

## QUALITY MANAGEMENT SYSTEM AND ITS ANALYSIS IN "MEHMASH" LIMITED LIABILITY COMPANY OF NAMANGAN REGION

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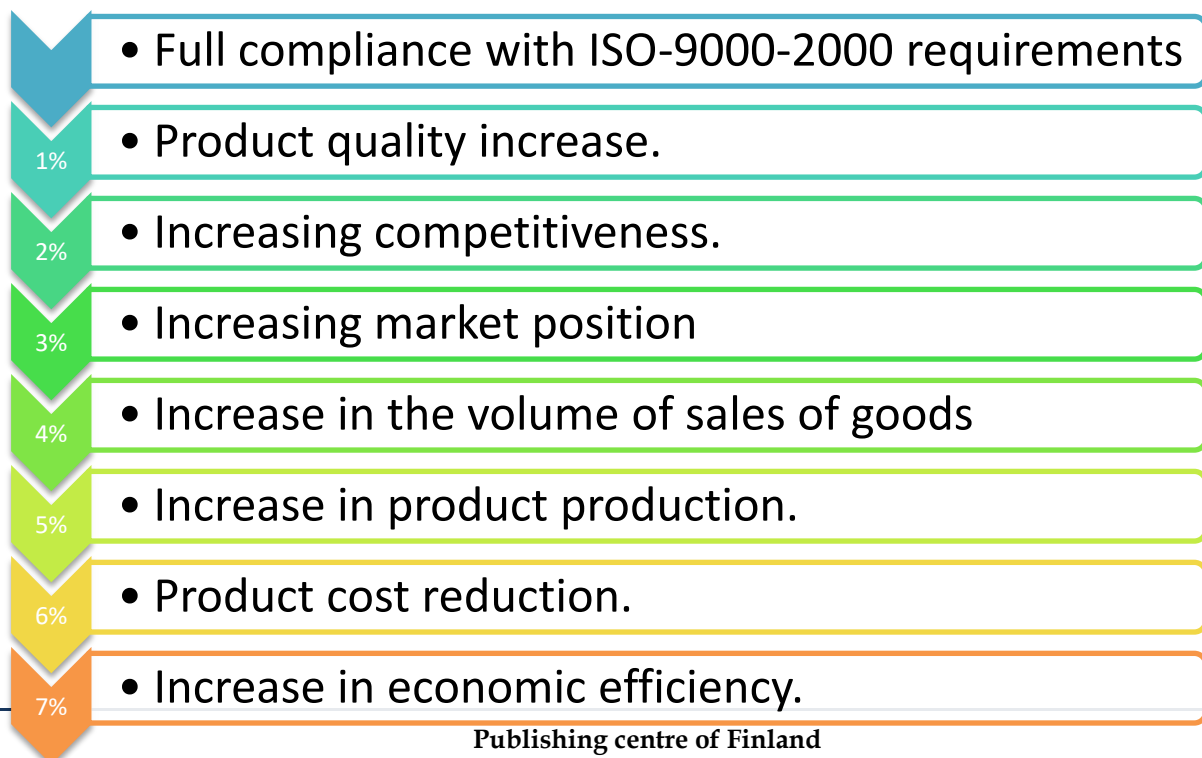
### **Abstract**

*this article presents theoretical and practical developments on the scale of MEXMASH limited liability company located in Namangan region, quality control, international quality standards and implementation, factors affecting product quality, quality management, quality control methods.*

### **Key words**

*quality, management, ISO standards, international management, practical developments.*

Product quality is the main principle for the enterprise, and for this, "MEXMASH" limited liability company has established full quality control based on the organization standard developed in accordance with the European DIN standard and ISO 9001:2015 quality management system. In addition to checking general quality parameters, products are also subjected to practical tests depending



on the place of use. The purpose of this is to ensure that quality products are delivered to consumers.

### **Figure 1. ISO – 9000-2000 quality steps**

Product quality is an economic category that represents the relationship between producers and consumers, the relationship between the enterprise and the state regarding the production of quality products, the fulfillment of planned tasks, and the determination of product prices. In addition, product quality represents the relationship between enterprises in terms of financial incentives for quality products and financial responsibility for the production of low-quality products.

Product quality is an economic category that describes the pace of technical development, labor productivity, and thus the efficiency of social production. Systematic improvement of product quality is a necessary condition for economic development, increasing the efficiency of social production, and people's well-being is one of the main factors of increasing.

"MEXMASH" limited liability company has received a certificate of conformity based on the requirements of the international ISO system, and product quality and efficiency have been established following the following steps.

If the efficiency of each step shown in Figure 1 increases by 1%, the overall efficiency is 28-30%. This conclusion was reached as a result of comparing the experience of the USA, Japan and other economically developed countries with the reforms being carried out in Uzbekistan.

