

## Process Characteristics of Brush Machines in the Manufacturing of Ultra-Fine Nylon Suede

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### 1. INTRODUCTION

Newly developed ultra-fine nylon suede has the following characteristics. The construction of the ultra-fine nylon suede is designed for the better effect of raising and brushing. The process is composed of natural suede effect finishing for the ultra-fine nylon suede. Fiber cutting system has an important role of hand vale by standing knife, turning knife, guide bar, and cutting knife.

### 2. EXPERIMENTAL

The warp thread for the ultra-fine nylon suede is nylon ATY 75d/36f and the filling thread is nylon sea island type ATY (160d/48/42f) and HS30d/12f.

Figure 1 shows the c Construction of the ultra-fine nylon suede. The weaving system is consists of sateen 5 harnesses and plain 1/1,

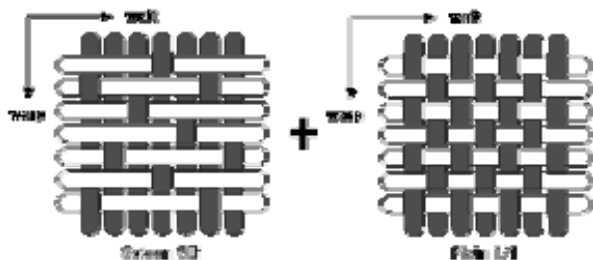


Figure 1. Construction of the ultra-fine nylon suede.

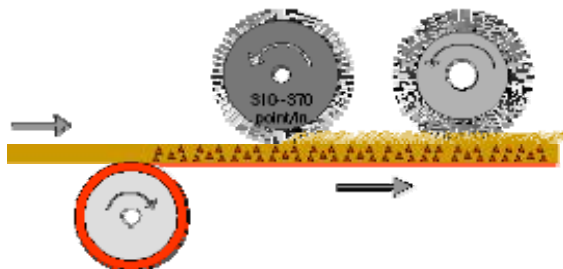


Figure 2. Raising and dia brushing for the ultra-fine nylon suede.

Figure 2 shows the raising and dia brushing for the ultra-fine nylon suede and Figure 3 shows the schematic diagram of natural suede effect finishing. Raising and brushing process carry an important meaning in making high touch ultra-fine nylon suede.

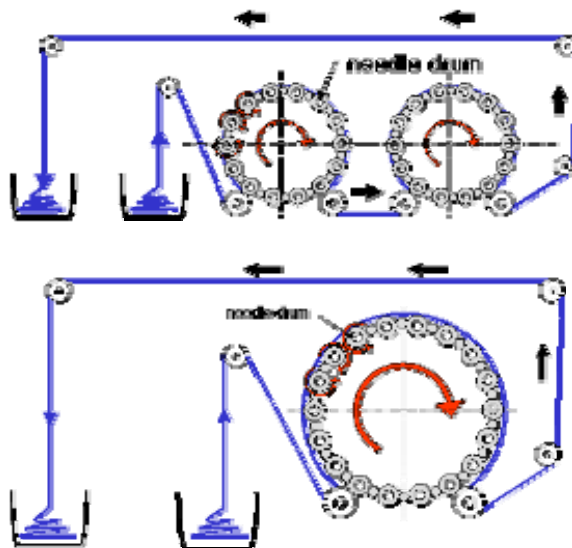


Figure 3. Schematic diagram of natural suede effect finishing.

### 3. RESULTS AND DISCUSSION

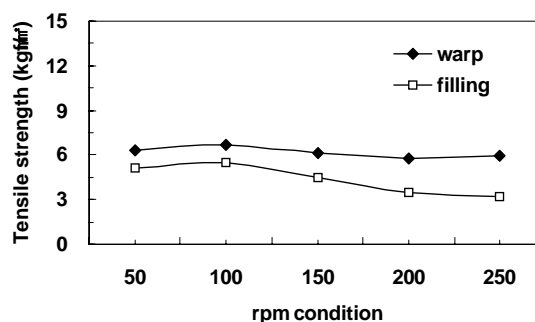


Figure 5. Effect of the brush machine rpm on the tensile strength of the ultra-fine nylon suede sample 1.

