

**Quality test for Bibulous paper and
Nonwoven wipes**

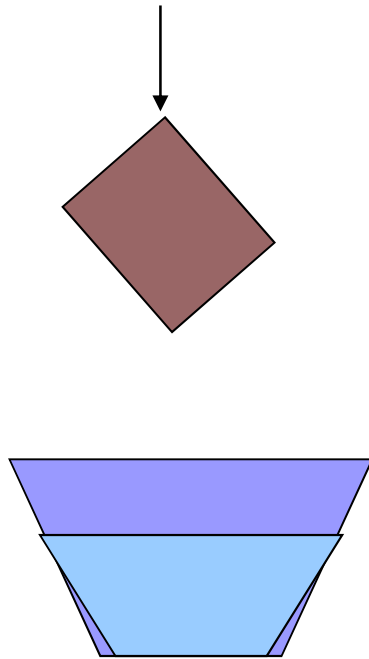
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What is Quality?

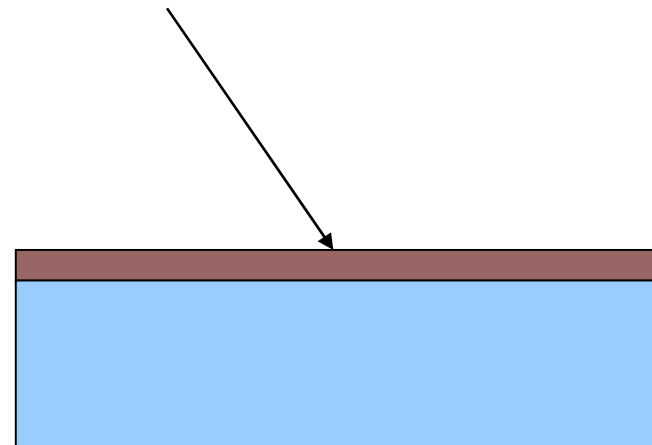
- To some Quality is: “What you like!”
- To others: “Quality is proper performance according to specs.”
- But Quality is dynamic and can grow as our understanding of the product grows.
- Quality can be found when both discernable subjective and objective events are acclaimed.

Bibulous papers and nonwovens - Uses

Absorbent wipes



Decorative laminates



Current testing for Absorption

- ASTM 1177 Absorptive Capacity (Dip and Drain for 10 seconds) wt.H₂O/dry wt.
- SANBS 707 Water absorption of Paper towelling (Dip and drain 30 minutes).
- TAPPI UM 451 Capillarity of paper (time for vertical rise of water of 25mm).
- Ghent Univ. direct gravimetric wicking test method for towels.

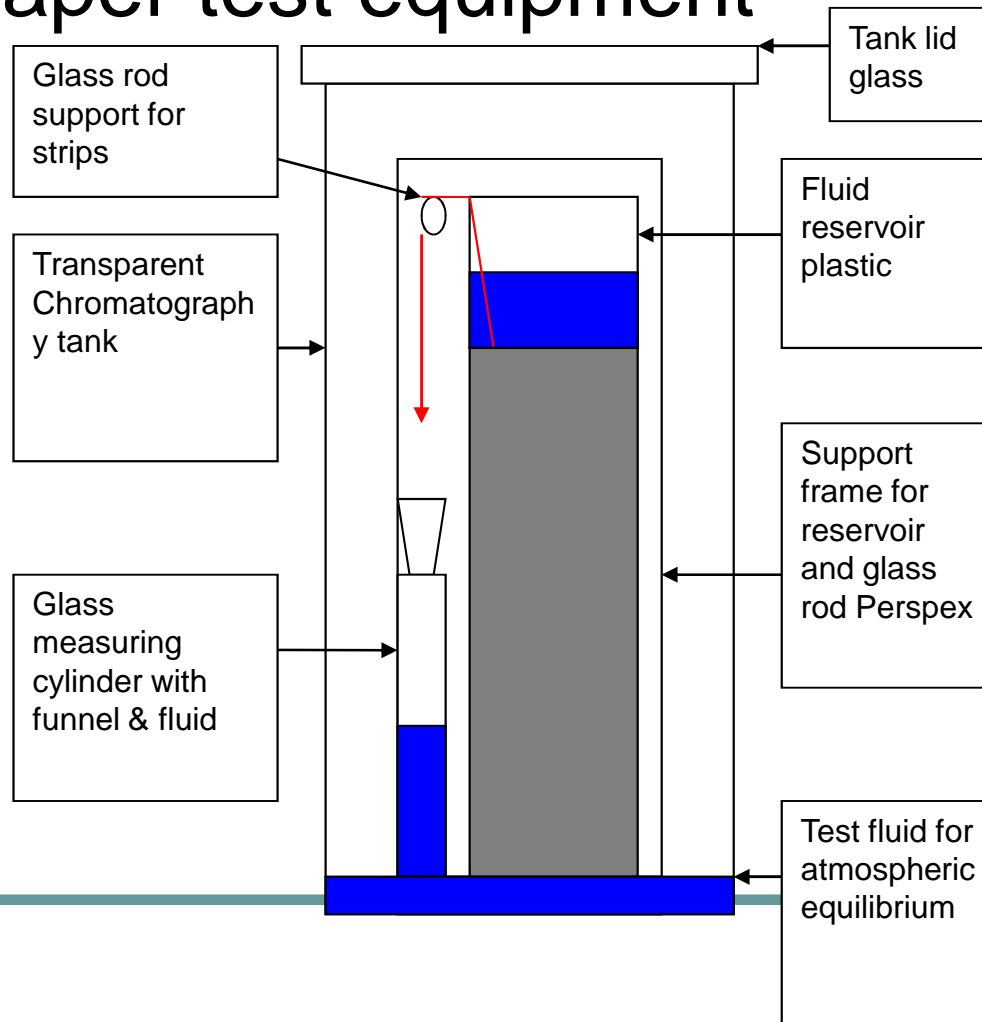
A New test for fluid flow

- The test measures the rate of flow of a fluid under defined atmospheric conditions. It gives a measure of the effective steady state of fluid movement in the sheet during the test period.

Rate of flow = Volume collected per unit time per unit wt. of substrate

Apparatus

- Paper test equipment



Design of bibulous paper/ n'wovens

- A portion of the fibres used should be capable of holding the sheet in an open condition during capillary flow.
- The softer wettable fibres are absolutely essential for assisting the liquid flow through the sheet.
- A multilayered headbox would be ideal for constructing an absorbent core with soft outer fibrous layers.

Examples of Uses for absorbent papers/ nonwovens

- A mixture of thick (40 denier) polyester with thin cotton and polypropylene fibres (1,5 denier) for adult incontinence urine surge control fibrous pads.
- Kraft fibres are used to improve liquid penetration of core decorative laminates.
- Tissue towelling absorbency improved by use of kraft fibres and through dried sheets.

Results with new test method

| | | |
|---|--|--|
| Tests of tissue towels of two widths: A:37 & B: 50 mm | Wicking rate (ml/g/hr) A: 25.4 B: 21.8 | Absorbent capacity (g/g) A: 5.9 B: 5.8 |
| Tests of local nonwoven wipe 30 GSM | Wicking rate (ml/g/hr) 93.1 | Absorbent capacity (g/g) 6.5 |
| Tests on imptd. Wipe 47 GSM | Wicking rate 83.8 ml/g/hr | Abs. capacity 5.3 g/g |

Conclusions

- The new test method for bibulous paper and nonwoven fabrics produces a more fundamental result that relates to the sheet performance under wet duty conditions.
- Both Rate of Wicking and Absorbent Capacity may be obtained with this test.