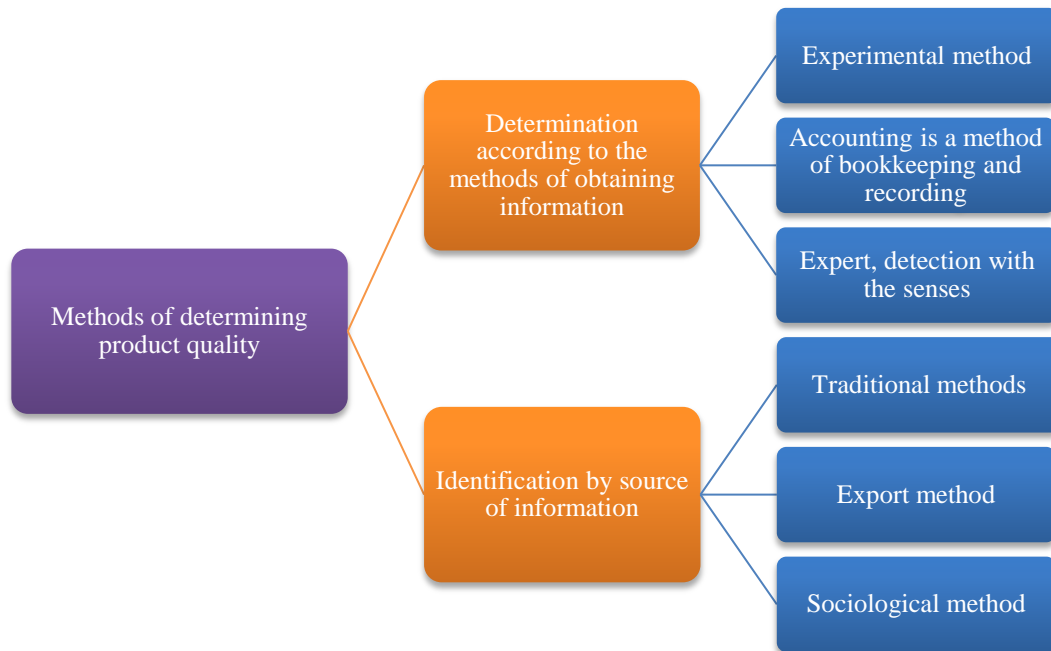
Therefore, every producer and seller in the market strives to get ISO-system level certificate.

Clients of "MEXMASH" limited liability company operating in our republic (in all regions of our republic):

- Large enterprises;
- Small business entities;
- There may be legal entities and individuals operating individually.

When determining the quality of a product at the "MEXMASH" limited liability company, great attention is paid to ensuring that its normative technical documents are at the required level, and to all information sources and the method by which they are determined. We can see the conclusions based on many experiments in the company in the following picture.

### **Figure 2. Methods of product quality determination at "MEXMASH" LLC.**



When the enterprise receives a certificate of conformity for its product, it applies all the methods in the picture, and all documents based on positive results are processed in the enterprise and are included in the types of activities of the enterprise. Enterprises must determine the quality level of their products based on normative technical documents.

For example:  $Q = \frac{K}{K_b}$

In this: Q - quality indicator;

K - an absolute indicator of the quality of a certain product;

$K_b$  - absolute quality indicator of the product (standard).

If the result obtained on the basis of experience is  $Q = 1$ , the quality of the product will remain equal to the reference indicator, which is definitely a positive result.

If the quality level is  $Q > 1$  or  $Q < 1$ , then there has been a change in the product quality level.



*Figure 3. Three factors that ensure quality and competitiveness.*

All three factors have a common point of intersection, which is quality and competitiveness. If the company's products are produced in accordance with the international ISO standards in all three cases, they will definitely find their customers not only in the domestic market, but also in the foreign market.

In this regard, there are enterprises competing with "MEXMASH" limited liability company. These enterprises may differ in their technical support. For example, the recommendations of several international organizations are definitely taken into account in the creation of international standards when assessing product quality. The level of accuracy of some technical equipment is very low.

For example, carving machines depend on the amount of elements present in the metal. If the norm is 0.120 mg/kg, it indicates that the quality of the product is moderate. In practice, this apparatus cannot determine the amount of an element present. However, in order to extend the appearance, quality and shelf life of their products, some entrepreneurs increase or decrease the amount of substances several times. Therefore, it is necessary to use analyzers with a very high level of accuracy.

In this regard, the association "Uzdavstandart" regularly conducts technical inspections of all enterprises issuing certificates of conformity.

"MEXMASH" is a limited liability company that passed accreditation in 2004 and obtained the right to issue a certificate guaranteeing the quality of fastening products in 2004. In addition, the society provides methodical and practical support

to enterprises and organizations. It has been providing technical and technological support in the preparation of normative technical documents and the development of a new type of product.

