QUALITY MANAGEMENT OF BUILDING MATERIALS

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Abstract: The quality of building materials is the main factor affecting the cost of construction, efficiency and durability of objects. Ensuring the quality of construction is achieved by the development and implementation of a set of interrelated activities.

Keywords: building material, construction, quality management, safety, quality of building materials, production of building materials.

Quality control of construction and compliance with the mandatory requirements of regulatory documents has always existed in our country, but it took various forms. In the pre-reform period, the clear prevalence of demand over supply in this industry had a significant impact on the construction quality control system. In the conditions of an acute shortage of building materials, the problems of "development" of capital investments and the timely commissioning of facilities were often pushed into the background of the problems of the quality of construction, especially finishing work [1-4].

In connection with the transition to a market system, construction organizations found themselves in completely different conditions, when instead of the problems of a shortage of building materials came the problems of finding a customer and survival in the competition. This influenced the quality control system of building materials, which took shape characteristic of market conditions.

In 2015, the industry began to recover after the first decline in ten years in the construction industry of Uzbekistan, primarily due to projects implemented with the support or at the expense of the state. Analysts call the residential segment the most promising in the near future. In the IV quarter of 2015, the heads of 60% of construction organizations assessed the economic situation in construction as "satisfactory", and the share of organizations whose production program corresponded to the "normal" level was 62%.
An integrated quality management system for building materials provides for the implementation of the following main functions at different stages of quality assurance: planning, organization, coordination, control, incentives, accounting, analysis, assessment and certification. Each of the listed management functions can be considered as a process that should lead to a given result, regardless of the operating conditions of the construction company [5-8].

In general, one can also agree with the opinion that the quality of a product is a measure of satisfying a specific need by a particular type of product. Product quality should be understood as the degree to which this product meets a specific need, or its competitiveness in market conditions. The main point in this definition is the requirement that quality be assessed only in connection with a given specific need.

To determine the goals of planning the quality level of building materials and predicting the directions of development of construction production, it is extremely important to have a mechanism for balancing the requirements and capabilities of the technical and economic aspects of quality. This follows from the fact that from an economic point of view, not every high technical level of production is a good. The production of building materials of a higher technical level, and, consequently, of greater complexity than is necessary for the consumer, has the same negative result for a construction company as the production of excess volumes of products of the same quality and complexity. The production of products of a high technical level, where there is no direct need for it, leads to the deadening of funds, reducing accumulation funds, and also restrains the growth of labor productivity. In terms of its economic consequences, this situation is identical to the process of economic depreciation of new products due to the lack of demand for them. The economic depreciation of new products with a higher relative technical level is entirely determined by the conditions of its use or a specific need. Its size can be determined as the difference between the discounted and accrued value of building materials.

From the above, it follows that there is an objective need to balance the engineering and economic aspects of improving quality in accordance with the demand of consumers and their different purchasing power. When assessing the feasibility of improving the quality of building materials, it is necessary to proceed not only from its technical level, but also from the specific conditions for the use of these products by the consumer. Thus, the actual value of the level of quality of building materials must correspond to certain financial capabilities of consumers [9-12].

Considering the receipt of the maximum possible profit in the form of a criterion for the optimal functioning of a construction enterprise, it is important to correctly take into account the factors that affect the level of quality of products. The main such factors include:
- the quality of the used technical documentation for the ongoing contract project;
- the quality of the building materials used;
- the number of workers in material production and their qualifications;
- labor productivity;
- the quality of the used construction equipment.

At the same time, the main source of increasing profits by improving the quality of work is the qualification of construction workers and an increase in labor productivity. In this case, the growth of labor productivity can be ensured both by capital investments and by improving the organization of production [13-19].

Moreover, the optimal quality of construction products should be understood as the quality that ensures the maximum profit in the production and consumption of
these products. Consequently, in order to achieve optimal product quality, it is necessary to conduct marketing research to identify demand, consumer capabilities, predict the process and its changes, both in the near future and for a long period. At the same time, in the process of optimizing the quality of building materials according to the criterion of maximizing profits, a specific need for building materials, which has a certain cost, should appear in the form of planned restrictions of a functional type.

Considering the above, the process of determining the optimal level of quality, taking into account the needs of the market, can be reduced to the implementation of the following stages (figure 1).

After determining the various quality requirements for each class of contracting projects in accordance with market demand and the financial capabilities of consumers, it becomes necessary to create conditions that ensure the specified quality of implementation of contracting projects. In the general case, the quality of each building and structure being erected is laid down in the design, ensured in the manufacture of building materials and in the process of performing construction and installation works, and is implemented in the process of their operation. In the practice of quality management, mainly economic, organizational - managerial (administrative) and socio - psychological methods of quality management are used. Consequently, one of the most important problems of quality management is the manager's choice of a particular method in accordance with the current situation of the problem environment, i.e. decision-making in the quality management process is based on information about the state of the facility and the quality of the contracted work [20-22].