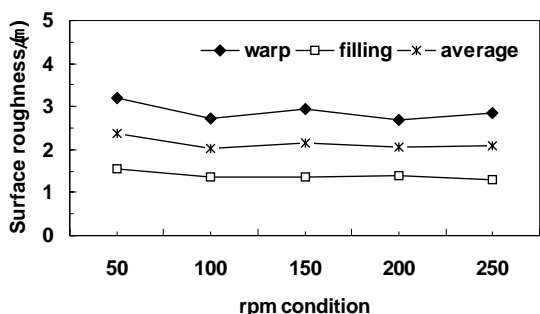


Figure 6. Effect of the brush machine rpm on the surface roughness of the ultra-fine nylon suede sample 1.

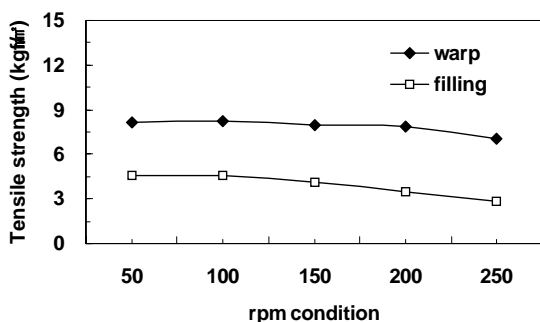


Figure 7. Effect of the brush machine rpm on the tensile strength of the ultra-fine nylon suede sample 2.

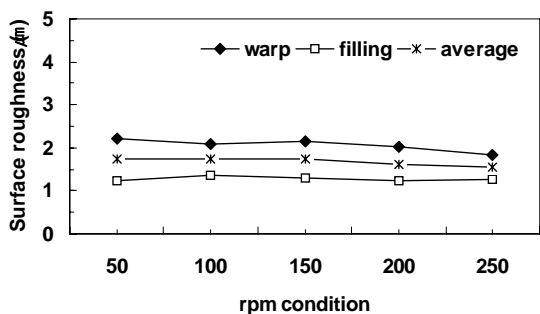


Figure 8. Effect of the brush machine rpm on the surface roughness of the ultra-fine nylon suede sample 2.

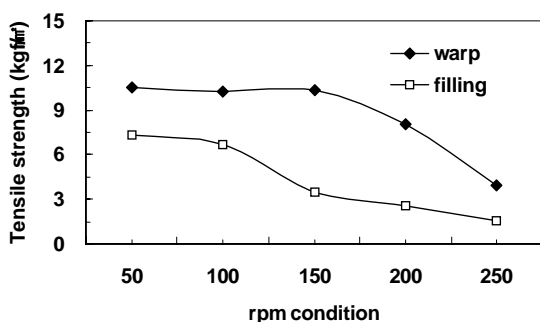


Figure 9. Effect of the brush machine rpm on the tensile strength of the ultra-fine nylon suede sample 3.

The above Figures 5-9 show the effect of the brush machine rpm on the tensile strength and surface roughness of the suede. The tensile strength decreases according to the increase of the brush machine rpm as the surface roughness of the suede. Figure 10 shows the natural suede effect finishing for the ultra-fine nylon suede.

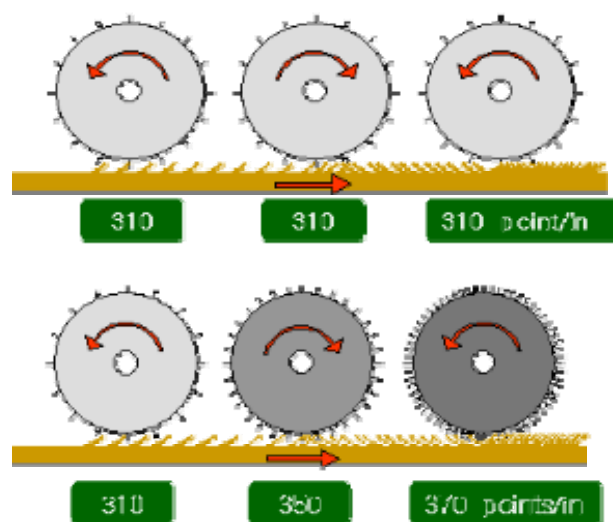


Figure 10. Natural suede effect finishing for the ultra-fine nylon suede.

#### 4. CONCLUSIONS

The effects of the revolution of brush machine on the physical properties of the natural suede effect finished ultra-fine nylon suede are obtained experimentally. The brush machine rpm on the tensile strength and surface roughness of the suede decrease according to the increase of the brush machine rpm .

#### 5. REFERENCES

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