International Journal of Education, Social Science & Humanities. FARS Publishers
Impact factor (SJIF) = 6.786

Volume-11| Issue-2| 2023 **Research Article**

BUILDING MATERIALS DETERMINED IN THE ARCHITECTURAL MONUMENTS OF CENTRAL ASIA

https://doi.org/10.5281/zenodo.7618801

Teshaboeva N.D.
Fergana Polytechnic Institute. St.prepod.kafedry "GKK"

Received: 08-02-2023
Accepted: 08-02-2023
Published: 22-02-2023

Abstract: In the article, the durability of building materials in certain climatic conditions remains one of the most unsolved problems. Each place has its own characteristics, and they say that the surrounding materials are checked simultaneously and regularly under the influence of a number of factors.
Keywords: building materials, standards, laboratory conditions, climatic conditions.

The durability of building materials in certain climatic conditions remains one of the least solved problems. Each location has its own characteristics, and the surrounding materials are checked simultaneously and regularly under the influence of a number of factors.

All impacts on materials during their appearance, normal operation and obsolescence are taken into account in two ways: in the laboratory or by observing in nature materials in long-lived structures, that is, in architectural monuments.

Knowing the composition and characteristics of materials, as well as the full range of impacts that they will be exposed to over a long period of time, it is possible to predict how long each material will last, which in turn allows predicting the durability of similar modern materials.

In the complex and bright natural and climatic conditions of Central Asia, building materials are tested in various ways for many factors that in one way or another affect their durability. During the year (up to 60-700C) and during the day (up to 250C) there are sharp fluctuations in air temperature, frequent transitions from zero, summer temperatures that strongly heat the surface of buildings (up to K700C), dry air, sand and these include strong winds at high speeds that cause moisture, strong and almost complete salinization of soils, and the fact that most areas are in a seismic zone.

The long-term durability of building materials stored in the monuments of the country is an object of constant work. A set of external influences on materials was determined, their ability to withstand such influences was determined, and the reasons for the greater or lesser resistance of materials were explained. The main

role in the study is to observe materials in architectural monuments in kind, followed by the study of selected samples in the laboratory. First of all, it is necessary to determine what components the material is made of, in what proportions and how.

Due to the lack of written sources in general, it is extremely difficult to restore the original composition of a wide range of building materials. The range of materials, various parts of the structure, the state of their individual types is restored, samples are taken for analysis in the laboratory. At the same time, information is collected about deposits, raw materials that can be used. In the laboratory, material samples are studied in detail: their strength, frost resistance, water resistance and other properties are determined, i.e. physical and technical parameters are determined.

Chemical and spectrographic analyzes were carried out, their structure and mineral composition were studied. Based on the results of the analysis, the content is calculated. Sample analogies are created based on the obtained content calculations and the concentration is checked. A comparative study of old and new materials allows you to determine what changes have occurred over a long time of their use.

Based on the composition and characteristics of ancient materials, knowing what effects they had during operation, it is possible to draw conclusions about the durability of these materials, which, in turn, allows us to predict the durability of modern materials like them. It turned out that the studied materials of architectural monuments of Central Asia include: Raw materials - cotton in the form of blocks and shelves; unworked bricks of various sizes, fired from clay; clean and mixed with straw, sand and gravel.

The raw material is one of the oldest building materials in Central Asia and has been used regularly for almost 2000 years. Their storage largely depends on the humidity of the environment. The waterproofing and foundation structure of a building rebuilt from raw materials is of great importance. The bottom of clay bases suffers greatly from its capillary rise as the water evaporates.

1. Burnt brick is a brick-rectangular, square shape used for lifting columns, filling the tops of door frames and windows, making floors, collecting waterproof supports. Since the end of the ninth century, clay has been commonly used as a facing material and as a building material in the construction of large structures.

2. Square bricks are widespread almost everywhere. Rectangular bricks are typical for the construction of the cities of Osh, Uzgen, Samarkand and Tashkent in the 11th-12th centuries.

The strength of the brick when added is 100-200 kg/m2, and its frost resistance is characterized by 15-25 cycles of freezing and thawing. Regardless of

the climate zone, the storage is very high. The durability of fired bricks directly depends on the degree of firing: a well-fired brick will quickly collapse under the influence of cold, flood, moisture and wind. Normal fired brick has good salt resistance compared to good fired brick, but moisture will be capillary absorption zone. Therefore, if it is not protected, it will collapse.

