THE EFFECTIVENESS OF THE USE OF MONOLITHIC REINFORCED CONCRETE IN THE CONSTRUCTION OF RESIDENTIAL BUILDINGS

Xamidov Adhamjon
Professor of Namangan Engineering-Construction Institute
Kholmirzayev Sattor
Professor of Namangan Engineering-Construction Institute
Rizayev Bahodir
Professor of Namangan Engineering-Construction Institute
Umarov Isroiljon
Teacher of Namangan Engineering-Construction Institute
Dadaxanov Farrux
Teacher of Namangan Engineering-Construction Institute
Muhtoraliyeva Muhtasar
Teacher of Namangan Engineering-Construction Institute

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Abstract. *This scientific article covers the advantages of monolithic reinforced concrete, their application in residential buildings, the experience of foreign countries in the application of monolithic reinforced concrete, the prospects for the development of monolithic reinforced concrete in Uzbekistan.*

Keywords: *reinforced concrete, monolithic, strength, deformability, structure, building, long-term durability, penetration deformation, mold.*

ЭФФЕКТИВНОСТЬ ИСПОЛЬЗОВАНИЯ МОНОЛИТНОГО ЖЕЛЕЗОБЕТОНА ПРИ СТРОИТЕЛЬСТВЕ ЖИЛЫХ ДОМОВ

Аннотаций. *В данной научной статье освещены преимущества монолитного железобетона, их применение в жилых домах, опыт зарубежных стран по применению монолитного железобетона, перспективы развития монолитного железобетона в Узбекистане.*

Ключевые слова: *железобетон, монолит, прочность, деформируемость, конструкция, здание, долговечность, сквозная деформация, форма*

INTRODUCTION

It is known that at present, in the construction of buildings and structures in Uzbekistan, mainly prefabricated reinforced concrete is used. Because prefabricated reinforced concrete has its own advantages, due to which the share of prefabricated reinforced concrete structures in almost all Commonwealth countries is 85-90% in the construction of buildings and structures. When using prefabricated reinforced concrete structures, the installation work of the building is accelerated, it is possible to carry out the restoration of a building or structure in all seasons of the year. In most developed foreign countries, including the United States, England France, Germany Holland and a number of other countries, monolithic reinforced concrete is used more often than prefabricated reinforced concrete. One of the main reasons for this is the natural climatic conditions of the regions where these structures are used. Of the Commonwealth countries, a large part of countries such as Russia, Ukraine, Belarus have a cold climate, and in some, winter lasts even up to half a year. For such areas, the application of prefabricated reinforced concrete structures is considered appropriate. In Uzbekistan, like all Commonwealth

countries during the former Union, prefabricated reinforced concrete was used as the main material for the construction of buildings and structures.

RESEARCH MATERIALS AND METHODOLOGY

Research conducted in Uzbekistan and a number of foreign countries has also shown a number of advantages of monolithic reinforced concrete. Thanks to this, the relevant decision of the Cabinet of Ministers of the Republic of Uzbekistan was adopted in 1998. According to him, it is indicated that in addition to prefabricated reinforced concrete, monolithic reinforced concrete should be developed in our country in stages. Since the air temperature and relative humidity in the spring and autumn months in the territory of our republic are close to normal conditions, it is more likely that the strength and deformable properties of concrete and reinforced concrete structures prepared during this period will be in demand than in the summer season. One of the serious problems in monolithic concrete and reinforced concrete structures prepared on the territory of Uzbekistan is the influence of dry hot climate on concrete and reinforced concrete. The results of the scientific research conducted testify that the strength of concrete and reinforced concrete structures prepared in the summer months is 10-15% less than in normal conditions, and the deformability is twice as high. In dry hot climates, the tightness of reinforced concrete structures is reduced by 30-40%, while the opening width of the cracks increases by 1.4-1.7 times. The implementation of special measures to reduce such a negative impact is shown in the research work carried out in subsequent years. In subsequent years, certain changes are also observed in the climate of Uzbekistan. In particular, since the average temperatures in the spring and autumn months are higher than in other regions, the possibilities of using monolithic concrete and reinforced concrete are expanding. The advantages of the preparation of concrete and reinforced concrete in the spring and autumn months are that it is observed that the air temperature during the hardening period of concrete is close to the temperature in normal conditions, while its relative humidity is very close to that in normal conditions. Building codes and regulations in QMQ 2.03.01.96 (concrete and reinforced concrete structures) indicate coefficients that take into account changes in the strength and deformation properties of concrete in dry hot climates. But there, mainly, high temperatures and low relative humidity in the summer months were taken into account. Therefore, it is advisable to include separate coefficients for calculating reinforced concrete structures prepared in other seasons.

RESULTS OF THE STUDY

Therefore, when calculating reinforced concrete structures to be operated in dry hot climates, it is necessary to take into account climatic conditions. Nevertheless, in the conditions of Uzbekistan, the use of monolithic reinforced concrete is considered more effective in most cases. In particular, there is an opportunity to make concrete in three seasons of the year, that is, to carry out restoration work of buildings and structures. As noted above, since the hardening conditions of concrete in spring and autumn are close to those in normal conditions, its strength and deformable properties are also better than those in prefabricated reinforced concrete. It is known that high strength means that concrete and reinforced concrete will also have high resistance in the long term. In addition to it, in buildings restored from monolithic reinforced concrete structures, the spatial bickering of buildings will also be higher, since their main load - bearing structures form a bickering compound with each other. If we take into account the fact that the territory of our Republic is located in a seismically active HUD, then a sharp increase in its earthquake resistance will give a positive result. There are also disadvantages to the

restoration of buildings and structures from monolithic reinforced concrete. In particular, the estimated cost of buildings or structures increases significantly.

CONCLUSION

But land tremors that have occurred in a number of countries around the world in subsequent years indicate that it is advisable to increase the level of reliability of the building, even if more funds are provided for increasing its spatial bikrity. Given the long-term durability of buildings and structures, as well as the increase in its earthquake resistance, the importance of the disadvantages mentioned above is sharply reduced. So in the conditions of Uzbekistan, it is advisable to increase the proportion of monolithic reinforced concrete in the buildings under construction.

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