

## THE ROLE OF QUALITY CONTROL IN THE PREDICTION AND REDUCTION OF PRODUCTION DEFECTS OF SOME TEXTILE PREPARATION STAGES (WARPING)

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### Abstract

All factories in producing fabrics and textiles are seeking to the upgrading of industrial process and reducing the appearance of defects and errors that affect the quality of the product and disrupting the production. Quality control management and production tracking are playing an important role in the measurement and follow-up of the production rates and its quality to maintain the best performance of the production process and upgrading it.

The aim of this research is to follow up the production lines of warp threads preparations and to find the errors and defects always associated with this phase and identify the causes and quantify and try to minimize them and reduce their appearance and get rid of the obstacles affecting the quality of this stage and treat them which will enhance and not disrupt the following stages in the production process.

The importance of the research is to get to the original points of the defects and identify the causes of these errors and how to treat them to work on avoiding them and make the final product to reach the required quality and not delay the following stages in the production process.

The research hypothesis that some of the errors in yarn preparation and spinning stages have their impact in influencing the quality of the performance of warping stage, in addition to other errors that may occur as a result of non-compliance and negligence in the order of color repetitions required to produce some warp beamings while preserving the quality of dyeing and the cones that comes from factories.

Application of ISO 9000 in textile factories

In a fast changing world, the importance of quality systems (Qs) in organizations' excellence has been felt more and more demanding, because it ensures consistent and desired product quality. In recent years, ISO 9000 standards have gained considerable attention specially in the textile industry .ISO is important for international trade as well as domestic business .

The role of quality control and production is mainly in predicting errors and defects that affect the preparatory stages for the manufacture of textiles and so reducing the appearance of defects and errors that affect the quality of the product ISO 9000 has evolved and is being updated continuously to provide necessary conceptual and structural input to the development of such a system. As a consequence, customers demand ISO 9000 certification from their suppliers. Implementation of ISO 9000 standards requires the establishment and development of a documented system, and the involvement of all the employees in adhering to it.

## The experimental work

During the practical work, certain deficiencies were identified. In order to remove these deficiencies, it was felt that executives had to study the problem in details and try to solve it.

A Following-up and monitoring of the full production in fabrics factory was done for month , 24 hours a day, with a truncated of weekend days, and a follow-up certificate has been designed to record all production, stops and problems encountered during the run-time for each warp beam. When the complete study of the warping stages and warp production were finished the results were analyzed. 51 warp beams, 9680 ends for each beam, 20400 m total warp length production, 650 m/min average speed for warping machine and beaming speed 85 m/min .

## Results and Discussion

### First: Time

The actual running time was divided into two parts

- 1- Installation of the threads on the warp creel, which is an important stage, but it was found that it is significantly affected by the number of the actual used cones in the warp creel specially when associated with a specific color repeat, as well as the time required for the installation of each thread.
- 2- The time of leasing warp sections, this stage is associated with the number of warp sections for each required beam, as well as the time of submission of each section independently, according to the efficiency of the machine operator and the extent of his experience and speed.

### 2- Stopping time

The actual warping machine disruption time were measured as time and causes of failures were monitored, and it was found that:

- 1- The time of submission of fixing each break yarn it is according to the quality and efficiency of the warp threads used which had a profound effect the speed of warp beaming. And clear the increase these number
- 2-The time taken for the restart and replacement of the cones as a result of unequal yarn lengths on the cones which caused the disruption of warping machine in waiting for dividing of the cones
- 3-The mechanical disruption and stops has caused the disruption of the production process of the warping stage because it is not connected to tables set for the regular maintenance of machine and there is not a determined times for regular maintenance of machinery which had a deep impact in stopping the machine during the production process, thereby hindering the production process completely and affect the timeliness of production and the connection to the external market.
- 4-The time required for re-installing and ordering of the cones on the creel and this is due to the inaccuracy of employment commitment to required warp repetition data, which illustrates the importance of the role of the departments of quality and production tracking to focus on such errors and work to prevent it.
- 5- The time of changing the irregular dyed cones , this defect was emerged during the process as a result of the heterogeneity of the color in each cone which has a great influence in the disruption of warping process in order to maintain the quality of the produced beam and its uniformity.

Second: The efficiency

By calculating rates of production efficiency and figures ,it was found that:

1- The production efficiency

1- The warping process has reached 73.24% of the overall beaming process according to other external factors affecting the rates of performance in the limited time because it works on a combined image of warp threads on the whole beam.

2-The efficiency of withdrawn warp sections had negatively affected the time required for warping which came second after the installation of warp creel and its impact on production efficiency.

3- Changing and preparing of warp beams to transfer warp threads have an impact on the time during the process as a result of separation and stopping of the warping machine which is connected to the number of operators and the efficiency of the human factor and experience

5- One of the common and important defects, which urges those involved in the departments of quality comprehensive to pay attention are the lengths of thread on the cone are not equal, which affected the warp stops during process and to increase the disruptions ,in addition to its bad influence on yarns winding and production tables delaying

6- Mechanical stops affected negatively on the functioning of the production process due to the lack of attention to the maintenance of the machine and attention to efficiency, which has affected the efficiency of the required production.

7- As the result of the lack of attention and precision during the installation and preparation of warp creel, especially when preparing warp beams of complicated color constructions, which leads to errors in the threads order inside the fabric which affect disruption rates as well as the corruption of the entire production process and leads to the production to be refused.