Due to the situation described above, "MEXMASH" limited liability company will have to solve tactical issues related to quality.

- "MEXMASH" limited liability company - the activity of consumers should be higher than the expectations of customers;
- types of activities should be constantly improved;
- the time of service and its cost should always increase;
- to expand the range of customers applying for the service and to find solutions to the problems that interest them;
- in the future, to open "branch" branches under the care of their societies;
- to always ensure that the services of "MEXMASH" LLC are legal, accurate, fast, cheap and meet the requirements of international ISO - 9001: 2000 and MEK - 17025-1999;

"MEXMASH" limited liability company was re-registered on December 19, 2022. However, since 2004, the Enterprise has been fully introducing the ISO-9000 quality system and conducting all-test experiments based on new techniques and technologies. In 2000-2003, the national certification system was combined with the international ISO system. The requirements of ISO/MEK 17025-2000 prevail when issuing a product quality certificate. In 2018-2020, all outdated equipment of the enterprise was replaced by the most modern technical equipment. The new tool is 10-100 times more accurate and faster.

These reforms indicate that "MEXMASH" limited liability company has chosen the right path. A quality department was established together with the internal audit department of the enterprise and a quality management group was established. At the same time, all normative documents related to quality have been kept on the basis of the ISO series. In accordance with SM, all requirements of ISO 9002 were met without deviation, especially the precision required in the operation of each joint. All processes from receiving the order to issuing a certificate are now recorded. For each step, its executor and responsible person was identified. Such a procedure increases the level of product quality guarantee along with the improvement of service quality. Thus, the society successfully launched all types of quality certificates issued by ISO-9002 and developed a national certification method. A methodical manual on quality management was developed.

The creation of a quality certificate requires a clear answer to three questions before "MEXMASH" limited liability company:

- What does the consumer, client want from us?
- what can we give them?
- What should we do so that our customers always stay with us?

For enterprises producing fastening products, obtaining a reliability quality certificate is today's requirement. This ensures stable operation of the enterprise for a long period of time. Currently, the quality certificate in accordance with the ISO system is also thinking about tomorrow, which is always an active participation in investment and innovation fields and increasing the reputation of the brand of Uzbekistan. If we analyze the results of market research and marketing research for each type of product from a theoretical point of view, we can see that the main reason is that some types of syrup and samorez products are import substitutes and export oriented. Achieving such results is based on full compliance with international ISO requirements for product quality assessment. Another reason is the application of new technology in the field. The direct connection of the limited liability company "MEXMASH" with the market leads to a marketing analysis and a SWOT analysis. If we study the market demand for syrup, wire, pipes and screws, we can see the strengths and weaknesses of our domestic markets:



**Figure 4. SWOT analysis of the consumer market of "MEXMASH" LLC**

Table 1

The situation in the market of the demand for fastening products for which "MEXMASH" Limited Liability Company has received a certificate of conformity.

No	Indicators	in Tashkent	In the provinces
1	Demand status	High	Average
2	Matching supply and demand	Above average	Average
3	Competition	High	Above average

Source: table prepared by the researcher.

The demand for fastening products is high today. If there is a clear answer to the situation in the city of Tashkent and the regions, it is necessary to take into account all its socio-economic aspects.

The high demand in Tashkent is primarily due to its quality. Secondly, it is clear to everyone that it has a price. Because local raw materials and modern technology increase the quality and competitiveness and ensure a certain low cost.

By analyzing the above information and sources, it is required to evaluate the following problematic situation. Due to the correct use of the situation, it is intended to achieve great economic results;

1. The cost of products produced in "MEXMASH" limited liability company is 1.1% higher than similar enterprises;
2. The certificate guaranteeing product quality fully meets the international ISO requirements;
3. Surplus funds spent on technology, raw materials, personnel qualifications, quality and competitiveness were returned threefold. The main factor here is product quality and competitiveness.

So, in recent years, the production indicators of "MEXMASH" limited liability company are as follows.

**Table 2**  
**Production indicators of "MEXMASH" LLC**

No	Indicators	Unit of measure	2020	2021	2022
1	A planned product	tons	14360	20252	18192
	Including:				
	self-tapping screw	tons	10160	16152	18195
	pipe	tons	4200	4100	0
	Greenhouse	ga	10	3	3,5
2	Manufactured product	tons	11165	13424	13044,4
	Including:				
	self-tapping screw	tons	9265	12406	13044,4
	pipe	tons	1900	1081	563,2

	Greenhouse	ga	3	3	6,7
3	Implementation of the uction plan	Percent	77,8%	66,3%	74.8%
	Including:				
	self-tapping screw	%	91,2	76,8	71,7
	pipe	%	45,2	24,8	Unplanned
	Greenhouse	%	30	100	191,4

Source: table prepared by the researcher.

