

Material Selection for Footwear Insole Using Analytical Hierarchal Process

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Abstract : Product performance depends on the type and quality of its building material. Successful product must be made using high quality material, and using the right methods. Many foot problems took place as a result of using poor insole material. Therefore, selecting a proper insole material is crucial to eliminate these problems. In this study, the analytical hierarchy process (AHP) is used to provide a systematic procedure for choosing the best material adequate for this application among three material alternatives (polyurethane, poron, and plastzote). Several comparison criteria are used to build the AHP model including: density, stiffness, durability, energy absorption, and ease of fabrication. Poron was selected as the best choice. Inconsistency testing indicates that the model is reasonable, and the materials alternative ranking is effective.

Keywords : AHP, footwear insole, insole material, materials selection

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