

PROSPECTS FOR THE DEVELOPMENT OF REINFORCED CONCRETE STRUCTURES IN UZBEKISTAN

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Abstract. *This scientific article shows the role, importance of reinforced concrete structures in construction ways to increase economic efficiency in the process of applying reinforced concrete structures. The work on the development of reinforced concrete structures in developed countries of the world and the prospects for the development of reinforced concrete structures in the Republic of Uzbekistan are highlighted.*

Keywords: *concrete, reinforced concrete, reinforcement, cement, strength, long-term durability, tightness, solidity, industrial waste monolithic concrete.*

ПЕРСПЕКТИВЫ РАЗВИТИЯ ЖЕЛЕЗОБЕТОННЫХ КОНСТРУКЦИЙ В УЗБЕКИСТАНЕ

Аннотация. *В данной научной статье показана роль, значение железобетонных конструкций в строительстве, пути повышения экономической эффективности в процессе применения железобетонных конструкций. Освещены работы по развитию железобетонных конструкций в развитых странах мира и перспективы развития железобетонных конструкций в Республике Узбекистан.*

Ключевые слова: *бетон, железобетон, армирование, цемент, прочность, долговечность, герметичность, монолитность, промышленные отходы монолитного бетона.*

INTRODUCTION

According to its technical and economic performance, concrete and reinforced concrete still occupy a leading role among structural building materials around the world today. Due to its unique properties, reinforced concrete received the name of the material of the XX century, replacing the metal, the cost of which is expensive. The large-scale application of concrete and reinforced concrete made it possible to make revolutionary changes in construction technology as well, huge structures that are resistant to the long term number restoration. Research shows that reinforced concrete retains its leadership role even in the 21st century.

RESEARCH MATERIALS AND METHODOLOGY

According to the doclade of the expert commission of the European Union for the development of construction in Europe until 2025, modern building materials must meet the following requirements:

- minimum use of Natural Resources, maximum use of waste in the production of building materials;
- further increase in strength and durability in the long term;
- storage of processing capacity and second use capacity;
- compliance with high aesthetic and architectural qualities;
- environmental safety in the production and operation process.

Concrete and reinforced concrete structures fully meet these requirements. Due to this, the production of reinforced concrete around the world is 2mlrd. increased from M3. For example 1tonna for the production of steel, 20tonna initial resources are used. Of these, 19 tons return to the environment. And the production of concrete helps to dispose of waste from other industries, while being Waste-Free. Studies have shown that some hazardous industrial waste is neutralized in concrete. Between 2005 and 2010, numerous laboratories conducted studies in several European countries to study the effects of harmful substances that can spread from concrete to the environment.. In it, the effect of 32 different substances that can be contained in the same concrete was studied. The result of the studies was found that the radiation of substances considered the most harmful is also very zif and harmless.

RESULTS OF THE STUDY

Therefore, environmental safety in the process of production and operation of reinforced concrete is not considered a problem, but it is a technical task and is solved differently (the application of environmentally friendly materials ,full adherence to production technology and safety techniques, etc.). Modern concrete is a comfort environment for human life activities. Because the temperature in the rooms can maintain the humidity regime.

As for strength and durability for the long term, here it is worth dwelling in detail. Nowadays, concrete has not become a mixture of cement, water and fillers, but has become a complex composite material, which is made on the basis of high technologies. The last steps of this process can be traced in World Science and practice.

In recent years, concreting has taken another step forward. Concrete appeared, which itself would be compacted. Concretes with high plasticity acquire a liquid property when filling the mold. They are characterized by having a high anti-layering consistency and a fast consistency during hardening. These properties are of great importance in monolithic construction, since they do not leave the need for heat treatment. Naturally, since the technology of concrete and reinforced concrete is complicated, its cost is also increasing. But from world practice it is known that 1dols spent on the long-term durability of the structure will bring a profit of \$ 125 in operation. The main costs in the process of operation of construction objects are from the cost of maintaining structures from corrosion, their repair and restoration of the structure. That is why durability for the long term has become one of the main requirements for building materials. Only durability with long-term durability does not fully ensure its operational properties. In construction, concrete slab is widely used as a concrete-heater, replacing polystyrene and mineral cotton. The properties of modern concrete heaters are puzzling even experts. For example, the volumetric weight is 60 kg/m³, the coefficient of thermal conductivity is 0.006. Concrete heaters, which naturally have such a property, have a low strength, making

them difficult to transport and install trasportdp. Therefore, monolithic concrete heaters have now appeared, and they will be used on a large scale in the future.

The work of concrete in combination with other materials does not cause serious problems. An example of fittings can be given in the first place. As a result of research in subsequent years, metal fittings are improving, research is underway on its new types, but the problem of protecting it from corrosion has not been fully solved. In subsequent years, research has been carried out on mirrors fittings in European countries. Although plastic window plastic Basalt is used as such fittings, their further improvement requires period. Considering that their strength is 2 times higher than that of metal fittings and 5 times lighter, corrosion resistance is protected from high-voltage electric current, with the help of its positive properties, albeit more expensive than metal, excessive costs are covered.

The quality processing of secondary raw materials is very high in reinforced concrete. All metals applied to reinforcement and reinforced concrete can be sent to re-application to re-melt the concrete as a filler, but the problem here is that a high-performance technology has not been developed for the second use of concrete or reinforced concrete. The volume of reinforced concrete re-applied around the world is increasing due to the geometric progression. Therefore, if a firm builds a building or structure in foreign countries, it also guarantees the obligation to eliminate it in the future.

The high aesthetic and architectural properties of reinforced concrete are recognized all over the world. Therefore, the mass application of reinforced concrete in the construction of unique structures and urban planning is increasingly developing. The fact that any shape can be formed with the help of concrete helps to give the buildings beautiful shapes. Therefore, the application for architectural elements is increasing from year to year. Therefore, architectural concrete is becoming a direction with a separate technology. Because this type of concrete has different requirements than structural.

In later years there has been much discussion as to whether monolithic concrete and reinforced concrete are preferred or prefabricated reinforced concrete. It is known that in pre-independence periods, the main focus was on prefabricated reinforced concrete, which was considered preferable in all respects. But the studies carried out showed that the use of monolithic concrete and reinforced concrete is appropriate for the climatic conditions of our Republic. Thanks to this, the relevant decision of the Cabinet of Ministers of the Republic of Uzbekistan on the development of monolithic concrete and reinforced concrete was adopted in 1998. Thanks to this, the scope of use of monolithic concrete and reinforced concrete is expanding on the territory of our Republic.

CONCLUSION

In summary, concrete and reinforced concrete remain a material with prospects among the materials used in the construction of buildings and structures. The possibility of its application in various conditions, the possibility of its application in combination with other materials, the high aesthetic requirements and the reliability, especially the fact that concrete is a local material in the territory of our Republic, further expand the possibilities of its application.

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