

Performance Analysis of Compression Socks Strips

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Abstract : Compression socks are highly recommended textile garment for pressure exertion on the lower part of leg. The extent of compression that a patient can easily manage depends on stage (limb size and shape) of venous disease and his activities (mobility, age). Due to dynamic mechanical influence, the socks destroy their extent of pressure exertion around the leg. The main aim of this research is to investigate how the performance of compression socks is deteriorated due to expected induced wearing mechanical impacts. Wearing mechanical impacts influence the durability parameter i.e. tensile energy loss. For tensile energy loss, cut-strip samples were interacted to constant rate of loading and un-loading, cyclic-loading upto 15th cycles for ± 5 mm extension (considering muscles expansion and relaxation) and were dwelled (stayed) for 3 minutes at 25%, 50% and 75% extension levels, simultaneously. Statistical validation of tensile energy loss was performed by introducing measures of correlation, p-value (≤ 0.05), R-square values using MINITAB 17 software.

Keywords : compression socks, loading and unloading, 15th cyclic loading, Dwell time effect

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