In this case, the process of product quality management can be represented as follows (figure 2). The database is a structured model of knowledge of quality...
management experts in various situations. The goal is determined by the quality model (benchmark), which must be obtained as a result of high-quality construction of the facility. Typically, such a model includes the characteristics and quality indicators of the construction and installation work performed. Based on the quality model and external environmental conditions (consumer demand, etc.), a plan is formed to improve the quality of products and sales related to these activities. The situation is assessed based on the deviation of the actual and target values of the quality indicators of the facility under construction.

![Diagram of the process of quality management of construction products](image)

The choice of a management method is based on an assessment of the situation in accordance with the nature of the factors affecting the quality of building materials.

It should be especially borne in mind that in market conditions it is necessary to preferentially use economic management methods, while the rest of the methods perform the function of regulators in achieving the economic goals set for construction organizations and the standard quality level of finished construction products. In other words, for each market segment, in accordance with the purchasing power of the consumers of building materials related to it, it is advisable to establish an appropriate level of quality that meets the specified requirements for the cost of building materials in this segment. Thus, in the system of indicators for assessing the quality of building materials, it is advisable to distinguish between:

- normative levels of technical quality indicators (mainly determining the strength of the structures and materials used), the fulfillment of which is mandatory for all market segments, since they provide the required reliability of building materials;
- normative levels of economic indicators or levels of product quality recommended for a given market segment are mainly limited by the cost of the building materials produced and reflect its aesthetic properties and architectural features.

In other words, economic quality levels actually ensure the balance of supply
and demand for building materials in the corresponding market segment and are mainly determined by the additional cost of building materials used in construction.

Ensuring the quality of the final products of construction is achieved by the development and implementation of a set of interrelated measures developed on the basis of studying the conditions and factors to achieve stable compliance with the requirements of regulatory documents at the stage of forming the actually achieved level of quality of these products.

Maintaining the achieved level of quality of the final products of construction (after the production stage) consists in the development and implementation of measures to maintain the actually achieved level of quality during the operation of facilities for a given period under certain conditions.

At the same time, an integrated quality management system for construction products should be based on the following basic principles: a systematic approach, standardization, comprehensive solution of problems of rational limitation, direct and feedback, dynamism, optimality, adaptability to changing market requirements, integration and modular construction, automation and new tasks.

Thus, the task of quality management should be formulated as follows. The management system must ensure the quality of construction products that fully meet the requirements of technical standards (established in accordance with the requirements of the region, for example, requirements for increased seismic resistance) with minimal costs for its implementation, as well as ensure economic quality standards in accordance with the requirements of consumers in each market segment. Therefore, in order to solve the task, set in this way, it is necessary to formulate a quality criterion that determines the achievement of mandatory technical quality standards common for all market segments in a given region at minimal cost, as well as criteria reflecting economic standards that ensure quality in accordance with the requirements of consumers in each market segment, construction products.

At the same time, for an objective assessment of the quality of building materials, it is necessary to create a quality control service at each enterprise, the functions of which include the implementation of all types of control and the collection of information for assessing the quality that comes in the process of operational control. Based on this information, it is possible to manage the process of ensuring the normative values of quality indicators in accordance with the situation in the problem environment and reflecting the state of all participants in the construction industry (customer, contractor, suppliers, financial structures, etc.). For this, first of all, it is necessary to establish quality assurance standards in accordance with the requirements of the consumer, determine the cause of deviations from technological modes, the place and time of their occurrence, and identify specific culprits for the appearance of defects. In the field of this, form a program of measures aimed at eliminating the identified deviations.

References:
[1] Kuvandikov A., Mustafaev O. INDICATORS FOR ASSESSING THE QUALITY OF BUILDING MATERIALS //Збірник наукових праць SCIENTIA. – 2021.
[2] Shamsiddinovich, M. N., Axmatovich, A. S., &Latifjonovich, K. A. (2020). The Role Of The Technical Regulatory System In Ensuring Product Quality And Safety In Enterprises Producing Construction Materials. The American Journal of Engineering and Technology, 2(12), 44-49.
[3] Kuvandikov, Adkhamjon, and Oybek Mustafaev. "Indicators for assessing the quality of building materials." Збірник наукових праць SCIENTIA (2021).
[4] Муминов, Н. Ш., Кувандиков, А. Л., &Мустафаев, О. Ш. (2020). СОВРЕМЕННЫЕ ТЕНДЕНЦИИ В
НАУЧНО-ИННОВАЦИОННОМ РАЗВИТИИ ПРОМЫШЛЕННОСТИ СТРОИТЕЛЬНЫХ МАТЕРИАЛОВ УЗБЕКИСТАНА. Экономика и социум, (1), 617-622.

