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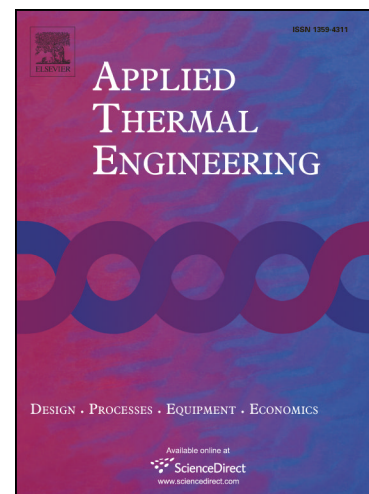
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**Comparison between sorption isotherms of non-ironed
and steam-ironed plain weave fabrics**

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Abstract

The aim of this study is to control if the steam ironing effect applied on cotton clothing can persist in different climatic conditions. For this purpose, the effect of steam ironing process on the sorption isotherms of plain weave fabrics made of cotton was investigated. An experimental device conceived around a magnetic suspension balance was used to regulate temperature at two levels (25°C and 35°C). Using the same proportions of mixed air, relative humidities can reach fixed values between 3% and 97%. Two successive cycles of continuous adsorption/desorption water vapor were used. The sorption isotherms of the ironed and non-ironed fabrics are compared. They define three sorption zones depending on the nature of links between structure and water vapor. The results show that the adsorption isotherm of the ironed fabrics is lower than the non-ironed one during the initial two zones of the sigmoid. Then, they are superposed in the last sector of the adsorption isotherm and during the entire desorption phase. Therefore, the ironing can reduce the sorption capacity of cotton at low and moderate relative humidities. A second adsorption/desorption cycle is performed on the same samples to prove that the ironing effect is completely cancelled.

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