

**O 42. QUALITY EVALUATION OF TECHNICAL REVIEWS OF CONSTRUCTION
PROJECTS DESIGN AND CONSTRUCTION MATERIALS IN ALBANIA**

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ABSTRACT: The aim of this research was the analysis of the institutions concerned in policy making and legality implementation, related to the safety of construction works, with the aim to ensure the community, the possibility of utilization of guaranteed civil engineering structures and high-quality construction materials. The main institution which guarantees the quality of the construction projects design and the quality of construction materials used in Albania territory, is the Albanian Institute of Construction. The Ministry of Infrastructure and Energy has failed to complete the legal framework, where quality of construction materials and construction projects design issues, should be entrusted to a competent institution, where its activity, in this case the Albanian Institute of Construction, has to be guaranteed by law. The lack of qualified staff, the recruitment employees without the necessary experience, as well as the lack of a non-accredited laboratory in ALIC, has led to the provision of low-quality technical reviews and lack of quality control of construction materials.

Keywords: *Technical review, Construction Project, Design, Materials*

INTRODUCTION

The Albanian Institute of Construction is under jurisdiction of the Ministry of Infrastructure and Energy and must provide a high level of protection of the citizens, to guarantees the sustainability of construction works in our country, and at the same time to protect the health of citizens and the environment.

The continuous increase of demand to replace the existing Albanian design codes with Euro codes, will lead to the improvement of design methods, with direct impact to quality and safety of construction projects.

The Control of implementation of construction public projects remains a basic requirement not only for the protection of health, but also has a great impact on sustainability development of the country.

In this context, the analysis of the activity of the Institute of Construction, in order to increase the quality assurance of construction design, is an issue that after the earthquakes of September and November 2019, should be addressed with high priority.

METHOD

During the study phase and onwards, a considerable amount of numerical data has been collected, such as: Organisation breakdown structure and quality management system; number of inspections by year, activity of the IC directorate of technical reviews and laboratories, number of technical reviews divided according to the level of risk; the number of construction companies resulting has violated the rules; laboratory samples; questionnaires, etc., which require careful statistical analysis, to reach accurate and clear conclusions. In this way, we used the quantitative approach.

Interviews with specialists of AIC and NGO interested in the field of quality assurance of construction project.

Field visits/ laboratory and observations of:

Management procedures, technical procedures, work instructions and relevant forms of the management system of the Laboratory Department and in general of AIC (DL-PM-01).

Quantitative and qualitative analysis of information provided by the AIC.

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RESEARCH FINDINGS

Legal basis which regulate the safety of construction facilities.

-The legal basis for the functioning of the Albanian Institute of Construction is insufficient. The establishment of this institution, by Decree No.225 DT 29.06.2004 of the Minister of Construction, as well as its functioning according only to the regulation approved only by the General Director, has create the possibility of inadequate functioning of the IC.

-The rules and steps approved, mandatory to be followed during the compilation of the technical review is not detailed and fails to serve the provision of a quality and professional technical review of the construction designs.

-The legal basis Law No. 8402, dated 10.9.1998 on "On the control and discipline of construction works" as amended", has undergone some changes, but this legal basis must be adapted to the dynamics of construction development in recent years. Different central and local self-government institutions have different approaches to the same problems, due to the gaps in this legislation.

The "Manual of Prices of Construction Works" and their technical analysis, has not been updated from 6 years (approved MPCW with DCM is No. 629, dated 15.07.2015), although there are numerous requests from the institutions and entities, that has required to update it with new items, or to clarify some existing items.

The impact of technical reviews given by the AIC to improve the design and increasing the safety of construction projects.

The technical reviews compiled by the Institute of Construction are generally presented as an inventory of project file documentation, and in most cases have some superficial recommendations, which are generally not taken into account by the institutions and entities. The recommendations given for each project category should have been reflected in the final conclusion. In cases where deficiencies and deviations from the standards of the projects has been ascertained, the technical review should have given negative assessment and the projects should have been rejected. This has resulted a practice not used by the AIC.

Quality of laboratory tests of the AIC Laboratories.

-Laboratories of the AIC, for a significant amount of construction materials perform tests with AL-SS standards (Albanian State Standard) not harmonized with those of the European Union. Generally the test methods are prepared according to the laboratory standard and the DL-PT-03 procedure and the specialists have the proper instructions for processing the test samples, as well as the manuals for the use of the equipment. The laboratories of the laboratory directorate use equipment which has been subjected only to internal calibrations and the maintenance process through maintenance programs, without making calibrations from external entities.

