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SUGGESTED METHOD – 1967
OFFICIAL STANDARD – 1976
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Equilibrium relative humidity of paper and paperboard

1. Scope and significance

1.1 This method describes procedures for determining the equilibrium relative humidity of paper and paperboard.

1.2 Paper which is dimensionally stable at a particular relative humidity and temperature will remain unchanged as long as this condition is maintained. Printers and paper converters can maintain a particular humidity and temperature condition more easily than they can regulate the moisture content of the paper to adjust for a change in its environment. Hence, for many purposes equilibrium relative humidity at a specified temperature is more significant than the moisture content of the paper.

2. Summary

The test is made by measuring the relative humidity and temperature surrounding the paper under test while the influence of the external atmosphere is excluded. The test apparatus and procedure required depend upon the form in which the paper is to be tested.

3. Definitions

3.1 *Equilibrium relative humidity* (Eq. RH), the ambient relative humidity (at a given temperature) at which exposure of the paper will not result in a net moisture absorption or desorption.

3.2 *Specification RH* and *specification temperature* are, respectively, the Eq. RH specified in the purchase order or other specification and the temperature at which it is measured; or, if not specified, TAPPI standard conditions of $50 \pm 2\%$ RH and $23 \pm 1^\circ\text{C}$.

3.3 *Equivalent specification RH* is the Eq. RH that would exist with paper having the specified moisture condition when at a temperature different from that measured.

4. Apparatus

4.1 *Humidity and temperature sensing devices*¹ (see Appendix for performance requirements).

4.1.1 *For stacks of sheets*: probe or sword type device of such design that the sensors are isolated from the external atmosphere when the probe is inserted in a stack of paper.

¹Names of suppliers of testing equipment and materials for this method may be found on the Test Equipment Suppliers list in the bound set of TAPPI Test Methods, or may be available from the TAPPI Technical Operations Department.