

No. 2072-I

Bristow tester (Liquid dynamic absorption tester)

Transfer of ink to the paper and absorption of ink by the paper through the printing process, including penetration of colors in coating, are important factors, especially when paper and paperboard are coated. Other important factors in processing papers are penetration of bond into inner cores and bonding to liners at the corrugators.

This behavior of liquid penetrating the paper layer is considerably different from that of the liquid penetrating the paper with a time span of several seconds or several tens of seconds, in the status of the paper being in static contact with liquid, as known in the conventional testing methods such as "Stöckigt" and "Cobb" methods.

To grasp this behavior, the Bristow type tester is designed for the purpose of measuring absorption speed of liquid in the processes of coating, box making and printing, when the liquid is at normal pressures or pressurized.

In the status of normal pressure or pressurized, the measurement principle is as follows; the specimen is applied on the circumferential surface of a rotation disc and made to rotate at different speeds, contacting with a head box filled with a certain amount of liquid on the specimen. The specimen is rotated at a certain speed until the liquid leaking out from a slit in the head box is completely absorbed by the paper. Absorption by the specimen is evaluated with a liquid transfer area recorded.

<Features>

When conducting a Bristow test, the most important factor affecting measurement accuracy to secure uniform spreading of liquid on the paper is parallelism of the head box and the drum in their width direction. For this purpose, KRK contrived various innovations in terms of head box shape and about how to secure the head box.

Specimen

Specimen A: 25mm wide x 1000mm long (newspaper, general wood-free paper)

Specimen B: 25mm wide x 1500mm long (coated paper)

Specimen disc

Specimen A: 25mm wide x 318.5mm in diameter

Specimen B: 25mm wide x 477.5mm in diameter

Rotation speed of disc: 0.5, 1.25, 2.5, 5.0, 12.5, 25.0, 50.0, 250mm/sec.

Circumferential velocity display: digital circumferential velocity meter, 4 digits

Head box: 15mm wide, slit width 1mm

Contact pressure: about 0.1MPa

Liquid added: 40 microliters (sampling with a micro syringe)

Accessories: micro syringe 50 microliters

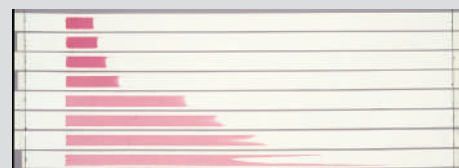
Referential literature: Science for Paper Making, Dr. Kadoya p 268 to 273

Referential standard: J. TAPPI No. 51-2000

Power source: 100/110VAC 50/60Hz 4A

Outer dimensions: 510 x 540 x 750mm

Instrument weight: 89kg



No.2072-II

Bristow tester (Pressurized type)

Normally, infiltration of liquid into paper is made at a certain pressure in the process of coating, printing and bonding. This machine is developed in order to reproduce the desired conditions for this test. This new type tester features a pressuring head box, instead of the normal pressure head box, to measure transfer of liquid through absorption by applying a certain pressure to the liquid.

Head box: 15mm wide, slit width 1mm

Contact pressure: 0.1 to 0.5MPa

Liquid pressurization: 0.003 to 0.01MPa (standard 0.005MPa)

Air pressure in service: 0.5MPa

Optional: support (for 1500mm disk)

Outer dimensions: 510 x 540 x 870mm (In the case of 1,500mm option, the height is 1,500mm with a support)

Instrument weight: 102kg