

INVESTIGATION OF ORTHOPAEDIC ELECTROCONDUCTIVE KNITTED SUPPORTS COMFORT PROPERTIES

Ginta Laureckienė

Department of Production Engineering, Faculty of Mechanical Engineering and Design, Kaunas University of Technology, Studentu str. 56, LT-51424 Kaunas, Lithuania, ginta.laureckiene@ktu.lt

Abstract: The comfort of orthopaedic knitted supports can be perceived by the following aspects: physiological, sensual, and thermal. Physiological comfort is defined by moisture absorption and transfer to the outside, water vapour permeability, and air permeability. Sensual comfort is defined as the pleasant feeling of support on the skin. In this study, the relationship between the functionality and comfort of conductive knitted fabrics for orthopaedic support is investigated. Three variants of knitted samples were manufactured using electroconductive ELITEX® silver coated polyamide yarns of 66 tex/12 filaments and 235 tex/34 filament linear density (Imbut GmbH, Greiz, Germany). Electroconductive yarns have a specific resistance, which is necessary for heating. The knitted samples

were made on a flat double needle-bed knitting machine with a structure knitted on a combined half Milano pattern. The results demonstrated that comfort properties, such as air and water vapour permeability and friction, are influenced by both the type of raw material and knitted structure parameters.

Keywords: *conductive knitted fabric, comfort properties, air permeability, water vapour permeability, friction.*