

# THE REINFORCEMENT OF THE FOOTWEAR UPPERS WITH SELF AND THERMO ADHESIVE FABRICS

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**Keywords:** fabrics, leather, footwear, lasting, elongation

**Abstract:** Self and thermo-adhesive textile fabrics (woven fabrics and knit fabrics) used for strengthening the stitches and the leather uppers are used more and more in modern technologies of ready-made shoe products. The employ of self and thermo-adhesive textile fabrics in the process of shoe manufacturing is necessary because of the following: a decrease of the toxicity at the place of work, the insurance of the process accuracy and, implicitly, the growth of the work productivity. The strengthening of the uppers is done in correspondence with the chosen shoe model; thus there are strengthened the vamp, the quarter and the heel.

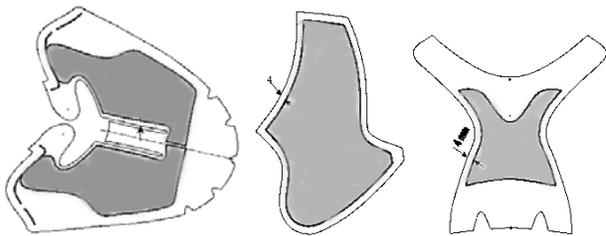


Figure 1

During the lasting process at a tensile effort of  $0.7 \text{ daN/mm}^2$ , the stretch of the reinforced leather with self and thermo adhesives fabrics are net different from the ones without. Self-adhesives materials have characteristics of permanent adhesiveness given by the pressure sensitive adhesives.

For non-reinforced materials the plastic elongation represents a small part from total elongation. Increasing plastic elongation as part of the total elongation ( $\epsilon_p/\epsilon_t$ , %) has been found by testing strengthening systems. This augment is more evident if tensile time is about 5 minutes, 30 minutes respectively

Furthermore if the uppers are reinforced the capacity of keeping the shape after the tensile effort is cancelled, will increase. Regarding the two types of materials that have been studied (woven and knitted fabrics), the greater proportion  $\epsilon_p/\epsilon_t$  is obtained in the case of leather reinforced with woven fabrics (1 and 2). In practical conditions, there are used the materials which allow a satisfactory dimensional stabilization by reducing the elastic elongation for the plastic elongation (necessary in preserving the shape of the shoe and the commercial appearance).

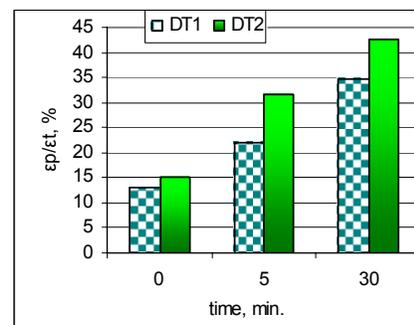


Figure 6

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