

Comfort Properties of Flame Resistant Aramid Fabrics

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This research has investigated how modifications in fiber, yarn and fabric structure of a group of aramid fabrics affect their comfort related physical properties. Data related to the comfort of twenty-two fabrics used in protective apparel applications, including aramid and control fabrics were analyzed. Small differences in predicted thermal comfort are observed when measured in a standard environment. Dramatic distinctions can be made among test materials based on mechanical and surface properties that influence softness or hand. This work has indicated that improvements in the physical properties of fabric that predict softness may be key to enhanced comfort.

The environmental conditions such as sun, wind, and rain impose demand on the effectiveness of the clothing barrier. Three different environmental conditions were applied to study the effects of climate on the i_m property and thermal comfort. The clo rating of test fabric remains essentially unchanged, but i_m value changes according to environmental conditions. Projected comfort limits were calculated for two other environmental conditions based on the data at the standard condition.