parts, an optimum of sealing of the ink reservoir was reached. Moreover the compact construction allows to need not more than only 0.25 litre of ink for one test.

With help of a simple temperin basin the temperature range of the test fluid (ink, reducer, diluent, etc.) can be hold at constant values.

It is characteristic for the kind of abrasion that the forme is moving but not the doctor blade. Caused by the vertical arrangement of the doctor blade head - the motion happens by way of a vertical axle - the test forme (copper skin - Ballard), fastened by a clamping ring and resting flat on the basic plate, is exposed to a normal rotative wear. This circular abrasion allow to study the abrasion behaviour at different velocities of wiping and that during a test development. New reaslizations arise just with regard to this point. They sho also a wear depending of velocity.

The present abrasion speeds are between 1.2 m/s and 9 m/s at a number of revolutions of 100 000/h, and the production capacity of the rotary presses is about 6 to 7 m/s.

The change over that is to say the replacing of the test fluid and of the test forme can be done in 10 to 15 minutes but it must be appropreately prepared. The cleaning of the apparatus needs little time too (5 min.), as all parts being touched with ink can be rinsed with solvents in the container for liquids.

With help of this method of testing an exact evaluation of the test forme, round dot etchings, conventional etchings or gravures and of all materials belonging to the test can be realized, for instance cross smoothing, measurements of cutting in profile and optical and photographic registrations. Besides the volume of the test forme makes possible a simple and space safing storage. The food correelation between practice test and laboratory test is to regard as the most important result which has been brought by the abrasion tester.

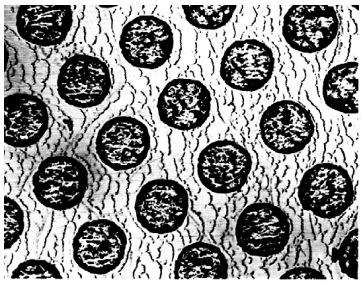
Measuring apparatus: Method for testing the abrasion behaviour (wear) of printing inks, forms and doctor blade materials.

Head of doctor blade: Multiple doctor blade system with four doctor blades arranged in a circle. Variable pressure of doctor blade, constant angle of doctor blade.

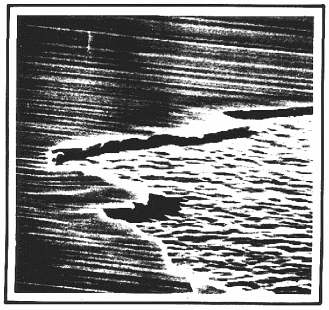
Ink resevoir: Optimum sealing, no problem of ink fly, constant viscosity, no loss by evarporation.

Kind of abrasion: Test forme resting flat on the fundamental plate, head of doctor blade turning, different velocities of wiping at constant numbers of revolution.

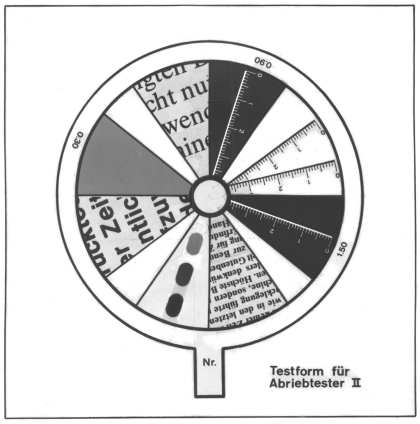
Change over/ Cleaning: The construction is so accomplished that short times for changing over and simple cleaning are guaranteed.



Photographed abrasion of a chrome-plated copper skin (Ballard) after 2 mill. revolutions with heavy flaking Magnification 160 : 1



REM-photograph of a chrome-plated surface destroyed by flaking Magnification 8000:1



COULOSCOPE CMS



The system impresses by its unique style and performance. It is world wide the most modern instrument for coating thickness measurement using the coulometric method acc. to DIN EN ISO 2177 and ASTM B 504, by deplating the coating. deal instrument for measuring the thickness of virtually any metallic or non-metallic substrates, especially also of multiple coatings, if non-destructive methods can not or need not to be used.
Automatic filling and emptying of the measuring cell by pump control with V18 stand.
Large graphical LCD supports operation and coating results. Measurements on virtually any metal coating on a metallic or non-metallic substrate, including multiple coatings. Typical thickness range 0.05 - 40 µn. Also for coated wires.

The appealing design, the big LCD-Display and clearly arranged keyboard - these are the prominent external features of the new **COULOSCOPE CMS**.

Just as important, however, is its simple operation, based on the emnu-driven operator prompting. The instrument can be set up for new applications as quickly and easily as the predecessor model COULOSCOPE S, of which thousands of instruments proved their reliability through out the world. Approx. 100 predefined applications, from single coating such as zink on steel up to triple coatings like chromium on nickel on copper on plastic are at your disposal in the standard version.