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INVESTIGATION OF INFLUENCE OF TECHNOLOGICAL MODES OF SCREEN PRINTING ON IMPRINTS QUALITY

To ensure high-quality screen printing, critical parameters such as printing speed and pressure must be carefully controlled. The printing speed is directly proportional to the squeegee pressure, therefore, decreasing the printing speed will generally lead to a decrease in squeegee pressure, thus reducing the overall number of defects caused by pressure. Squeegee pressure is the contact pressure exerted by the squeegee blade on the stencil surface during printing. The squeegee pressure should provide the force necessary to evenly distribute the ink composition over the entire print surface, fill all stencil apertures, and clean the top surface of the stencil at the same time. The use of a squeegee length no less than the printable area in width avoids excessive pressure on the stencil. The one who has the least grip, when it is possible to get down to the top quality of the bits, is called technologically necessary, and the greatest is critical. The lowest pressure at which satisfactory print quality can be achieved is called technologically necessary, and the highest is called critical.

The object of the study was a viscose fabric printed with Ausburnner mixture. Three technological printing modes of the required squeegee pressure on the printing plate were chosen: 0.4 mPa; 0.6 mPa; 0.9 mPa at a technological gap between the form and the printed material of 3 mm, with a squeegee of rigidity of 70 units by Shore, with a sharpening angle of 60 ° on a polyester mesh of 36 l/cm^2. The best result was determined visually in points (5 - clear edges; 4 - clear edges, but sometimes visible defects; 3 - blurred contour; 2 − poorly visible edges of the image 1 - the image is not "readable") by the clarity of the edges of the image on photos taken with an Intel Play microscope.

According to the results of the study, we can say that the required technological pressure, which ensures the clarity of the edges without ink spreading, is a pressure of 0.6 MPa. The pressure of 0.4 MPa is insufficient, as the image is not fully printed; the pressure of 0.9 MPa is too high, as evidenced by the lack of clarity of the printed elements in the image.