

A Study on the Effect of Modified Feed-dogs on Satin Fabrics

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Abstract:

Feed mechanisms is the basic component of the sewing machine, it is used to control the motion of the material being sewn. The improvement of the construction of the sewing machine feed mechanism aims to improve the quality of seams. This study aims to investigate the effect of using modified feed dogs, various levels of pressure for the presser foot and different number of studied fabric layers on the physical properties of slippery fabrics such as satin fabric. 7-end satin woven fabric has been used in three groups: two layers, three layers and four layers of fabric. Each group was sewed using different types of feed-dog: conventional teethed, toothless (trimmed teeth of feed-dog) and rubber coated feed-dog (flat gripper of rubber). Each specimen was sewed under three levels of pressure by the presser-foot: light press (one turn), normal press (thirteen turns) and heavy press (twenty-six turns). Three seamed lines were sewed along warp direction of the fabric with equal distance from each other. All specimens were subjected to the appearance and seam pucker test, a panel of ten experts (researchers and staff from the textile and clothing sectors) had evaluated the samples. On the basis of the study investigations carried out, it has been found that the use of rubber material covering the feed dog has a significant effect on the appearance and seam pucker of a satin fabric. Rubber-coated feed-dogs would feed even the finest of fabrics without snagging or leaving marks on the fabric. However, the pressure levels of the presser foot don't affect markedly the sewed fabric appearance and seam pucker. Finally, increasing the number of layers of satin fabric positively affects the fabric appearance and seam pucker.

Keywords:

- ***Feed-dog,***
- ***Slippery fabrics,]***
- ***teeth pitch,***
- ***feed mechanism***
- ***teeth inclination***

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