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Effect of Superabsorbent for the Improvement of Car Seat's Thermal Comfort

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Abstract : The use of super absorbent polymers (SAP) for moisture absorption and comfort is still unexplored. In this research the efficiency of different SAP fibrous webs are determined under different moisture percentage to examine the sorption and desorption efficiency. The SAP fibrous web with low thickness and high moisture absorption are tested with multilayer sandwich structure of car seat cover to determine the moisture absorption through cover material. Sweating guarded hot plate (SGHP) from company Atlas is used to determine the moisture permeability of different car seat cover with superabsorbent layer closed with impermeable polyurethane foam. It is observed that the SAP fibrous layers are very effective in absorbing and desorbing water vapor under extreme high and low moisture percentages respectively. In extreme humid condition (95 %RH) the 20g of SAP layer absorbs nearly 3g of water vapor per hour and reaches the maximum absorption capacity in 6 hours.

Keywords : car seat, comfort, SAF, superabsorbent
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