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PROVISION METHOD – 1975
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Size test for paper by ink resistance (Hercules-type method)

1. Introduction

There are many methods for measuring the aqueous resistance of paper and paperboard. The many methods can be placed in categories depending on the way water hold out is measured. One way of classifying tests could be direct versus indirect measurement. Another might be fixed time versus degree of penetration. Ink resistance by the Hercules method is best classified as a direct measurement test for the degree of penetration. Others classify it as a rate of penetration test. There is no one best test for measuring “sizing.” Test selection depends on end use and mill control needs. This method is especially suitable for use as a mill control sizing test to accurately detect changes in sizing level. It offers the sensitivity of the ink float test while providing reproducible results, shorter test times, and automatic end point determination.

2. Scope

2.1 This method (I-3) measures the resistance of paper to permeation of an aqueous penetrant and is a useful general purpose test for degree of sizing. It is applicable to most bleached, unbleached, and colored paper or boards which are surface sized and/or internally sized.

2.2 It is not applicable to transparent or translucent papers (e.g., low basis weight papers where ink affects the reflection from the measured surface), colored papers that do not contrast with the green test ink, or papers having as part of their structure an effective water barrier such as polyethylene film. An alternate method should be used for the direct comparison of papers which differ significantly in brightness, color, opacity, basis weight, or filler content, such as may exist among different grades of paper. This limitation does not apply to normal production variations in these properties. It is a good test for comparing different samples of the same grade.