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### **ИСПОЛЬЗОВАНИЕ ВЯЖУЩИХ В СТРОИТЕЛЬСТВЕ**

*Аннотация: Бетон из цемента или других неорганических вяжущих широко применяется в строительстве.*

*Ключевые слова: вода, мелкий и крупный наполнитель, белый и другие цветные цементы.*

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### **USE OF BINDERS IN CONSTRUCTION**

*Annotation: Concrete made of cement or other inorganic binders is widely used in construction.*

*Key words: water, fine and coarse filler, white and other colored cement*

Concrete is an artificial stone material obtained by mixing, compacting and solidifying a mixture obtained in certain proportions of binders, water, fine and coarse aggregates.

Concrete made of cement or other inorganic binders is widely used in construction. These concretes are mainly mixed with water. The active constituents of concrete are cement and water, which react to form a solid cast cement stone that binds the filler particles together. Cement and water are the active components of concrete: as a result of the reactions between them, a cement stone is formed, which binds the filler particles into a single monolith.

ultra-lightweight concrete includes porous concrete, which binds them, finely ground additives and water-added mixture is foamed in a special way (aerated concrete, foam concrete) and coarse porous concrete is prepared on the basis of lightweight aggregate. In aerated concrete, instead of filler, air in the artificially prepared foam is calculated.

The binder is the main component that determines the properties of concrete, and concrete is distinguished by its types, including: cement, silicate, gypsum, alkaline slag, concrete polymer, polymer cement concrete and special concrete.

Cementitious concretes are made from a variety of cements and are widely used in construction. Among them, the main place is occupied by Portland cement concretes and their variants (about 65% of total production). They are used in different constructions and depending on the conditions of use. Shlagoportland cement (20-25% of total production) and puttsolan cement concrete are also used successfully.

Types of cement concrete include: decorative concrete made of white and other colored cement; concretes made of reinforced cement for self-reinforcing structures; special-purpose concretes made of specific clay and impermeable types of cement, etc.

Silicate concretes are made on the basis of lime. Autoclave method is used for hardening of concrete prepared in this way. Gypsum concrete is used in the manufacture of various types of gypsum, interior walls, suspended ceilings and decorative elements. These types of concrete - gypsum cement - puttsolan

concrete has a wide range of applications for water resistance (volumetric blocks of bathrooms, low-rise houses, etc.).

Slag concrete has only just begun to be used in construction. In place of the binder in such concretes is used a mixture of crushed slag with an alkaline mixture. The base of concrete polymers is made of various polymer binders (polyester, epoxy, urea) consisting of monomers that harden in concrete using special additives such as resin or furfuroacetone. Such concretes are very suitable for use in aggressive environments and conditions with very sharp effects (friction, cavitation, etc.).

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