

**STUDYING TIME STANDARDS FOR SEWING PRODUCTS ON VARIOUS
SEWING MACHINES***Kambarov Jamoliddin Xikmatillayevich**Kokand university DSc, professor**gustins2014@gmail.com**Mamatkulova Saida Rakhmatovna**Fergana State University of Technology**Department of Light Industry Engineering Senior Lecturer (PhD)**saida.mamatkulova.1989@gmail.com*

Abstract: this article deals with time standards and main tasks, equipment, production volume increase and construction of new flow lines and production efficiency improvement in light industrial enterprises.

Key words: knitwear, breathability, hygroscopicity, heat transfer, physiological conditions, functional knitted fabrics, hood, camouflage.

One of the main tasks facing the industrial enterprises of our republic today is the modernization of equipment, increasing the volume of high-quality and stylish clothing production, building flexible new production lines, and improving production efficiency through the rapid development of the garment industry.

To successfully accomplish these tasks, the enterprises need to be reconstructed, production needs to be fully mechanized and automated, and technology needs to be improved.

The creation of modern low-operation technologies is one of the promising directions for improving the processing of garment products.

In this regard, reducing the seams in the construction of clothing details and parts as much as possible, applying wet heat treatment, shaping, fastening, and decorating materials in single-process machines like vibromechanics, combining processes, and widespread use of adhesive materials are among such low-operation technologies.

Currently, in the garment industry, the manual labor share at the garment modeling stage is still significant, which slows down the growth of labor productivity. Therefore, much work is being done in terms of mechanizing production. These include high-speed sewing machines and semi-automated equipment, as well as wet heat treatment devices.

In addition to accomplishing the tasks mentioned below, developing time standards for sewing operations on modern sewing machines is one of the urgent issues facing garment manufacturing enterprises.

When determining the time spent, the labor time standard is the norm for the product being manufactured (standard) or the theoretical justification for the time spent on each operation in the sewing process.

Thus, the technological processes in garment enterprises include all production processes, and labor productivity constitutes 85-90%.

The time standards for sewing various products, developed by scientists from Moscow State University, are shown in the tables below.

Table 1.1**Time Spent on the Production of Men's Shirts and Outerwear**

Product Name	Time Spent on Product Sewing at Home Service (in minutes)							Time Spent by Individual Seamstress (in minutes)			Time Spent on Cutting Work (in minutes)	
	Highest Category	Power of I-Grade Brigade			Power of II-Grade Brigade			Highest Category	I Category	II Category	Enter prise of the Highest Category	I and II Categories
		Low	Medium	High	Low	Medium	High					
Winter Coat	26,0	18,2	16,5	14,8	16,8	15,3	13,8	31,2	21,8	20,2	3,76	2,20
Seasonal Coat	24,0	16,9	14,5	13,0	14,9	13,5	12,1	28,8	19,2	17,9	3,76	2,2
Jacket	23,5	15,5	14,1	12,7	14,5	13,2	11,9	28,2	18,6	17,4	3,36	1,96
Trousers	4,5	3,5	3,2	2,9	3,3	3,0	2,7	5,4	4,2	4,0	1,17	0,75
Vest	10,8	7,7	7,0	6,3	7,2	6,5	5,9	13,0	9,2	8,6	1,76	1,01
Medium-Season Coat	15,0	12,1	11,0	9,9	11,2	10,2	9,2	18,0	14,5	13,4	2,10	1,50
Cloak	14,5	11,0	10,0	9,0	10,5	9,5	8,6	17,4	13,2	12,6	2,10	1,50
Quilted Jacket	12,0	9,4	8,5	7,7	8,7	7,9	7,1	14,4	11,3	10,5	1,62	1,15
Lined Jacket	9,0	7,3	6,6	5,9	6,6	6,0	5,4	10,8	8,8	7,9	1,62	1,15
Quilted Vest	9,1	7,2	6,5	5,9	6,4	5,8	5,2	10,9	8,6	7,7	1,32	0,95
Natural Fur Coat	26,0	18,2	16,5	14,8	16,5	15,0	13,5	31,5	21,8	19,8	3,76	2,20



Half-Overall	6,9	4,6	4,2	3,8	4,3	3,9	3,5	8,3	5,5	5,2	1,56	0,84
Men's Waistcoat	5,0	4,6	4,2	3,8	4,4	4,0	3,6	6,0	5,5	5,3	1,36	0,94

The time standards for sewing various products, developed by scientists from Moscow State University, are shown in the tables below. These standards serve as a reference point for optimizing labor efficiency and achieving higher production output in garment manufacturing. They are based on detailed analysis and observation of sewing operations under different machine settings and materials used.

