

## STUDY AND ANALYSIS OF CHEMICAL ADDITIVES ADDED TO CONCRETE

Abdurakhimov Abdukarim Abduhalimzoda

Termiz State University

abduraximovabdukarim1996@gmail.co

### ABSTRACT

Concrete and reinforced concrete are the main materials in modern construction, their high performance properties are related to strength, deformability, long-term use, etc., high technological properties, that is, they have excess mobility, which ensures the flowability and good stability of the concrete mixture. This problem can be solved only with the use of modern, effective additives - superplasticizers.

**Keywords:** Chemical additive, plasticizer, control of concrete hardening, giving special properties to concrete, increasing concrete strength.

### INTRODUCTION

According to **GOST 24 211**, chemical additives for concrete are divided into the following types (according to the main effect):

#### 1. Controllers of properties of concrete mixtures:

- a) Plasticizer;
- Group I (superplasticizers);

II I-group (strong plasticizers);

Group III (medium plasticizers);

IV - group (low plasticizers).

- b) Fasteners;
- c) water retainers;
- g) improves reflowability;
- d) managers of the storage of concrete mixtures  
retarders and accelerators of stay;
- e) porous product (for lightweight concrete), air entrainers and gas generators.

#### 2. Controllers of concrete hardening:

- a) hardening retarders;
- b) hardening accelerators

#### 3. Those who increase the strength, resistance to cold, aggressive environment of concrete and precast iron concrete, reduce their conductivity:

- a) I, II, III, IV - group water separators;
- b) colmatization;
- c) air intakes;
- g) gas generators;

- d) those who increase the protective properties of concrete in relation to steel reinforcement (steel corrosion inhibitors).

#### 4. Those who give concrete special properties.

- a) group I, II, III - hydrating additives;
- b) anti-cold (providing solidification at negative temperatures);
- c) bio additives;
- g) polymer.

#### 5. Ground mineral supplements:

- a) inactive;
- b) asset;
- c) plasticizing mineral;

#### 6. Complex additions:

- a) complex chemical additives;
- b) organomineral additives[15].

#### "Beton Strong 17" superplasticizer

This additive "**Beton Strong 17**" superplasticizer is complex, that is, thanks to this additive, the strength of the concrete mixture is increased, the hardening time is accelerated, and the concrete is resistant to freezing. "**Beton Strong 17**" superplasticizer is a complex admixture intended for cold climate conditions, which accelerates the hardening of the concrete mixture, resists its freezing and increases its strength.

"**Beton Strong 17**", a complex plasticizing antifreeze additive for concrete and building mixes, consists of a mixture of sodium polynaphthalene methylene sulfonate and sodium formate.

#### Field of application:

- production of reinforced concrete and monolithic concrete;
- production of light, including porous concrete;
- efficiency of preparation of construction mixtures;
- cement hydration processes concrete hardening below -150C provides passage at non-temperature;
- at a water age of 28 at a temperature below -150C
- helps the building mix and concrete to achieve critical strength[22].

Increases the mobility of the concrete mixture from P1 to P5 and the mixture from PK1 to PK4 (the strength does not decrease during the hardening period).

When mixed with water, it reduces the water requirement by **20%** to **25%** (in the same dynamic mixture).

It prevents formation of salts on the construction surface and does not cause erosion of concrete reinforcement. Effectiveness of the use of Krioplast SP 15-1 additive in the application of heat treatment or thermal storage of the structure.

In the construction of reinforced concrete and concrete structures, admixture prevents freezing of concrete mixtures before the start of active heat treatment.

In the absence of mandatory periods of heat treatment, it prevents the suspension of cement hydration processes and freezing of the mixture, significantly increases the strength of the collection under the influence of positive temperatures[16].

In order to ensure the transportation of the structure made from the concrete mixture at a temperature not lower than **25%** with the condition of subsequent heat treatment, it is used as an additional anti-cold quality for warm floors in accordance with **GOST242 11-08** when the ambient temperature is up to **25%**.

provides an opportunity to shorten the mode of heat treatment of concrete in comparison with multi-component anti-cold additives[22].

