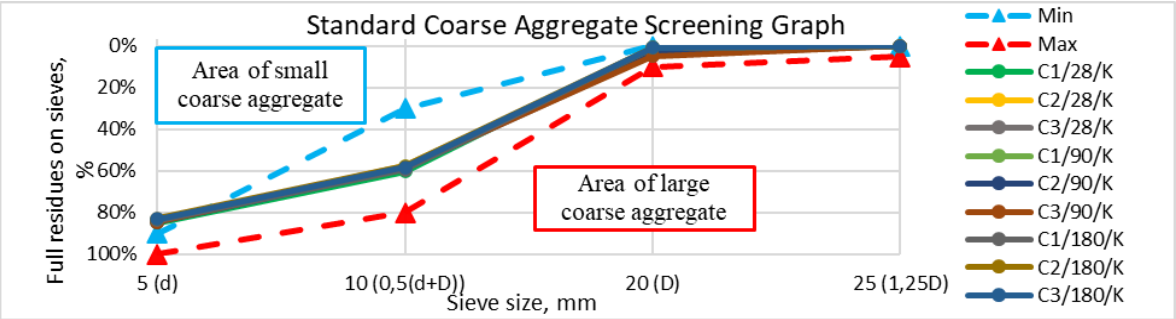
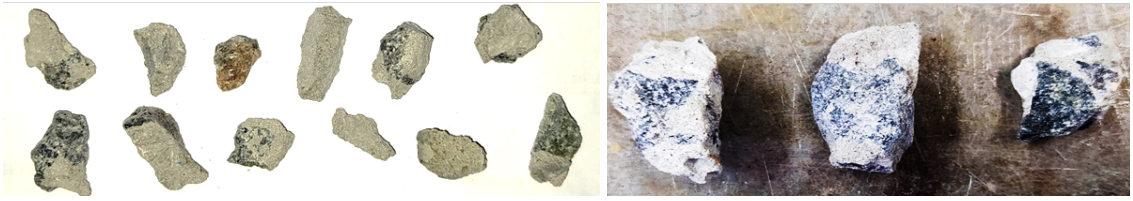


Fig. 2. Sieving curves of only the coarse fractions on the standard graph.

A visual inspection of individual grains of fractionated RCA shows that the content of adhered mortar on the grains of different fractions differs significantly. Almost 100% of grains in the 10-20 mm fraction contain both natural crushed stone and RM. In the vast majority the content of RM is less than 50%. In the fraction of 5-10 mm, a certain amount of grains does not have natural crushed stone at all and in a large number of grains the content of RM significantly exceeds 50% (Fig. 3). Such features obviously determine the different bulk and specific densities of different fractions.



a)b)

Fig. 3. Fractions of RCA 5-10 mm (a) and 10-20 mm (b).

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INDUSTRIAL WOOD-CEMENT-RECYCLED CONCRETE STRUCTURES

The increasing attention to sustainable development and environmental issues in modern construction creates the necessity for the utilization of new materials and technologies. One such innovative approach is the utilization of recycling in the production of wood-cement-recycled concrete structures. This paper is dedicated to exploring recycling technologies and their impact on the characteristics and advantages of industrial wood-cement-recycled concrete structures.

Previous research has focused on various aspects of utilizing secondary materials in construction, including wood-cement-recycled concrete structures. They indicate the potential of utilizing production waste and recycling building materials to reduce environmental impact and resource consumption.

One direction of research is the use of recycled materials such as reclaimed wood and recycled plastic products in the production of wood-cement-recycled concrete structures. This opens up new opportunities for reducing the consumption of natural resources and minimizing waste, thus promoting sustainable material use.

Researchers are also investigating effective waste processing technologies for use in the production of wood-cement-recycled concrete structures. A crucial part of this process is the development of processing methods that ensure the high quality and strength of the resulting structures.

Additionally, research points to the necessity of quality control at every stage of production of wood-cement-recycled concrete structures using secondary materials. This is necessary to ensure compliance with standards and to guarantee the strength and durability of the resulting structures.

Methods of recycling in the production of wood-cement-recycled concrete structures:

Utilization of secondary materials: Various secondary materials such as reclaimed wood, recycled plastic products, etc., can be used in the production process of wood-cement elements.

Processing technologies: To obtain quality wood-cement-recycled concrete structures using secondary materials, it is necessary to develop and implement effective waste processing technologies.

Quality control: It is important to ensure quality control at every stage of production, as the use of secondary materials can affect the characteristics and strength of wood-cement-recycled concrete structures.

Advantages of industrial wood-cement-recycled concrete structures:

Environmental friendliness: The use of secondary materials allows reducing waste and promotes sustainable resource use.

Efficiency: Industrial wood-cement-recycled concrete structures can have comparable strength and durability to traditional structures while reducing the use of natural resources.

The utilization of recycling technologies in the production of wood-cement-recycled concrete structures has great potential for reducing the environmental impact of construction and optimizing resource use. However, to achieve maximum results, further research and implementation of advanced processing and quality control technologies are necessary. The development of industrial wood-cement-recycled concrete structures can be a significant step towards sustainable construction and environmental preservation.

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TECHNOLOGICAL INNOVATIONS IN CONSTRUCTION AND THEIR IMPACT ON MODERN PROCESSES

Construction is an industry that always strives for development and progress. With the advent of new technologies, construction becomes more efficient, environmentally sustainable and dynamic. The construction sector is improving its methods, processes and materials in order to provide quality and environmentally friendly solutions. Population growth, migration processes create new challenges, which