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OFFICIAL STANDARD – 1960
REVISED – 1977
OFFICIAL TEST METHOD – 1984
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Water absorptiveness of sized (non-bibulous) paper, paperboard, and corrugated fiberboard (Cobb test)

1. Scope

1.1 This method describes a procedure for determining the quantity of water absorbed by nonbibulous paper, paperboard, and corrugated fiberboard in a specified time under standardized conditions. It is based on studies by Cobb and Lowe (1), Cobb (2) and other investigators (3, 4).

1.2 For testing unsized and absorbent paper or paperboard, see TAPPI T 432 “Water Absorbency of Bibulous Paper.”

2. Significance

2.1 Water absorptiveness is a function of various characteristics of paper or board such as sizing, porosity, etc. This method is generally applicable to sized paper, paperboard and corrugated fiberboard, but it is not recommended as a sizing test for writing paper.

3. Definitions

3.1 *Water absorptiveness (Cobb value)*, the mass of water absorbed in a specific time by 1 square meter (10.76 square feet) of paper, board, or corrugated fiberboard under 1 cm of water.

4. Apparatus

4.1 *Water absorption apparatus*¹, a device that permits one side of the specimen to be wetted uniformly at the moment the soaking period begins, and to allow controlled rapid removal of the water from the specimen at the end of the test period. The specimen holder as shown in Fig. 1 comprises a metal ring with a machined lower face, 11.28 ± 0.02 cm (4.44 in.) inside diameter (corresponding to a cross-sectional area of 100 cm^2 (15.5 in.²)), 2.5 cm (1 in.) high and about 0.6 cm (0.24 in.) thick, clamped to a flat base plate of the same or bigger size. On the base plate is a rubber mat, larger than the outside dimensions of the ring, on which the specimen is clamped.

NOTE 1: The metal parts should preferably be a brass or other corrosion-resistant material.

NOTE 2: Several versions of the water absorption apparatus are now available. Some use different ring sizes that fit in the same clamping fixture and some use different clamping methods. A change in clamping method may affect the speed at which the sample can be removed from the apparatus. It has been reported that spring loaded clamps may reduce leakage when testing corrugated fiberboard.

4.2 *Metal roller*, solid brass, stainless steel or other corrosion-resistant material, having a smooth face 20 cm wide and weighing 10.0 ± 0.5 kg (22 ± 1.1 lb).

4.3 *Timer*, stopwatch or electric timer reading in seconds.

4.4 *Graduated cylinder*, 100 mL.

4.5 *Balance*, with an accuracy of 0.001 g, or better.

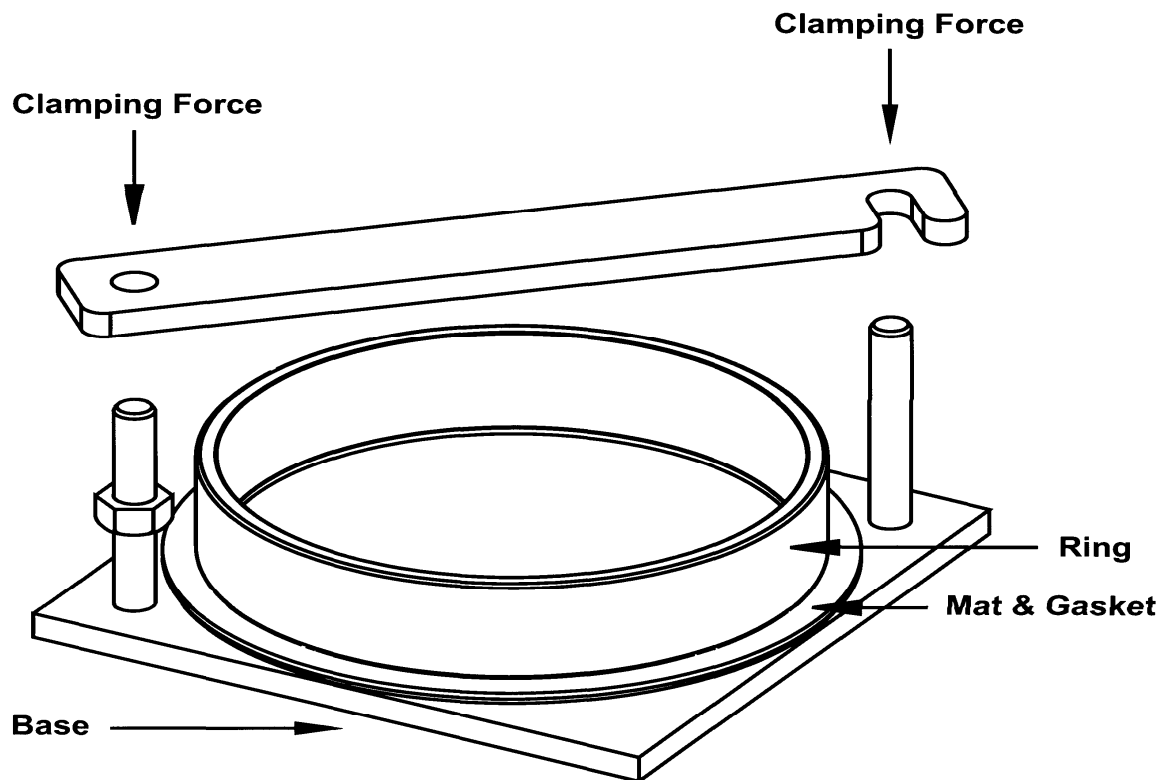


Fig. 1. Specimen holder.

¹ Names of suppliers of testing equipment and materials for this method may be found on the Test Equipment Suppliers list, available as part of the CD or printed set of Standards, or on the TAPPI website general Standards page.