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# STUDYING THE TREND OF FRICTION COEFFICIENTS IN RELATION TO NORMAL PRESSURE FOR FABRICS MADE FROM WOOL

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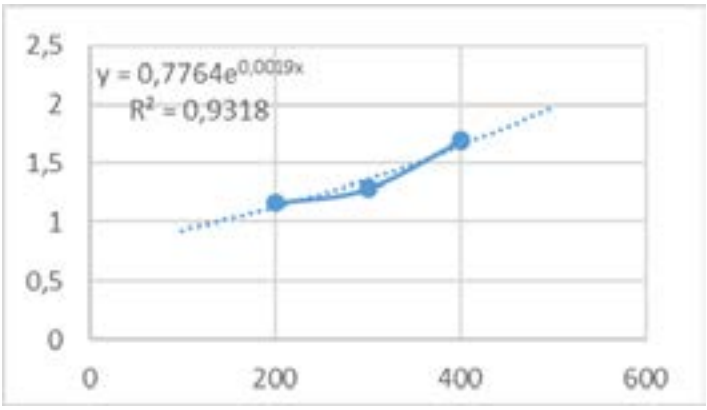
The article studies the coefficients of friction during sliding and at rest with a tendency to slide of wool-type fabrics - with different wool content, with different weave and with different thickness of the warp and weft threads. The aim of the study is to establish the trend of the graph of the coefficients of friction in relation to the pressure and in relation to the direction of testing - warp to warp and warp to weft for the two layers of frictional fabrics. The study shows that a logarithmic function - close to the linear or exponential - close to the linear function ideally describes the friction of wool-type fabrics. Out of a total of 16 graphs, 15 are ideally described by a logarithmic function, and 1 - by an exponential one, which can be summarized that the graphical dependence of the coefficients of friction for wool-type fabrics is logarithmic, as with increasing pressure, the coefficient of friction also increases.




Twelve out of sixteen graphs are logarithmic with a high confidence coefficient R2 > 0.99.

The values of the confidence coefficient R2, which are visible under the graphical equations in graphs Nos. 1 ÷ 16, characterize the approximation as a model with very good and ideal quality, with a confidence rate above 0.85.

In the experimental study, results were obtained for friction coefficients (at rest and during sliding) close to 1 and even greater than 1.

Coefficients of friction in fabrics are of great importance in the sewing industry, in textile weaving technologies, as well as in their subjective assessment when wearing a garment and when the body is in contact with woven surfaces (blankets, upholstery, etc.).

The user's subjective perception of fabric friction is important, but for textile technologies, it is essential to evaluate the quantitative parameters of fabric friction as well as the factors that influence it. The friction force in textile materials depends on a number of test factors - normal load, contact area, test speed, as well as the nature of the textile surface and the direction of friction.

In the scientific literature, there are numerous publications related to fabric friction and the determination of friction coefficients [1, 2, 3, 5, 6, 7]. The present work focuses on the coefficients of friction and the study of the prediction of the tendency of the coefficients of friction under different normal loads. The development is part of a larger study of the friction characteristics of fabrics made from wool.

The purpose of the present study is to predict the trend of the coefficients of friction in fabrics when the normal pressure changes and to determine the linear direction.

To fit the study's purposes, four different fabrics with wool content were produced by the company "E. Miroglio" EADSliven, Bulgaria, was selected.

***Keywords:*** *Wool type fabrics, friction, coefficients of friction*