[5] Сергеев С.К., Телепченко В.И., Колчунов В.И. и др. Менеджмент систем безопасности и качества в строительстве. М.: Издательство ACB, 2000.- 570 стр.

[6] Самадов, А.,& Носиров, Н. (2021). СПОСОБ ИЗВЛЕЧЕНИЯ ЦЕННЫХ КОМПОНЕНТОВ (ЗОЛОТО, СЕРЕБРО) ИЗ ХВОСТОВ ЗИФ. InterConf.

[7] Abdurashidovich, U. A. (2020). The Condition Of General Development Of The Mineral Resource Base In Uzbekistan. The American Journal of Applied Sciences, 2(12), 1-6.

[8] Хайитов, О., Умирзоков, А., &Равшанов, З. (2020). Анализ текущего состояния и пути повышения эффективности разработки нефтегазовых месторождений юго-восточной части бухаро-хивинского региона. Материалыконференций МЦНД, 8-11.

[9] Хайитов, О.,Умирзоков, А., &Векмуродов, А. (2020). О применении методов подсчета запасов газа в месторождении северныйгузар. Збірникнауковихпраць ЛОГΟΣ, 56-59.

[10] Djurayevich, K. K., Kxudoynazar O'g'li, E. U., Sirozhevich, A. T., &Abdurashidovich, U. A. (2020). Complex Processing Of Lead-Containing Technogenic Waste From Mining And Metallurgical Industries In The Urals. The American Journal of Engineering and Technology, 2(09), 102-108.

[11] Fatidinovich, N. U., Atoevich, O. S., &Abdurashidovich, U. A. (2020). The Analysis Of Influence Of Productions Of Open Mountain Works On Environment At Formation Of Various Zones On Deep Open-Cast Mines. The American Journal of Applied sciences, 2(12), 177-185.

[12] Shukurovna, N. R., Yunusovna, N. X., Jumaboyevich, J. S., &Abdurashidovich, U. A. (2021). Perspective Of Using Muruntau Career’s Overburden As Back Up Sources Of Raw Materials. The American Journal of Applied sciences, 3(01), 170-175.

[13] Abdurashidovich, U. A. (2020). Prospects for the Development of Small-Scale Gold Mining in Developing Countries. Prospects, 4(6), 38-42.

[14] G'ofurovich, K. O., &Abdurashidovich, U. A. (2020). Justification of rational parameters of transshipment points from automobile conveyor to railway transport. World Economics and Finance Bulletin, 1(1), 20-25.

[15] Kazakov, A. N., Umirzakov, A. A., RadjabovSh, K., &Miltiqov, Z. D. (2020). Assessment of the Stress-Strain State of a Mountain Range. International Journal of Academic and Applied Research (IUAR), 4(6), 17-21.

[16] G'afurovich, K. O., Abdurashidovich, U. A., &Ogli, B. A. O. (2020). Small Torch Progress In Prospects Gold Mining In Improving Countries. The American Journal of Interdisciplinary Innovations and Research, 2(09), 65-72.

[17] G'ofurovich, K. O., Abdurashidovich, U. A., Ugli, M. U. F., &Ugli, A. A. X. (2020). Justification Of The Need For Selective Development Of The Phosphorite Reservoir By Horizontal Milling Combines. The American Journal of Engineering and Technology, 2(11), 159-165.

[18] G'ofurovich, K. O., &Abdurashidovich, U. A. (2020). Justification of rational parameters of transshipment points from automobile conveyor to railway transport. World Economics and Finance Bulletin, 1(1), 20-25.

[19] Shamssiddinovich, M. N., Inoyatovich, K. B., Najmiddinovna, A. N., &Latifjonovich, K. A.(2020). Theoretical and methodological foundations for ensuring the quality and safety of agricultural and food products. ACADEMIA:AN INTERNATIONAL MULTIDISCIPLINARY RESEARCH JOURNAL, 10(12),78-85.

[20] Shamssiddinovich, M. N., Inoyatovich, K. B., Najmiddinovna, A. N., &Latifjonovich, K. A. (2020). The effectiveness of standardization, technical regulation and certification in ensuring the quality and competitiveness of agricultural and food products. ACADEMIA: AN INTERNATIONAL MULTIDISCIPLINARY RESEARCH JOURNAL, 10(12), 54-61.

[21] Turgunov, B. M., &Muminov, N. S. (2019). PRINCIPLES OF ASSESSMENT AND MANAGEMENT OF QUALITY SYSTEMS IN INDUSTRIAL ENTERPRISES. Точная наука, (44), 5-14.

[22] Shamssiddinovich, M. N., &Akramovich, H. J. (2020). Viticulture And Winemaking: Problems, Solutions And Prospects For Increasing Export Potential. The American Journal of Agriculture and Biomedical Engineering, 2(12), 49-58.