



## Fabric Drape Measurement: A Modified Method Using Digital Image Processing

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### ABSTRACT

*The textile and clothing industry has traditionally used Cusick Drapemeter for the assessment of fabric drape. In this paper, a modified method of measuring fabric drape using the Cusick Drapemeter was demonstrated. The modified method involves digitally capturing image and processing it in simple steps using image processing software. The study was conducted using a range of woven fabric samples. The fabrics were conventionally evaluated using the Cusick Drapemeter (British Standard Institute: BS5058, 1974). Digital images of the draped fabrics were captured and processed as well using the modified method. Drape coefficient was selected to use as the comparative parameter to evaluate the results from conventional and digital method. The average drape coefficient of each fabric sample obtained through the conventional cut-and-weigh technique was compared statistically with that obtained through the modified digital technique. The study demonstrates that results of the modified digital method for evaluating drape were similar to that of conventional method of drape evaluation.*

*Keywords: Fabric Drape, Cusick Drapemeter, Testing Instruments, Textile Measurement*

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### Introduction:

Drape, along with color, luster, and texture is an important factor affecting the aesthetics and dynamic functionality of fabrics. Drape is defined as "the extent to which a fabric will deform when it is allowed to hang under its own weight" (British Standard Institute, 1974, p. 4/29). Drape is a critical textile characteristic in determining how clothing conforms to the shape of the human silhouette. It prescribes the fabric deformation produced by gravity when a part of the fabric is directly supported. In use, this unique characteristic can provide a sense of fullness and a graceful appearance, which ultimately distinguishes fabric from other sheet materials.

Drape of fabrics was evaluated subjectively by a panel of judges in the early days of evaluating fabric aesthetic characteristics. Constant disagreement in the resulting value of the fabric resulted in development of quantitative methods for evaluating drape. Structured objective investigation of fabric drape behavior can be traced back to a classic paper authored by Peirce (1930). Peirce (1930) developed the 'cantilever method' to measure fabric bending properties and then used the two dimensional bending characteristic as a measure of fabric drape. Commercially, the Shirley Stiffness Tester based on the cantilever principle was marketed as the first instrument to measure bending properties. Characterizing drape using a two