



Improving the sequence of the technological process of production of Vellur products

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ABSTRACT

This article is about making changes to the sequence of the Vellur production process and the role of the quality controller. This article describes how to use the quality controller "CIELAB" color detection tester attached to lines 3 and 5.

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Introduction

In the production of vellur products, it is important that the colors are uniform and the quality meets the standard requirements. The formation of these fabrics into a finished product involves a number of technological processes. At each stage of the process, the competence of quality controllers and staff is important. The following is the sequence of the manufacturing process of Vellur products.

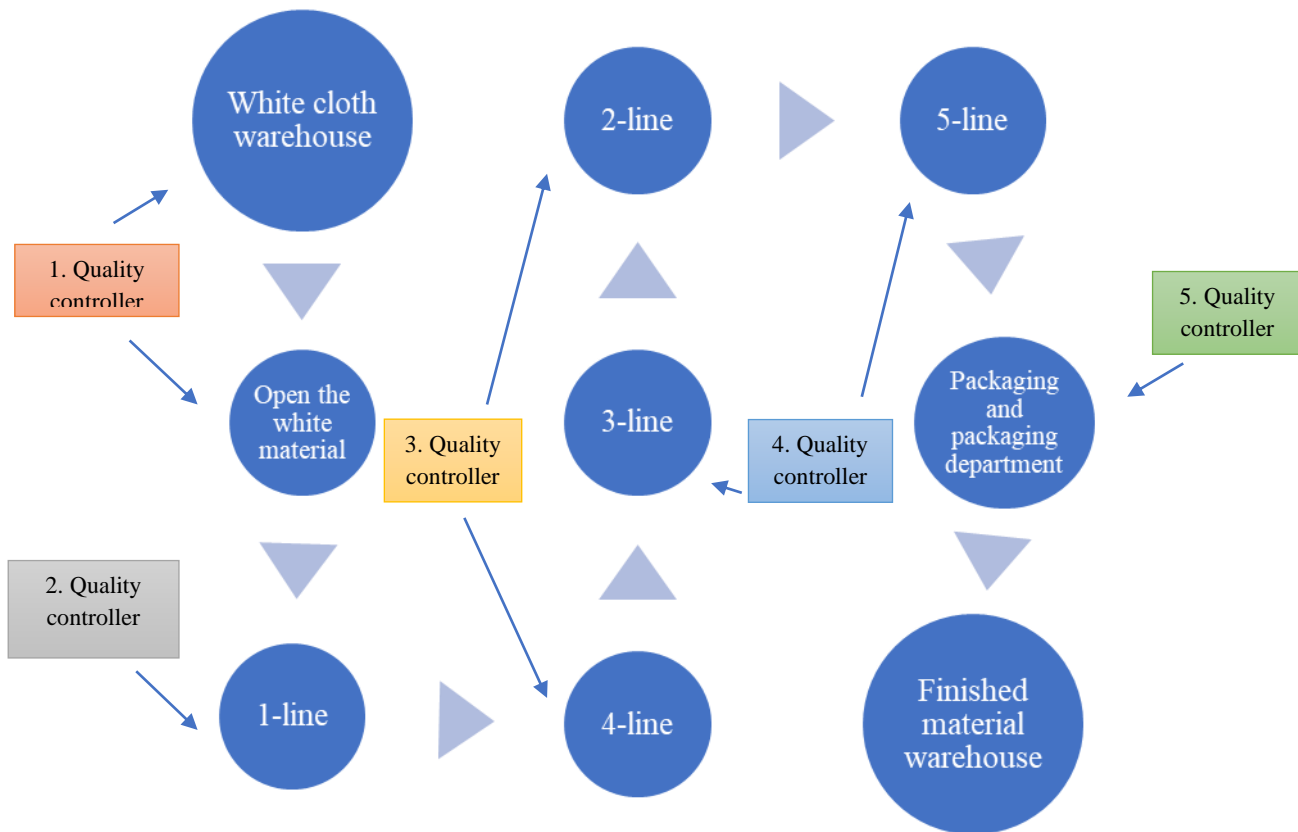


Figure 1. Technological process sequence.

In this process sequence, the tasks of the quality controller attached to each line are performed in order for them to perform their task correctly:

- Quality Controller - consists of checking the certificate of materials received in the White Material Warehouse, checking the quantity of each batch and placing the raw materials by type. Visually inspect the white fabric when opening, and take precautionary measures if the material is defective.
- Quality controller - is responsible for the product in 1 line. This line can be made of white matte or finished material. The main task of the quality controller in this line is to record the quality indicators of each product on the process map using the given organizational standard and to take immediate action in case of problems.
- The quality controller is responsible for lines 2 and 4, where the product is washed and materials are printed. For this process, the task of the quality controller is a bit complicated and requires accurate analysis of each metrological parameter. For example, how long the material is washed, how much temperature it dries, the amount of water needed, the color does not fade after washing, and so on.
- The quality controller is responsible for lines 3 and 5. The lines are dyed and the flowers are printed using round patterns. The task of the quality controller is to take samples from the dyed materials and test them in the laboratory and use the test results to separate the materials and apply them to the processing of substandard materials. During the printing process, care must be taken to ensure that the molds are arranged according to the standard requirements and that the colors and materials are printed correctly.
- Quality Control The work of the quality controller in the “Packaging and Packaging” section is very difficult and is responsible for each wrapped and packaged material. The main task is to separate scrap and poor quality materials.

It is obvious that each quality controller is responsible for the line assigned to him, that is, their performance has a direct impact on product development. As a recommendation, the responsible quality controller for lines 3 and 5 is recommended to use a test device that differentiates the colors with a sample after dyeing a new innovative type of fabric called “CIELAB”. The following is the metrological and specific data of this device.

Display mode	CIELAB
color difference formula	& Delta;E * ab
Lighting status	Recommendation CIE: 8/d
light source	D65
Sensor	Photodiode array
Measuring diaphragm	Φ8 mm
Measurement conditions	Observer: Standard Observer CIE 10 °
measurement range	L:0-100
Repeatable Precision	& Delta;E <0,08
difference table	& Delta;E <0,2
Measurement time	1 second
Memory capacity	100 standard samples and 10000 samples
Источник питания аккумулятора	Li-ion battery, measurement 5000 times
Lamp life	5 years over 160 million measurements
Display screen	TFT true color 2,8 inches @(16:9)
External interface	USB2.0 (USB-B) RS-232 (115200bps)
Operating temperature range	0 °C-40 °C (32 °F-104 °F)
Storage temperature range	-20 °C-50 °C (-4 °F-122 °F)
Humidity range	Relative humidity less than 85%, non-condensing
Net weight	700 g
Размер The size	199x68x90 mm
item after package	400x240x340 mm
Standard Accessory	AC adapter/Li-ion battery 3000 mAh
Optional accessory	Flour Meter/Micro Printer
Battery power supply	Li-ion battery, measurement 5000 times

Conclusion

In conclusion, every process is important for the production of vellur materials. Process improvement depends on the machine or controller. In this article, we have slightly increased the capacity of the 3-line controller and managed to improve the technological process.

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