

## Developing of High sense & Sensibility 2Side Warp Pile Knitted Fabrics by Applying the Construction

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### Abstract

This Study executed the newly developed warp knitted fabrics for the end of living textile materials and investigated the dyeing behavior with the change of drying temperature. There were also analysis of yarn properties in the process of dyeing and finishing. Above all, we examined the influence of touch and softness according to processes. So we can expect the optimum yarn and condition for the better textile goods.

### 1. Introduction

The fabrics goods called as New synthetic fibers primarily composed of more than 2 different bundle yarns and their combination like micro fibers and special cross section fibers of polyester, different shrink blend fibers, heat hysteresis, especially the super micro fiber polyester yarns become extending in the usages.

Until now the super micro fiber is not classified clearly, but generally mentioned less than 0.3 denier. The super micro filament yarn for the woven and knit fabrics are made by 3 types like direct spinning, division type spinning, sea-island spinning. And their spinning methods have different characteristics and can be used with appropriate different end styles.

In case of Suede items, if most of them should be done in Korea, the price, physical properties and the condition for buyers could not be satisfied. So many buyers asking for the new items that most of developing countries can not catch up with.

Therefore, we examined the unlimited construction of warp knitted fabrics, fake fur, and textile materials for industrial. And there were investigation and

application like eliminating or reducing complicate processes and defect causes to give the light weight and soft touch after dyeing condition and finishing temperature in the double sided knit items.

### 2. Experimental

#### 1) Specimen

For the micro fiber EF Velboa item, we used 75D/144F DTY, 75D/192F DTY, 65/192 DTY and also make a few more processes like pre-treatment, face finishing and brushing fabrics.

#### 2) Dyeing

The dyeing was carried out on the basis of below program DTC-6000 II, and Dae rim Starlet IR Infrared dyeing machine was used. The conditions of dyeing are like these two : at 120°C, 40min. and 130°C, 40 min. at the same solution ratio 1:10, buffering 2g/L, and disperse agent 0.5 g/L.

#### 3) Dyestuffs selection

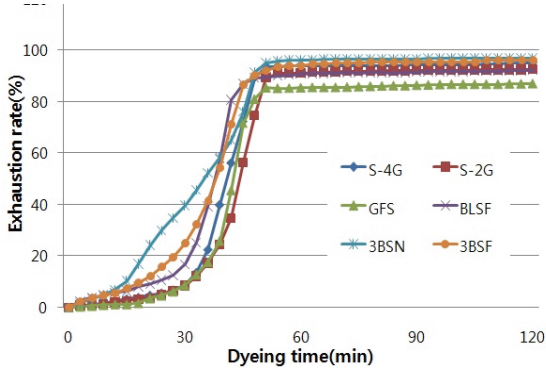
The disperse dyestuffs is made by Oh Young Industrial Co. Ltd and S Type(S-4G, GFS 200, BLSF, 3BSF, 3BSN, S-2G), the total is 6 types and the concentration is 1.0% o.w.f. After the process we used the Spectrophotometer for the data of K/S Value, and measured the color fastness of washing (ISO 105 C-01), light(KS K ISO 105 -B02) and sublimation(AATCC Test Method 117-1999).

#### 4) The Change of color fastness according to dry temperature.

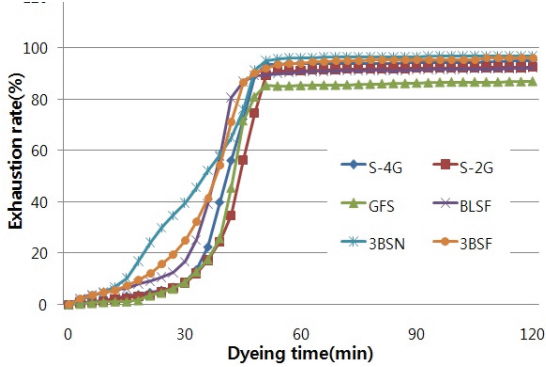
We dried the double sided micro EF Velbao warp knit after dyeing at the temperature of 130°C and 60% pick-up ratio in the curing machine (DL-2015A, Dae Lim Starlet Co. Ltd) with the change of 150, 170, and 190°C.

### 3. Conclusion and consideration

The Fig. 1.2 shows the final adsorption S-type 6 kinds of dyestuffs at the 130°C and 40 min. with increment of temperature and there were 2~5% higher.



**Fig. 1.** The final adsorption of dyeing process at the 120°Cx40min.



**Fig. 2.** The final adsorption of dyeing process at the 120°Cx40min.

And also, in the comparison of color fastness with the change of temperature, as the temperature

increase, the color fastness to washing become less in the table 1. But there were not big difference in the color fastness to light and sublimation.

**Table 1.** Change the color fastness with the increase of dry temperature.

#### Yellow S-4G

	Washing (staining of nylon)	Light	Sublimation
150°C	4-5	4	4
170°C	4-5	4	2
190°C	4-5	4	4-5

#### Red BLSF

	Washing (staining of nylon)	Light	Sublimation
150°C	4-5	4	4-5
170°C	4-5	4	4-5
190°C	4	4	4-5

#### Blue S-2G

	Washing (staining of nylon)	Light	Sublimation
150°C	4-5	4	4
170°C	4-5	4	4
190°C	4-5	3	4

### 4. Acknowledgement

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