

PenetrationDynamicsAnalyzer emtec PDA.C 02
Module *Standard*

**Ultrasonic Tester for the Determination of Paper/Board Properties
via Measuring the Wetting Behavior and Absorption of Liquids**



■ **Measurement of surface and internal properties of paper & board in order to predict the behavior in the converting process**

■ **Main applications:**

- **Impregnating process of decor paper: impregnating resin absorption by decor papers**
- **Printability: effect of surface sizing and porosity on penetration of fountain solution or oil in the offset process**
- **Glueability: effect of surface sizing and porosity on the glueability**
- **Coating process:**
 - surface sizing and surface porosity of coating base paper surfaces
 - quality of coated paper (Latex filming, porosity, thickness of coating layer)

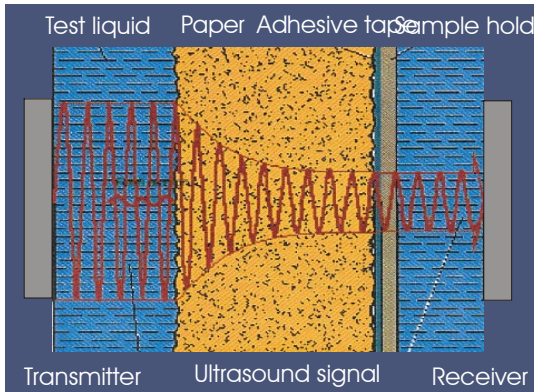
■ **Use of test and process liquids of low to medium viscosity:**

- impregnating resins ■ water ■ oil ■ fountain solution

■ **Results: Intensity-Time-Graph, automatically calculated values**

■ **Main user: Producers of paper/board, converting industry, chemical suppliers, machine builders**

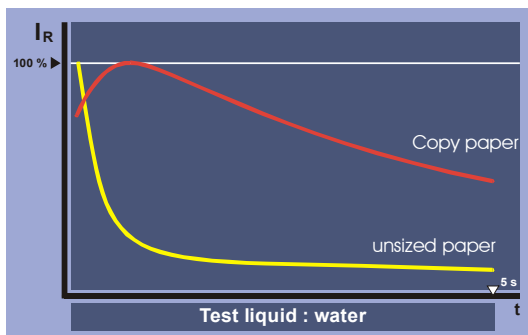
Measuring principle



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.C 02 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



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First analytical value	approx. 8 ms after liquid contact
Measuring intervals	approx. 1 ms
Measuring frequency	1MHz or 2MHz selectable
Measuring results	Intensity-Time-Graph, automatically calculated values
Test liquids	water, impregnating resins, organic and anorganic liquids of low to medium viscosity
PC software	all common operating systems
Data structure	ASCII file
Operating voltages	110 V 60 Hz / 220 V 50 Hz
Weight	approx. 15 kg