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FEATURES OF DESIGNING MODERN RUNNING SOCKS

This work is dedicated to the development of technical requirements for the operational characteristics of running socks with the addition of deodorizing fibers. This problem is relevant and requires research, as a long-lasting deodorizing effect will enhance the functional properties of running socks during extended training sessions and compete effectively with global brands.

The structure of knitwear and its stretch characteristics have been the focus of research by L.M. Melnyk, L.Y. Halavska, M.O. Lazarenko, and others. Additionally, N.V. Kruglenko and others have addressed the issue of providing anti-fungal effects to products simultaneously with dyeing. However, the question of achieving a long-lasting deodorizing effect in hosiery and sock products remains unresolved today, which could significantly enhance their reliability, comfort, and ergonomics.

The study investigates the functional zones of running socks, using the Marathon model produced by the leading brand X-Socks (Switzerland) as an example, and outlines the requirements for these zones. The socks incorporate an innovative technology for a foot embrace system, which helps alleviate the effects of pronation and supination. They do not slide down, do not squeeze, and adapt to any foot size thanks to the self-adjusting cuff. Ventilation and rapid drying are achieved through ventilation channels located on the inner side. The toe, instep, and heel protection system provides warmth and cushioning during dynamic activities.

The anatomically shaped footbed, using advanced technologies, has a different structure for the right (R) and left (L) foot. It supports and protects high-stress points on the foot, maintaining temperature and moisture regulation through special channels with each step.

In all X-Socks models, a significant number of technologies are used, approximately 15 in each model. Each technology serves a specific function, contributing to the comfort, foot health preservation, and durability of running socks. For example, the self-adjusting cuff technology ensures a snug fit without slipping or squeezing.

The supronations bandage provides support to prevent pronation and supination of the foot.

The instep protector with airvent zone reduces the risk of pressure points and chafing while optimizing ventilation.

The airconditioning channel technology allows the sock to disperse warm, moist air, providing cooling and dryness.

The aircool stripe features light lines for summer wear, and the lower part of the sock is made of Nodor material, which prevents odor and bacterial growth while ensuring dryness and comfort.

The airflow ankle pads provide the best protection without compromising the ventilation capacity of the airconditioning channel.

The toe protector absorbs pressure and comfortably surrounds the foot. The toetip protector buffers the foot against pressure, and the Robu material protects sensitive toe tips.

The lambertz-nicholson achilles tendon protector prevents strain on the sensitive Achilles tendon thanks to a special cushion that acts as a buffer between the foot and the footwear, preventing pressure and friction.

The anatomically shaped footbed, using cutting-edge technology, has different structures for the right (R) and left (L) feet, protecting and supporting high-stress points on the foot.

The heel protector is particularly susceptible to abrasion; the heel protector absorbs friction and effectively reduces the risk of blister formation.

The traverse airflow channel system creates ventilation during movement.

Therefore, by incorporating various innovative nanotechnologies in the production of running socks, it is possible to enhance the operational performance of

the products. These innovations satisfy the requirements of not only athletes but also individuals with foot abnormalities, such as those with pronation, supination, or neutral foot placement. The supronations bandage supports the ankle and protects it from rolling.

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