



Normative level of product quality in the construction industry in the digital economy

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ABSTRACT: The article is devoted to product quality assurance problems at enterprises of the construction industry in the digital economy.

KEYWORDS: Quality, defect, quality control, final products quality, quality level, single quality indicators.

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I. INTRODUCTION

The stable development of the national economy, in the modernization, allows ensuring positive results in the complex construction work of Uzbekistan. According to the State committee on statistics [1,2], high GDP growth rates have been achieved in recent years. They were provided due to the agriculture growth, where the growth was 1.8 times with an average annual growth for this period in 6.1%, industry, where these indicators were 1.7 times and 5.4%, respectively, the service sector, respectively, 2.3 times and 8.8%. The leading sector was construction, which provided 3.4 times growth over this period with an average annual growth in 13.4%. In order to strengthen the national economy position of Uzbekistan, the President declared 2020 in our country as the “Year of the science, education and the digital economy development”. This once again confirmed the innovative orientation of the further development of the national economy [2,3].

The study purpose. The construction quality, despite some improvement in its level in recent years, still does not meet the growing needs of our society. This also applies to housing construction, since the need for housing is one of the main needs of a person.

It is known that about 2/3 of the construction costs are the building materials, parts, structures costs, etc. This means that the builders’ labor is closely intertwined with the industrial enterprises work.

The quality of enterprises products in the building materials, products and structures industry is still far from satisfying modern requirements, and there is still a large share of additional costs directed to the defects elimination. The defects elimination made in the products, structures manufacture and their refinement is carried out at the stages of construction objects. Some defects appear at the operation stage and increase the building maintenance cost.

Results.

Research carried out by us in the industry enterprises of building materials, products and structures of the Republic of Uzbekistan shows that the implemented quality management systems are often informative in nature, they only inform about the state affairs. Feedbacks, in the operational form influences on production processes, are carried out in insufficient volume. Therefore, there are still great reserves for further improving product quality.

An analysis of our work shows that [4, 5]:

- over the past 10 - 15 years, a large number of studies and practical developments have been carried out to address individual issues related to product quality management and the quality management systems creation in construction organizations and precast reinforced concrete factories;
- the local and integrated quality management systems introduction gives tangible positive results, but does not yet cover all problem aspects;

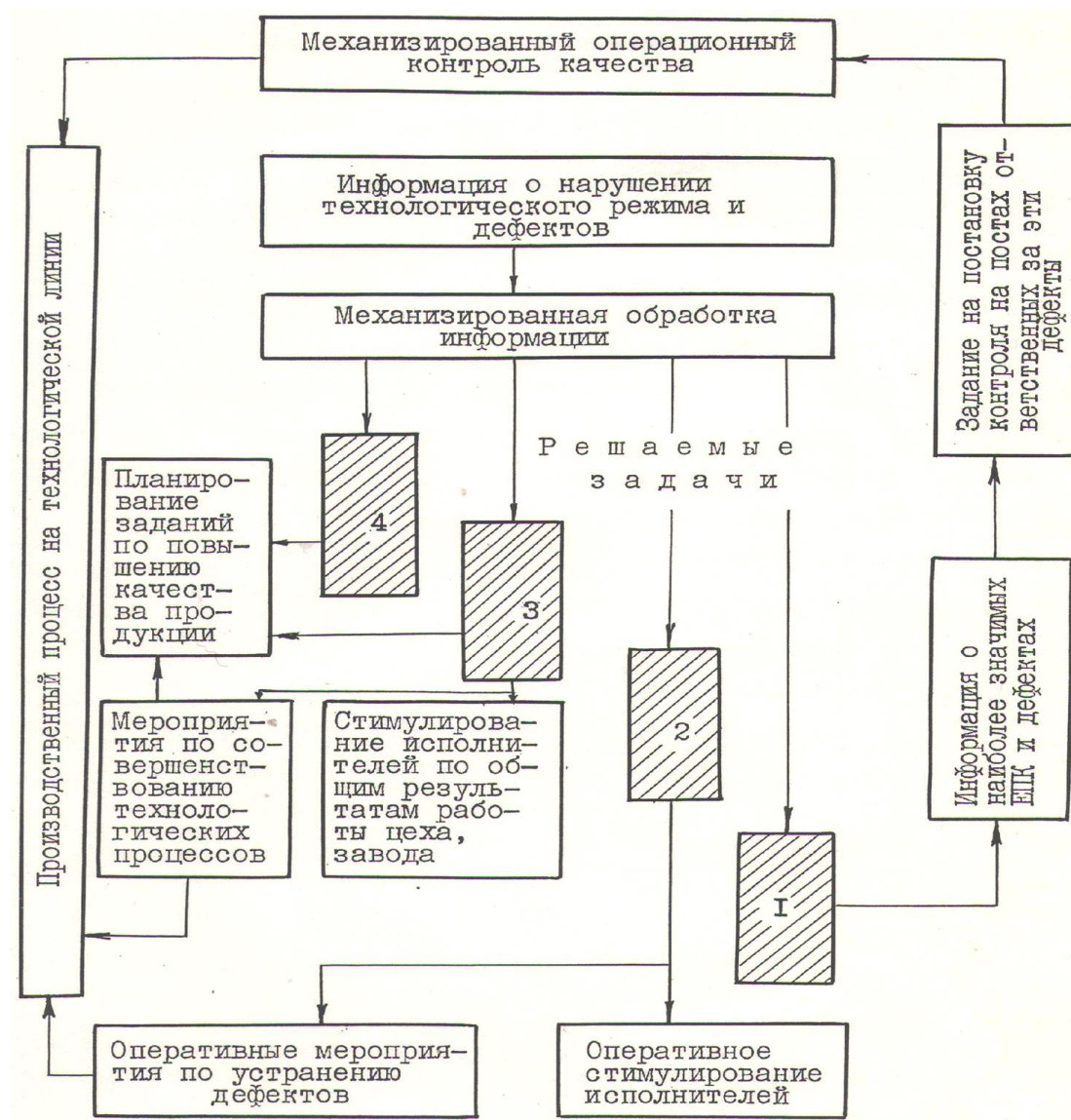


Fig.1. Block diagram of the functioning system for ensuring the design level of product quality in the building materials industry

- theoretical and practical issues related to the organization and conduct of operational (continuous) control of product quality have not been developed, which often reduces the quality management system to the information systems level.

The study showed that in many factories, quality management services were created, dealing with [3,4,5]:

- technical control, accounting and assessment of product quality;
- product standardization and certification;
- metrological support of control operations;
- improving laboratory control.

However, the analysis shows that the main defects causes and defects at the surveyed plants are the unsatisfactory equipment and tooling condition, production violation and technological discipline by plant employees, the use of materials that do not comply with SS, well-developed communications and operational impact on production processes are not enough.

In factories, the operational control results' registration in the route form logs with subsequent manual processing is cumbersome, requires a lot of labor time of the control service employees.

We propose the operational control mechanization, which can significantly improve the system for ensuring the design level of the factory products quality during their manufacture at the plant (see Figure 1).

With the help of the information obtained during this control, four tasks are solved and with their help:

- the inspectors efforts are promptly (every shift) directed to the posts where the most significant defects are noted;
- operational measures are being developed to eliminate the causes leading to the defects appearance, and more capital measures to improve technological processes in order to improve product quality;
- tasks are planned to improve the products quality;
- incentives for performers are determined.

Conclusions.

Thus, in contrast to those currently used, the proposed system has a much greater efficiency and at the same time increases the possibilities for developing effective measures, opening reserves and, consequently, planning tasks to improve the products quality of construction industry plants.

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