-The number of tests nationwide for the years 2016-2017-2018, gives an overview of the performance of the activity of the Directorate of Laboratories in the AIC. According to the analysis of the data, which refers to the documentation data held by DL, it resulted that for the year 2016, 429 tests were performed; for the year 2017, 346 tests were performed and for the year 2018 (until November) 301 tests were performed, neither shown in annexes in Table No.1, Table No.2 and Table No.3

The Albanian Institute of Construction during the testing activity of construction materials/ products, for the period 2016-2018, has issued test reports generally in accordance to S SH ISO/IEC 17025, but not with all components according to international laboratory test standards. Legal inconsistencies found in 47 cases identified in 2016; in 108 cases identified in 2017 and in 55 cases identified in 2018, has shown that it's not the right trend for reporting test results, according to the standard SSH ISO / IEC 17025 and quality manual (MC) (DL- MC-01).

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Conformity of laboratory equipment at the disposal of AIC according to the calibration standards.

A large number of tests are performed with un-calibrated equipment's, by the laboratory directorate of the Albanian Institute of Construction. External calibrations are incomplete and not for all equipment's, in compliance with the requirements of ISO / IEC 17025: 2005, point 5.5, of MC and DL-PT-07 procedure. For devices that affect the quality of the tests, a valid calibration status is not maintained. The universal equipment's used for strength / traction tests or digital testing machines, do not have a calibration certificate where is identified the last date of calibration and the planned date for the next calibration (in terms of calibration frequency) and consequently cannot be judged on the corrective maintenance of equipment, through the implementation of annual internal and external calibration programs and preventive maintenance programs.

Quality of materials used for construction of publicly funded civil engineering structures.

The quality control of construction materials and their application in construction projects is completely out of control. In several construction projects build with state and donator funds, it has been ascertained the use of materials of very poor quality and not according to the standards, starting from the: concrete works in road infrastructure, stones for paving the city squares, materials for facade cladding, plastering and painting materials. While in the works for doors and windows of school infrastructure structures, no standard is maintained for thermic isolation and acoustic insulation.

In terms of road infrastructure, the construction projects realized from the Albanian Road Authority and the Albanian Development Fund, has significant deficiencies in the quality of all elements used for road signage, starting from the lines, information boards, lighting, etc, which in the time span of 2 years , in most cases turn out to be obsolete.

Entities implementation of the recommendations of the technical reviews issued by AIC.

No official document were found where the AIC has requested and received information regarding the implementation of the recommendations left in technical reviews. The AIC has no knowledge whether the recommendations given for the improvement of construction design through technical reviews, are taken into account by the entities before obtaining development permits.

Regarding the Albanian Development Fund, only in 2018, it has started to carry out technical reviews of the design process of the construction projects that implements. While the Albanian Road Authority has regularly conducted technical reviews for civil engineering structures according to the DCM No. 1055, Date 22.12.2010 "Obligation for the realization of projects technical reviews". In the construction projects realized in the Albanian Road Authority, it is ascertained that for the unforeseen engineering works, realized with additional contracts (over 100 million ALL value) no technical reviews have been performed. In some cases the recommendations of technical reviews are taken into account, but the initial projects commissioned by important institutions such as the Albanian Road Authority and the Albanian Development Fund undergo changes during implementation, where in some cases these changes are essential, the revised design and bill of quantities, has not been send to be technically reviewed again to the AIC.

CONCLUSIONS

The activity of Institute of Construction in general should provide assurance regarding the quality of the construction projects design process. If this issue is not sufficiently controlled, remains a major cause for the realization of poor quality engineering works such as roads, hydropower's, schools, hospitals, residential building, etc.

Quality assurance issues for the construction design and projects should be entrusted to a competent institution and guaranteed by law. Even though the construction products are tested by various private accredited laboratories, there is no certified public or private body to assess the conformity of products. The development of an effective and reliable system to control the construction materials, with a high trust from stakeholders, is still considered far from International standards in this field. Direct or indirect costs, which derive by poor quality of the construction, are too high even for developed countries and

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no longer for Albania, considered as a developing country. For this reason, an effective quality assurance system of design and realizing the construction projects is very important, to prevent damage to health and the environment, as well as to reduce the costs associated with it.

The Albanian Institute of Construction as an important institution with long experience in the field of construction control, and it is legally charged to make a direct contribution to the evaluation of various construction projects and on the quality of construction products.

REFERENCES

- Dervishi, I., Zaçe, A. and Muça, S., 2019, Auditing Report-ALSAI, *Safety of engineering projects*, Tiranë-Albania, 45-72.
- Ministry of Construction, Fino, B., *Decree No.225 DT 29.06.2004 for the "Establishment of the Albania Institute of Construction"*, Tiranë, Albania, 1.
- Parliament of Albania, *Law No..9290 date 07.10.2004 "Construction Products"*, Tiranë, Albania, 1-9.
- Government of Albania, *DCM No. 1055, Date 22.12.2010 "Obligation for the realization of projects technical reviews"* Tiranë, Albania, 1-2.
- Parliament of Albania, *Law No. 8402, dated 10.9.1998 on "On the control and discipline of construction works" as amended*", Tiranë, Albania, 1-7.