### CONCLUSION

in conclusion, the used binding materials, the characteristics of the chemical additive used in lightweight concrete, the methods of conducting experimental work to study the effect of the chemical additive "**Betong strong-17**" on putsolan portland cement have been presented.

Regarding the properties of the used materials, the properties of cement and chemical additives were considered.

The method of execution of the work is mainly chemical additive "**Beton strong-17**"

The effect of superplasticizer Oxongaron **PPTs400** (putzsolan portland cement) on the properties of lightweight concrete was studied.

The results of the research were based on four different amounts of "**Beton Strong 17**" in relation to the cement mass, and we chose **1%** as the most optimal amount for us.

### REFERENCES

1. ГОСТ 24211-2003. Добавки для бетонов и строительных растворов.
2. Изотов В.С, Соколова Ю.А. Химические добавки для модификации бетона. Монография Палеотип Москва 2006.
3. Романова Н. А., Лагойда А. В. Бетон с противоморозной добавкой ФТП// Химические добавки для бетонов.– М.: НИИЖБ, 1987
4. Abduhalimzoda, Abdurahimov Abdukarim. "LIGHTWEIGHT CONCRETES BASED ON POROUS AGGREGATES." *American Journal of Business Management, Economics and Banking* 5 (2022): 15-18.
5. Abduhalimzoda, Abdurahimov Abdukarim. "TECHNOLOGY OF PREPARATION, TRANSFER AND PLACEMENT OF FILLING MIXTURES." *Galaxy International Interdisciplinary Research Journal* 10.11 (2022): 1098-1101.
6. Rakhimov, Shavkat Turdimurotovich, Isroil Abdigapparugli Alimov, and Abdukarim Abduxalimzoda Abduraximov. "Composition and properties of special solutions." *Asian Journal of Multidimensional Research* 10.10 (2021): 843-848.
7. Abduhalimzoda, Abdurahimov Abdukarim. "STUDY OF PRODUCTION OF LIGHTWEIGHT CONCRETES BASED ON EXPANDED CLAY." *American Journal of Pedagogical and Educational Research* 13 (2023): 19-22.

8. Abdukhalimzoda, Abdurakhimov Abdukarim. "Application of ASH of Heat Power Plants in Mixtures." *Central Asian Journal of Theoretical and Applied Science* 2.11 (2021): 1-6.
9. Abduhalimzoda, Abdurahimov Abdukarim. "STUDY OF PRODUCTION OF LIGHTWEIGHT CONCRETES BASED ON EXPANDED CLAY." *American Journal of Pedagogical and Educational Research* 13 (2023): 19-22.
10. Абдуҳалимзода, Абдурахимов Абдукарим. "СУПЕРПЛАСТИФИКАТОР ҚЎЛЛАБ ТЎЛҒАЗУВЧИ ҚОРИШМАЛАРНИНГ ХОССАЛАРИНИ ЯХШИЛАШ." *Spectrum Journal of Innovation, Reforms and Development* 8 (2022): 250-254.
11. Abdukhalimzoda, Abduraximov Abdukarim. "THE USE OF FILLER MIXTURES ASSESSMENT OF THE CURRENT STATUS." *Galaxy International Interdisciplinary Research Journal* 9.12 (2021): 467-470.
12. Valiyevich D. S., Do'stmurodovich S. O., Jo'raqulovich D. B. MODELING AND EVALUATION OF INTERSECTIONS IN TERMEZ USING MODERN SOFTWARE //Finland International Scientific Journal of Education, Social Science & Humanities. – 2023. – Т. 11. – №. 6. – С. 856-862.
13. Kuziyev A. U., Suyunov O. D., Xurramov K. B. Improving the quality of passenger service in city public transport //International bulletin of engineering and technology. – Т. 2. – №. 12. – С. 157-161.
14. Кузиев А. У., Муратов А. Х. Развитие и эффективное использование региональных сетей мультимодальных перевозок. – 2020.
15. Kholikberdievich M. A., Turdalievich K. A. IMPROVING THE PROCESS OF DELIVERING SCATTERING LOADS TO THE CONSTRUCTION OBJECTS BY USING AUTOMOBILE TRANSPORT //Harvard Educational and Scientific Review. – 2021. – Т. 1. – №. 1.