

PenetrationDynamicsAnalyzer emtec PDA.C 02

Module **Standard**

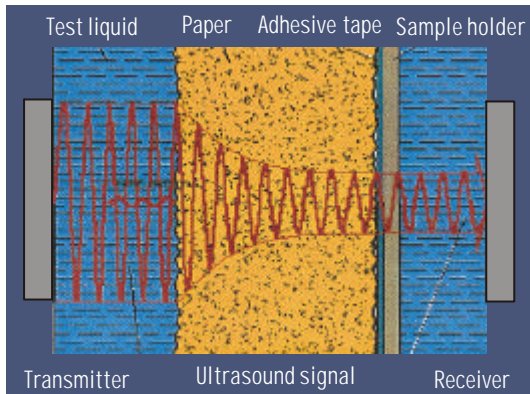
Ultrasonic Tester of Paper Properties  
Measuring the Wetting Behavior and Absorption of Liquids



■ Predictions of the converting behavior of paper & paperboard via assessment of:

- impregnating resin absorption by decor papers
  - printability:
    - offset: penetration of damping solutions or oil
  - gluability: impact of surface sizing on gluability, e.g. with hotmelts
  - coating base paper surfaces
    - assessment of surface pore structure
    - degree of surface sizing
  - coat quality
- Use of test and process fluids of low to medium viscosity:
- impregnating resins      ■ water      ■ fountain solution
- R&D: Pinpointing the origins of quality problems  
Product design
- QA: Efficient quality control

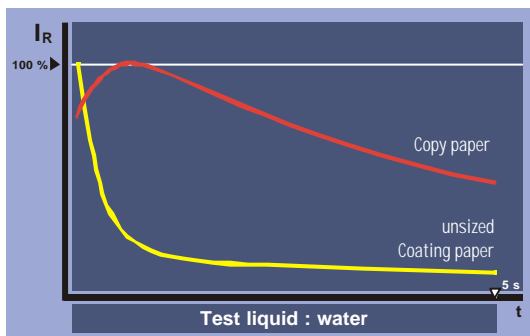
## Measuring principle



In a test cell, a paper sample is contacted with liquid. From the moment of contact, low-energy high-frequency ultrasound is transmitted through the sample in a Z-direction.

While the paper absorbs the liquid, the attenuation of the ultrasound undergoes characteristic changes.

The ultrasonic signals are received by a high-sensitivity sensor for processing in the PDA from where they are transmitted to a personal computer and displayed as an intensity - time - diagram.



From the shape of curve the following conclusions may be derived :

All quality parameters of paper and especially those surface properties which influence the wetting and absorption of an appropriate test liquid.

Quality parameters of liquids that may be characterized by means of a test paper.

Converting behaviour of industrial paper / paperboard grades and process fluids.

## Technical Data



### PenetrationDynamicsAnalyzer PDA.C 02 Module Standard

First analytical value	approx. 8 ms after liquid contact
Measuring intervals	approx. 1 ms
Reproducibility	better than 0,1 % deviation
Amount of liquid in cuvette	approx. 180 ml
Test liquids	water, impregnating resins, TEA, organic and inorganic liquids of low to medium viscosity
Temperature range	max. 75°C
PC software	all common operating systems
Data structure	ASCII file
Operating voltages	110 V 60 Hz / 220 V 50 Hz
Weight	approx. 15 kg

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