Defects increase and quality drops sharply if production control is weakened.

The types of quality control costs to producers at "MEHMASH" limited liability company are as follows:

- 1 - preventive costs;
- 2 - costs for quality assessment;
- 3 - losses due to broken products;
- 4 - general expenses.

Figure 9 below shows how quality improvement works are being carried out at "MEXMASH" limited liability company. 50% of quality costs are waste products. So, the production without brack increases the quality level of the product by 50%.

It is necessary to specify that the product is classified based on international (ISO-8402: 2004, p. 2.11) standards for the study of defects.

The use of international standards is one of the most important ways to enter the world market, to increase the export potential of every business entity, as well as of the entire country.

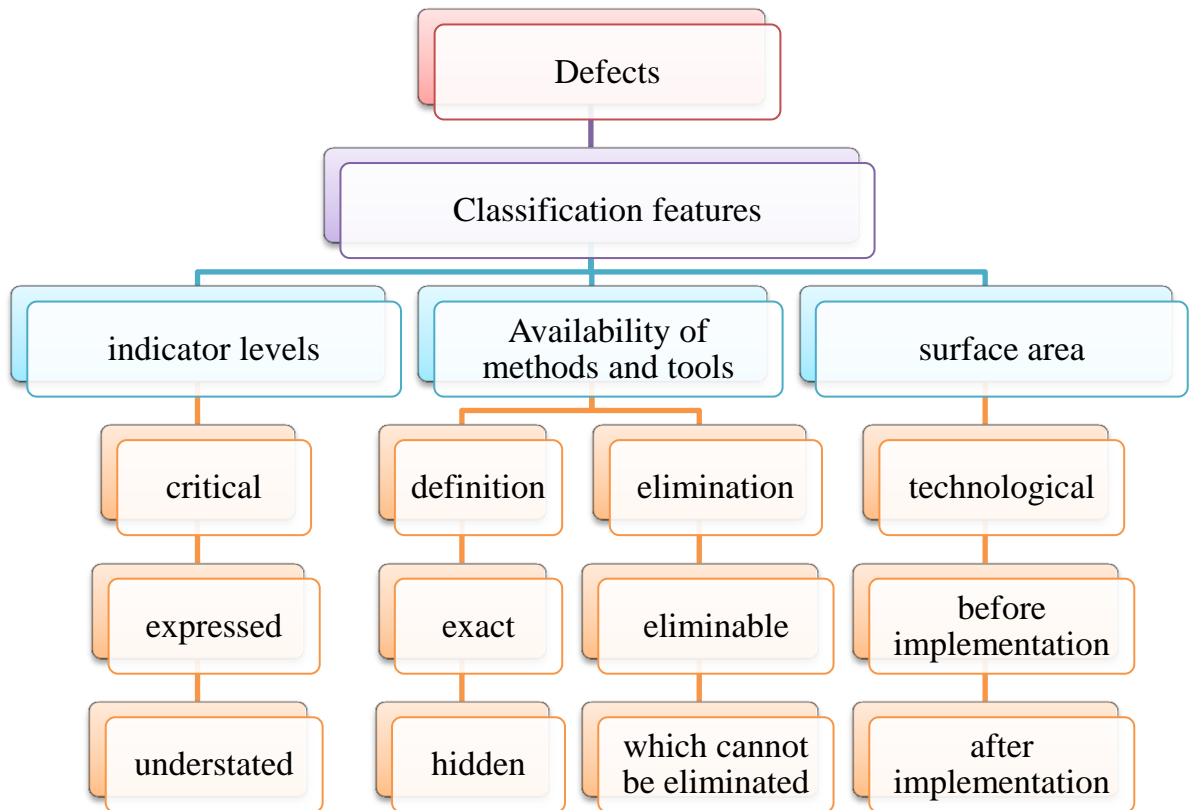
However, it is impossible to take international standards and start applying them as a national normative document. There are a number of conditions and specific procedures for this.

The general rules of application and adoption of international standards include:

1. International standards are applied on the basis of the country's membership in international and regional standardization organizations, as well as international agreements (contracts) on cooperation and contracts for production and delivery of products for export;

2. International standards are accepted (implemented) in Uzbekistan if their requirements meet the needs of the economy and do not conflict with the laws. It is allowed to use the international standard in research and experimental work.





**Figure 5. Quality improvement activities**

International (regional) standards are widely used in international standardization practice. Such standards summarize the world's scientific and technical achievements and advanced production experience aimed at meeting the common needs of most countries.

Accordingly, international standards ensure the successful elimination of technical barriers to trade, which is recognized by the Agreement on Technical Barriers to Trade of the World Trade Organization.

Wide use of international standards as national standards allows full implementation of the advantages of standardization, which is an important condition for increasing the export potential of Uzbekistan.

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