Conclusions:

Therefore, if it is not protected, it will collapse. Well-fired bricks can be stored anywhere. the brick wall begins to crumble as a result of wet freezing accumulated from wind spray, rain and snow.

Among the unglazed ceramic tiles in ancient buildings, the following can be distinguished:

1. Covered with a brick the size of a polished dial. The covering is smooth, without patterns, and the decoration is only a kungurador, forming a different arrangement of bricks, a kungurador carpet (a Samanid tomb built in the 10th century in Bukhara) along the relief.

2. Kungrador tile is made by grinding burnt bricks.

3.Smooth tiles used for coatings used in combination with glazed bricks.

4. Bricks with deep relief before firing. The relief creates an external finish in a prefabricated form.

5. Slabs commonly referred to as terracotta are carved in ornaments of various depths and fineness. With the exception of embossed terracotta, unglazed facing materials usually do not differ in any way from brick, which is assembled in terms of preservation and physical and mechanical properties. As with all unglazed stoneware, the material for crushed terracotta is healthy soil. If it is cooked well, the strength of the product will increase, and it will reach 600-800 kg/m. Frost resistance is 50 times higher than other paint materials and can withstand wind and salt corrosion.

Glazed ceramic tiles look like this:

1.Different cladding boards, which differ from embroidered terracotta only by surface glazing: one color and two different colors. The preparation and firing of the molded mass is generally the same as that of unglazed terracotta, the firing usually having a strength of 180-300 kg/m. allowed to obtain high quality ceramics.

2. Glazed tiles - wall and tomb. Tiles of the same color have a trapezoidal cross-section and a rectangular front surface. The size varies depending on the place of use (Bibikhanim-550m.). The surface of the back side is decorated with various roughness (longitudinal deep line, grooves on both sides, etc.), so that the tiles integrate well with the reinforcing compound. The strength of the tiles is in the range of 75-200 kg/m2, withstands 12-20 freezing cycles. The tiles are well

preserved. Glazed ceramics (tiles) based on silicate ceramics. Since the XII-XIII centuries, it has been glazed in the decoration of the monuments of Central Asia.

LITERATURE:

1.Opolovnikov A.V. "Restoration of monuments of national treasures", M., Stroyizdat. 1974.

2. Schilling Kantakzino., P. Brandt. "Restoration of buildings". M., Stroyizdat. 1984.

3.Teshaboeva N.D. Accounting for seismic zones in the design of load-bearing structures. FARPI ITJ NTJ. 2019.№1.

4. Teshaboeva N.D. Improving the structure and properties of concrete in a dry hot climate with a hydrophobic-plasticizing additive.

5.Teshaboeva N.D. IMPROVEMENT OF THE STRUCTURE AND PROPERTIES OF CONCRETE UNDER THE CONDITIONS OF DRY HOT CLIMATE HYDROPHOBIC - PLASTIC ADDITIVE. INTERNATIONAL JOURNAL OF RESEARCH CULTURE SOCIETY Monthly, Peer-Reviewed, Refereed, Indexed Journal . Accepted on : 20/11/2019

Djuraevna T. N. INFLUENCE OF SURFACE-ACTIVE ADDITIVES ON THE PHYSICO-TECHNICAL PROPERTIES OF CEMENT //Eurasian Journal of Academic Research. – 2021. – С. 8.

6. Djuraevna T. N. Installing power collectors in repair of effective buildings //ACADEMICIA: An International Multidisciplinary Research Journal. – 2020. – Т. 10. – №. 5. – С. 823-826.

7. Teshaboeva N. D. A method for determining the capillary permeability of concrete in a dry hot climate. EURASIAN UNION OF SCIENTISTS (ESU).-2019. – 2019.

8. Djuraevna T. N. Loss of plasticity by cement systems during time //ACADEMICIA: An International Multidisciplinary Research Journal. – 2021. – Т. 11. – №. 3. – С. 1829-1833.

9. Teshaboeva N. D. A method for determining the capillary permeability of concrete in a dry hot climate. EURASIAN UNION OF SCIENTISTS (ESU).-2019. – 2019.

10. Teshaboeva N. D.CONDITIONS FOR OBTAINING HYDOPHOBIC CEMENT Teshaboeva Nodira Djuraevna, No‘monov Jasurbek Omonullo o‘g‘li Page No.: 120-123.

11. Teshaboeva N. D.SPECIAL CEMENT FOR CONCRETE PREPATION Teshaboeva Nodira Djuraevna, Page No.: 81-84.