

These amazing parks are designed for everyone who wants to have fun. Yaksam is the tallest of the buildings around the Han River. So, in conclusion I want to say, that Seoul is a symbol of Korea's beautiful and modern city, gaining weight in the world as a tourist and financial center.

НЕОБХОДИМОСТЬ АВТОМАТИЗАЦИИ ПРОЕКТИРОВАНИЯ СОСТАВА ТЯЖЕЛЫХ БЕТОНОВ

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Proportioning of various kinds of concrete and accordance of their properties to norms of Russian Federal Standard is one of the important technological tasks. Realization of these tasks is connected with some problems. Concrete mix influences on its durability on the level of operating reliability bearing strength as well as on the level of use of resources which are required for manufacture of construction and prefabricated elements. Generally, proportioning of various kinds of concrete is connected with decision of some important tasks:

1. Choice of water-cement ratio influencing on durability of concrete structure (part) and corresponding to work conditions of construction. Durability is usually considered as concrete compressive strength that influences on many other properties of concrete.

2. Production of necessary concrete consistence influencing on mobility and placeability of concrete and required concrete quality. The right combination of concrete components is selected to reach this purpose.

3. The lowest costs of means on production of concrete and its laying.

Now there are rather a large number of the methods actual development of which is the following: 1) more complete accounting of factors and design requirements for concrete; 2) increase in efficiency of calculation algorithm. In solving problems concerning heavy concrete it is necessary to define values of the water-cement ratio and water consumption taking into account demanded mobility or rigidity of concrete mix, and consumption of aggregates. Taking into account the development of computer technologies there is a need of automation of the solution of the tasks of this type that is the selection of heavy concrete composition based on their functions and working conditions.

We can conclude that it is necessary to improve the algorithms of calculation of concrete composition and their automation to increase productivity and to facilitate the solution of this problem at the enterprises.

МЕТОДЫ РАСЧЕТА ЖЕЛЕЗОБЕТОННЫХ КОНСТРУКЦИЙ

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It's almost impossible to imagine building construction without concrete.

Steel and concrete have been used together in construction since at least the middle of the 19th century. Concrete and reinforcement can work together because there is a sufficiently strong bond between the two materials.

It is known that concrete has high compressive strength, but it has low resistance to tension but steel copes with it very well. Concrete reinforcement is utilized not only to prevent the concrete from cracking but to take up

the tensile force. When the concentrated load influences on the concrete, it reaches the limit of its strength; in the reinforced concrete beam reinforcing bars take up tension after the concrete has cracked. Only when the concrete reinforcement approaches ultimate strength, the deflection and the crack become large enough to make the beam to break down. The failure of the beam is characterized by the crushing of the concrete in the compression zone.

There are three methods of calculation of reinforced concrete structures: allowable stress method of design (it's not possible to determine the actual stresses and failure load), failure load method of design (it does not allow to evaluate the performance of the structure before the failure, for example at working load), limit stage method of design (it is widely used today). The main idea of the limit stage method is that even in those rare cases when the construction is exposed to maximum load, the strength of concrete and reinforcement is minimal, and under the most unfavorable operating conditions the construction would not be destroyed, and would not accept invalid deflections or cracks. In many cases it is possible to obtain more economical solutions than in the calculation of the previously used methods.

But reaching the limit stage the reinforced concrete structure does not crash immediately, there is some time during which it continues to resist. Nowadays there are no methods that would take this into account.

АЛЬТЕРНАТИВНЫЕ ИСТОЧНИКИ ЭНЕРГИИ В АВИАЦИИ

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There are two reasons for searching alternative sources of energy in aviation. First is the cost of flight – the global aviation industry spends approximately \$200 billion on aviation fuel based on current prices. Second is the environmental pollution. AirportWatch, an umbrella organisation for those concerned about the environmental effects of the aviation industry, reports that the 16,000 aircraft operating on a daily basis emit over 750 million tonnes of CO₂ annually.

Many people believe that electric aviation can replace our oil-based transport with a system that is faster, cleaner and cheaper using existing technology. Electricity may come from fuel cells, solar cells, ultracapacitors, power beaming, or batteries.

Though only small companies and entrepreneurs are currently making fully electric airplanes, larger manufacturers such as Boeing Co. and Airbus are investigating how to electrify portions of aircraft operations as the push for bigger, faster and farther yields to cheaper, quieter and greener. One example is the auxiliary power unit in commercial aircraft. The device, usually located in the tail, is a generator that provides electricity to the plane when it's on the ground and gives power to start the main engines. Boeing and Airbus are experimenting also with electric landing gear that allow aircraft to turn, taxi and reverse on their own power without a truck to push the plane back from the gate. These systems can also integrate regenerative braking so that the energy from slowing a landing aircraft could charge batteries.

Electric aircraft could be useful as trainers for pilots because the aircraft are cheap to operate and trainers seldom venture far enough to test range limits. Defense contractors are also pursuing electric drivetrains to make stealthier unmanned aerial vehicles that have a minimal heat signature. They could also be charged on the fly from photovoltaic panels.