

Original Research Article

Analysis of the Application of Grouting Technology in Building Civil Engineering

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Abstract: Due to the continuous development of social economy, people's demand for materials is also increasing. In the context of increasing attention to the quality of material life and quality, people's attention and requirements for building safety have also increased. Cracks in buildings are the most common problems of civil engineering in the current construction, which will seriously affect the aesthetics and safety of buildings, thereby bringing hidden safety hazards to people's production and life. It is very necessary to improve the safety of construction civil engineering. In the construction process, the use of grouting technology can effectively avoid the occurrence of cracks. This article discusses and analyzes the application of grouting technology in order to provide some methods and suggestions for future construction projects.

Keywords: Architecture; Civil Engineering; Grouting Technology

1. Introduction

At present, the grouting construction method is generally applicable to most buildings. Because of the simple construction process and high flexibility, the grouting process has a remedial effect on improving the quality of the entire project and is widely used in construction projects. Its characteristics of effectively improving the quality of buildings are favored by construction projects. Grouting construction technology is an advanced technology worth studying. The grouting process refers to making the slurry into clinker according to the pre-formulation in a specific environment, and then using the transportation means to transport the material to the place where the construction is to be used.

2. Practical introduction of grouting process

Grouting technology has great applicability in the

construction of civil engineering. It not only guarantees the safety of construction and the quality of buildings, but also can beautify buildings and protect the environment. There are many advantages in the practical application of grouting technology, mainly including the following points:

First, the operation equipment is light, easy to carry and operate, and the operation process is also very simple. In the more complex construction civil engineering construction environment, the grouting technology can also be used for operation^[1]. Second, the grouting technology can inject the slurry into the cracks of the concrete, to effectively improve the internal density of the concrete, and thus strengthen and bond the outside well, that is to say, its filling effect is very good. In the construction of civil engineering construction, grouting technology can be used to effectively coordinate concrete and internal structure to increase the strength of

concrete, and the integration of the internal structure of the building is guaranteed. Third, the materials used in the grouting technology are all materials with good overall performance, good adhesion and correlation, and the material aging rate is very slow and the service life is long, so the pressure on the environment is also small. The grouting technology mainly uses mud to fill the gaps during construction, which not only improves the waterproofness of the concrete, but also improves the waterproofness of the building to a certain extent^[2].

3. Application of grouting technology in construction engineering

3.1 Using grouting technology for concrete construction

During the construction of civil engineering, the construction of concrete should be carried out. At this time, the grouting technology can be used to promote the progress, which not only ensures that the crack problem will not occur, but also improves the integration of construction. The construction process of concrete buildings is mainly for the concrete construction of concrete building structures, beams and columns and other gravity structures and overall construction. In the construction project, the stability and safety of the whole building need to be verified by the beam and column and concrete structure of the building^[3]. Generally speaking, traditional building construction will cause problems such as cracks in the entire civil engineering construction. Not only does the reduced safety of the building result in a decrease in the occupancy rate, but also brings great pressure to the living environment. Therefore, the use of grouting technology for the actual construction of civil engineering is a very necessary link. The grouting technology is mainly used in the concrete construction process in the actual application process, and the size of the aperture needs to be kept in the range of 0.7-1.5 mm. If the aperture is too small, it will be difficult to guarantee the efficiency and quality of construction in practical use. If the aperture is larger in actual operation, the stability of the building will be greatly reduced. Therefore, to ensure the smooth progress of construction civil engineering, it is necessary to reasonably control the

aperture and keep it within a certain range. The distance between the hole and the hole needs to be controlled between 310-410 mm, which requires the design of the depth according to the operation requirements and actual conditions^[4]. In order to effectively avoid slurry seepage during actual construction operations, epoxy glue can also be applied at a position where cracks occur about 25-30 meters, so as to ensure the efficient application of grouting technology and accelerate construction progress.

3.2 Use grouting technology to improve the basement

The basement is also an important part of construction civil engineering construction operations. During the actual construction operation, the basement often leaks, which makes the safety of the basement not effectively guaranteed. The leakage in the basement mainly includes the problem of pouring tape and the leakage of external walls^[5]. The main reason for the leakage of the outer wall of the basement is due to its own improper concrete configuration, errors in the second vibration operation, or the thickness of the outer wall facing the water too much, *etc.*; Or the lack of protection caused rain after the construction work and was hit hard by rainwater, with serious penetration. Or it is because the basement protection measures are not in place, there is no second-level waterproofing protection, and the pouring garbage is not cleaned in time. For this kind of problem, it is necessary to strictly implement procedures according to the actual construction requirements, and treat the problem as an actual application accident, so as to effectively ensure the efficiency of construction civil engineering construction^[6]. When the buried pipe and the groove are wet, an appropriate amount of water to the material can be added to enhance the actual application effect of the grouting process. If the gap is dry, a low-viscosity material can be chosen and the cooling time can be controlled reasonably. At least 10 hours is required. Only by strictly following the various standards of grouting technology can the bonding effect be improved^[7].

3.3 Design of walls using grouting technology

In the course of building civil engineering, the wall

is cracked due to man-made damage, the construction temperature is too high or too low, and the construction personnel are not operating properly. In general, deeper cracks in the wall will be more difficult to repair than the wall panel. When repairing different walls, the construction personnel should combine the actual situation with the design plan and select the appropriate grouting material. After the grouting is completed, it is necessary to find the missing parts in the repair, and then reuse the materials to solve the problem^[8]. Therefore, during the construction process, the construction personnel should pay high attention to the wall of the building to avoid accidents in practical applications. Construction personnel can use appropriate materials to improve their shear strength, and for the places where frequent cracks can be perforated around to increase its firmness. When the external wall is grouted, small holes can be added to increase the density of the external wall, ensure that it will not seep, and effectively improve the safety and stability of the building^[9].

4. Conclusion

The use of grouting technology in construction civil engineering can provide certain remedies for buildings, improve the quality of construction projects, and reduce the occurrence of safety problems. The grouting process provides technical support for the development of construction projects, effectively solves the problems in construction civil engineering, and at the same time can improve the quality of construction projects and ensure the safety of buildings. The rapid development of the construction market at the same time makes the market competition increasingly fierce. Only by improving the grouting technology can the construction quality be ensured and the foundation for enterprises to seize the

market.

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