International Journal of Education, Social Science & Humanities.
Finland Academic Research Science Publishers
ISSN: 2945-4492 (online) | (SJIF) = 8.09 Impact factor
Volume-12| Issue-11| 2024 Published: |22-11-2024|

OF DIFFERENCE IN LENGTH OF YARN YARN IN POORLY HEATED YARN ON YARN QUALITY

https://doi.org/10.5281/zenodo.14180748

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Abstract

In this article, the effect of the difference in length of individual threads on the quality of the thread during the process of adding threads to the winding process was determined. These values were graphed and analyzed for the effect of the machine on yarn stiffness.

Keywords

Textiles, warp, spinning, yarn, yarn cooking, twist, yarn tension, yarn winding speed, length.

Considering that the quality of 3-ply yarn is increasing day by day in the production of new range of products, it is very important to pay more attention to the process of splicing and re-winding in the textile industry. is one of the issues. The analysis of modern requirements for textile and light industrial products in the world market shows that the task of increasing the types and properties of single, spun and 3-ply yarns used as raw materials in order to increase the range of these products is manifested. It is known that any twisted yarn is produced by combining several single or monofilaments and giving them the necessary twist to ensure the expected properties of the yarn.

If we take into account that attention to the quality of spun yarn in the production of new product ranges is increasing day by day, the process of re-winding by adding single yarns is considered a decisive step in ensuring the main quality indicators of spun yarn. we can see more attention being paid. It is clear from practical experience that the process of adding and wrapping is very important, especially in the production of fine products [1,2,3,4,5].

study the technique and technology of wrapping and baking fiber materials . and improvement according to b scientific noun works on Do you want to work ?

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and from cooked yarn cloth work what 's up and types to multiply k ' take will come [6] . H now in the day t arrow farming in enterprises basically cooked yarn double twist baking in cars work let 's go . In our country , in rotary cookers cooked various aimed at increasing the range of yarn and ensuring its competitiveness carry out research is going

Research works Namangan region "Popfen" Textile in LLC enterprise was carried out on spun yarns produced on an integrated SSM TW2-D splicing machine and Saurer Compact Twisting spinning machines. During the experiments, yarns with a linear density of T_{ip} =36×3 tex and T_{ip} =29.5×3 tex were taken, and the length differences of individual threads were determined. For this purpose, using a known methodology [7], in order to determine the difference in length of individual threads under a certain initial tension placed on the thread, the initial 500 mm long baked between the clamps of the KU-500 twist detection device the twists of the thread are completely reversed and the individual threads are brought to a parallel position. The clamps holding the ends of the fully parallel single strands, i.e. the left side clamping clamps, are loosened and the length of each single strand is measured as the pointer on the instrument scale deviates from the "zero" position. After that, with a visual estimate of the length of the single threads, the thread in the tightest position was cut, and then the length of the single thread remaining in the equipment was determined.

The difference in the length of individual yarns in the cooked yarn of the sample was calculated in percentages compared to the cross-sections clamped in 500 mm long clamps. Most experts believe that the difference in length of individual threads in cooked threads should not exceed 2.5% [7].

By comparing the results of the histogram shown in Figures 1 and 2, it is possible to conclude that, in the process of winding individual threads, the tensioning device is considered uncontrolled and the tension of the threads is different when the tensioning device is not loaded . remains large. Therefore, the uncontrollable individual yarns during the splicing process lead to a large variation in the length of the individual yarns in the cooked yarns.

Also, in the process of additional winding, the difference in the length of the single threads in the baked threads, when a load of 8 and 16 g was placed on the tensioning device for the thread T_{thread} =36×3 , recorded lower results. This situation is considered good. And on the contrary, the difference in the length of the individual threads in the cooked thread without putting a load on the tensioning device during the winding process and when a weight load of 24 g is

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applied is high in all results, that is, in Tip=36×3 thread (33 and 27 mm), and T thread =29.5×3 thread remains (22 and 25 mm).

In the process of additional winding, when a load of 8 and 16 g is placed on the tensioning device on the thread T = 29.5×3, the difference in length of the individual threads in the cooked threads is lower, that is, in the case of Tip=36×3 (8 and 10 mm), T thread = 29.5×3 threads (4 and 6 mm) are recording the results. This situation is considered good.