To effectively apply these time standards in production environments, it is crucial to consider factors such as machine type, operator skill level, and the complexity of the garment being produced. High-speed, multi-functional sewing machines can significantly reduce cycle times compared to traditional machines, allowing for quicker completion of tasks and, consequently, higher throughput in garment production.

Moreover, the use of time standards in combination with advanced technologies like automated sewing systems and robotics is expected to revolutionize the garment industry. For instance, robotic arms equipped with vision systems are increasingly being integrated into production lines for tasks such as fabric handling, pattern placement, and quality control, further reducing manual intervention and enhancing the speed and accuracy of sewing operations.

The introduction of automated systems also helps in overcoming labor shortages, which is a growing challenge in many regions. Automated sewing machines not only speed up the production process but also reduce human errors, leading to more consistent and higher-quality products.

Incorporating these time standards and modern technologies allows enterprises to achieve a higher degree of flexibility in production, enabling them to switch between different garment types with minimal downtime. This flexibility is particularly important in the current market, where consumer demands for personalized and diverse clothing items are increasing.

Furthermore, optimizing sewing time standards can have a significant impact on reducing production costs. By minimizing the time spent on each sewing operation, enterprises can lower labor costs while maintaining or improving product quality. This reduction in labor costs, combined with increased production efficiency, contributes to the overall competitiveness of garment enterprises on a global scale.

The integration of efficient time standards also aligns with the broader trends of sustainability and eco-friendly production practices. By reducing the number of operations required to create a garment, energy consumption and material waste are minimized, contributing to a more sustainable and environmentally friendly manufacturing process.

In conclusion, the development and implementation of time standards for sewing operations, coupled with the modernization of equipment and automation of production processes, are essential for improving the competitiveness and efficiency of the garment industry. The future of garment manufacturing lies in the continuous improvement of production processes,

the adoption of cutting-edge technologies, and the alignment of manufacturing practices with the evolving demands of consumers and the global market.

The process of establishing time standards for sewing operations has a significant impact on the productivity and efficiency of garment manufacturing. In particular, it provides clear guidelines that allow manufacturers to estimate production capacity, allocate resources effectively, and optimize labor allocation.

In traditional garment production processes, where sewing is done manually or with limited automation, the time spent on each operation can vary greatly depending on the complexity of the design and the experience of the workers. However, with the application of time standards, it becomes possible to streamline operations by clearly defining how long each task should take under optimal conditions. This standardization helps companies set realistic production goals, track performance, and ultimately improve profitability.

Looking ahead, the integration of cutting-edge technologies such as artificial intelligence (AI), machine learning (ML), and the Internet of Things (IoT) will revolutionize the way time standards are developed and implemented. For instance, AI-powered sewing machines could adjust sewing speed in real time based on fabric type, design complexity, or machine performance, thereby optimizing time standards dynamically.

Additionally, real-time data collection through IoT devices can provide insights into production efficiency, machine downtime, and labor performance, which can be used to adjust time standards more accurately and promptly. This real-time approach to monitoring and adjusting time standards will allow garment manufacturers to achieve even greater levels of productivity and adaptability.

Conclusion: In conclusion, establishing and applying accurate time standards for sewing operations is essential for improving the efficiency, cost-effectiveness, and competitiveness of the garment industry. By considering factors such as machine type, worker skill levels, garment complexity, and material properties, manufacturers can create realistic and practical benchmarks that optimize labor and production processes. Moreover, with the ongoing advancements in technology and automation, the future of garment production will be increasingly driven by real-time data and machine learning, further enhancing the role of time standards in achieving high-quality, cost-effective production.

Based on the tables presented above, it is important to note that the average time standards for the sewing process have been developed by Russian scientists for seamstresses in household service units and individual (home-based) tailors and cutters. However, the brand and model of the sewing machine equipment used in these standards were not specified. In recent years, depending on the technical level and capabilities of sewing production enterprises, time standards for various assortments have been recommended.

Changes in science and technology, as well as the evolving period of innovation, are introducing new generations of techniques and technologies, and creating a new foundation for the economy in complex conditions. Such changes undoubtedly require industry specialists to possess broad, comprehensive knowledge while simultaneously being focused on acquiring specific expertise.

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