

**THE EFFECT OF FIBER SURFACE  
IRREGULARITIES ON THE OPTICAL MASS OF  
COTTON BEARDS**

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**Abstract**

Using a cut-and-weigh procedure that was developed previously for a Reference Test Method for HVI strength measurements, it was shown that fiber surface characteristics have a significant effect on optical mass determinations in HVI strength tests. The optical mass determination was also shown to be sensitive to the distributions of the micronaire/fineness of the fibers in the test specimens. Scouring to remove or reduce surface constituents was used to demonstrate that natural waxes, which do not contribute to cellulose mass, can cause errors in mass determination made by optical methods. Swelling of the fibers, which does not change their linear density, but does change their reflectance properties, causes significant changes in optical mass measurements.

A summary of the Discussion and Results for this paper is included in "A Reference Test for HVI Strength Measurements - Implications for HVI Testing," which is also included in these Proceedings.