

# Textile and Apparel Industry Consumer Demands

## Impact on Garment Care

Through studies of fabric properties which were done for the Smithsonian Institution, Dr. Wentz concluded that for sensitive woolen fabrics, drycleaning was the gentler method of choice in caring for them. In applying his findings to the recent concerns about drycleaning's effect on wool fabrics, Dr. Wentz, with his Ph.D. student Mary Ellen Wiczynski, and Dr. Roger Barker of North Carolina State University, conducted a study to investigate the effects of drycleaning on wool fabrics. The study was sponsored by the International Fabricare Institute (IFI) and the Textile Care Allied Trades Association (TCATA).

## Effects of Drycleaning

This was the first American detailed academic study of the effect of perchloroethylene (perc), the solvent most widely used in drycleaning, on the physical properties of wool fabrics as measured by the Kawabata Evaluation System.

Coordinated at the University of North Carolina at Greensboro, the study determined that the various drycleaning processes have no negative effect on the properties of wool in men's suiting fabrics.

## The Study

Test fabrics made up of 100% wool in different weights were cut into equal sized samples, conditioned, measured, and

shipped to the participating institutions.

Three drycleaning processes were chosen.

The first, or control process, was in pure perc with no additives.

The second was designated as "one bath" charged with a detergent.

The third was designated as "two bath" treatments in which a substantive detergent was added to the second bath.

The pure perc cleaning was conducted in a commercial cleaning machine with clean dummy clothes at the IFI. The other two were done in commercial drycleaning plants according to procedures recommended by the manufacturer for the particular process.

IFI test towels were used to evaluate cleaning performance. Solvent analysis was conducted in all systems. Physical testing of the fabrics was done according to standard AATCC and ASTM methods. The experimental data were analyzed with the statistical analysis system on a main frame computer. 16 fabric properties were measured on the Kawabata Evaluation System to determine tensile strength and shear properties, compression properties, bending properties, and surface smoothness and friction properties. Finally, subjective hand evaluation (stiffness to smoothness) was made by a panel of fifteen judges.

## The Results

1. Tensile strength was not affected.
2. No shrinkage occurred.
3. Air permeability was not altered.
4. Some KES properties differed, but the total hand values were not changed significantly.
5. Subjective evaluation of fabric hand showed perceived differences between drycleaning methods, but these differences were fabric dependent.

Authors of the research study concluded that "**The combined findings of this study lead to the statement that commercial (cleaning) methods did not change the properties of the fabrics that were studied in this project.**"

"Now the drycleaning and allied trades industries have objective testing using state of the art equipment to substantiate that drycleaning has no adverse effect on wools in men's suiting fabrics."

**Results of the research also serve to reassure consumers that drycleaning is still the recommended method for the routine care of wool garments.**