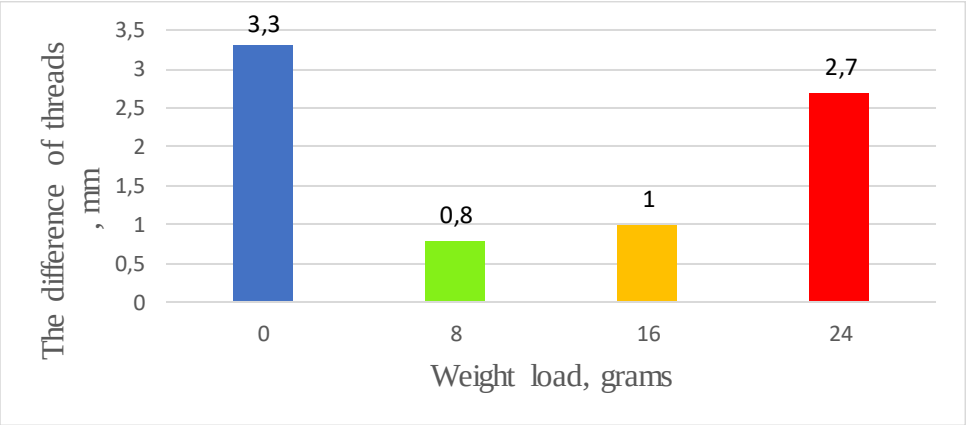

Figure 1. T yarn = 36×3 tex on the baked yarn

(number of twists K=490 br/m) by the length of single threads as a result of weight load change

the difference

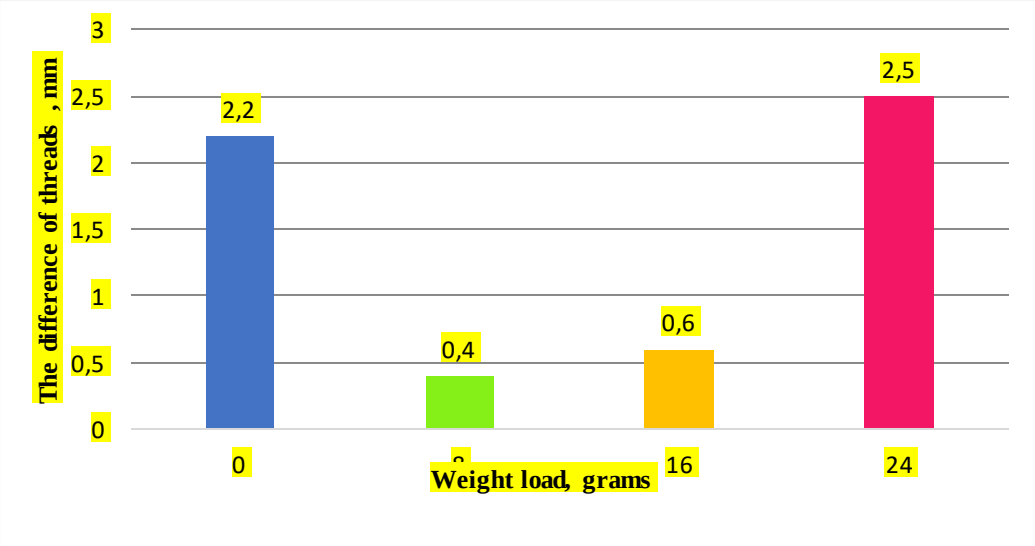

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Fig. 2 The difference in the length of individual threads as a result of the change in the weight load in the cooked thread with a thickness of T thread =29.5×3 tex (the number of twists K=490 br/m)

Table 1

N	Indicators	The length of a single thread is 500 mm			
		thread twist, br/m 490			
1	Puck weight, grams	0	8	16	24
1	36x3	533 mm	508mm	510 mm	527 mm
2	29x3	522 mm	504mm	506mm	525mm

Therefore, excessive load on the tensioning device during the splicing process, depending on the linear density of the thread, will inevitably lead to negative effects, because the excessive load on the tensioning device during the splicing process will cause stretching of the fibers in the splicing threads. leads to an increase in the length difference of the individual threads being added due to remaining. This, in turn, causes the threads to become stiff during the cooking process.

In the case of different tension, the thread with the looser tension wraps around the thread with the higher tension, which leads to one of the defects of the cooked thread - threading.

The purpose of optimizing the technological parameters of the splicing process is to reduce the unevenness of the spun threads, to increase the friction resistance, and to improve the toughness and flexibility. Hence, it is a necessary process to produce thread at uniform tension. As a result of the analysis of the characteristics of yarn preparation techniques and technologies, taking into account the fact that various types of yarn are produced on machines of different constructions, the main drawback of yarn preparation techniques and technologies is that there are enough recommendations and developments to adjust the devices of single yarns being prepared for baking with the same tension. it was found that it was not. From the results of this research, we can conclude that in order to achieve the required quality result, it is important to pay attention to the tension of the threads in the process of adding, and to keep the tension of the thread uniform in the tensioning devices, T_{thread} =36×3 for threads with a linear density of 8 gr For threads with

linear density between 16 gr and T $_{thread}$ = 29.5×3, it is appropriate to provide tension from 8 gr to 16 gr.

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