

Causes and Countermeasures of Concrete Cracks in Construction Engineering

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Abstract: In the context of the current urbanization and industrialization process, the construction industry as an important basic industry to promote the development of the national economy, how to effectively improve the construction quality and construction efficiency is the core development direction of enterprises at this stage, but at present, due to the influence of many uncontrollable factors, the existence of concrete crack problems has not been effectively solved. While reducing the construction efficiency, it also poses a huge safety hazard to people's lives and property. The reasons for the formation of concrete cracks during the construction of construction projects, and comprehensive analysis of their optimization and treatment measures, in order to comprehensively improve the construction efficiency, lay a solid foundation for the realization of corporate sustainable development goals.

1. Introduction

With the accelerating process of economic globalization and integration, the scale of construction and the number of constructions are expanding, and new requirements are placed on the overall construction quality of construction projects, but currently it is in the current diversified market. In the new market economy where competition is intensifying, due to some uncontrollable factors, the problem of concrete cracks is still common. At present, the common concrete cracks mainly include cracks caused by load cracks, temperature cracks and unqualified construction quality. In some respects, the size of cracks in construction work is not static.

2. The Cracks of Concrete in Construction Engineering Construction Work

It is necessary to fundamentally avoid the occurrence of engineering safety accidents, clarify the factors causing concrete cracks, and rationalize them to prevent construction. The important strategic means of rationalizing construction, but specifically the main factors leading to concrete cracks are:

2.1 Unscientific and Unreasonable Construction Engineering Design

With the accelerating construction process of urban and rural integration in recent years, the scale and construction of construction enterprises are expanding. At the same time, some enterprises are over-constructed in the construction process due to the deep-rooted influence of traditional enterprise development concepts and management concepts. Focusing on the economic and social benefits of the enterprise, but neglecting the influence of engineering design on the quality of construction engineering, the unscientific and unreasonable engineering design is not uncommon, and finally has a certain impact on the construction quality and construction efficiency. People's life and property have buried huge hidden dangers. In addition, in the early stage of architectural engineering design, designers often only go to the construction site for practical investigation based on past construction design experience. The design contents are not only inconspicuous, but also exist. Certain errors have aggravated the problem of concrete cracks and caused extremely adverse effects on the overall development of the company.

2.2 The Construction Materials of the Construction Project Are Unqualified

In the current diversified market competition environment, as an important basic industry to

promote the development of the national economy, construction enterprises have made breakthroughs in industrial scale and industrial quantity in recent years, but as the market competition intensifies, some construction units are lowering enterprises. Construction cost, improve the efficiency of enterprise construction, reduce the procurement standard of materials in the process of procurement of construction materials, and continuously increase the quantity of defective materials. In the long run, the problem of concrete cracks is intensified, and the overall stability of construction engineering is greatly reduced. And safety, which ultimately has a very negative impact on the overall development of the enterprise. In addition, during the construction operation, the non-standard operation of the construction personnel and the non-compliance of the process are also important reasons for the concrete crack problem. Construction benefits are also extremely unfavorable.

2.3 Foundation Deformation during Construction Operation

Compared with other industrial projects, there are many uncontrollable factors in the construction process of construction projects. Therefore, in some respects, the engineering quality problems are relatively more. Therefore, it is necessary to fundamentally avoid other engineering construction problems. Before carrying out the construction work, the relevant staff of the construction unit shall go to the construction site for actual inspection, so as to ensure the scientific, rational and targeted development of various construction strategies, and finally lay down the expected construction targets. A solid foundation, but for the time being, due to some uncontrollable factors, such as weather changes, strenuous exercise and other factors, it will lead to deformation problems in the foundation, which will eventually lead to concrete crack problems and reduce the economic benefits of enterprises. It also laid a huge safety hazard to people's lives and property.

2.4 Crack Problems Caused by Temperature Factors

According to a large number of survey data, there is a certain temperature difference between the inside and outside of the concrete, and the existence of this temperature difference is not only easy to cause concrete crack problems, but even has a certain impact on the overall structure of the concrete, but it is undeniable that this temperature difference The phenomenon is unavoidable. In other words, the concrete has the characteristics of thermal expansion and contraction. The change of the external temperature during the construction work will also cause certain deformation of the concrete, especially the concrete part exposed to the outside. The time is affected by the natural factors of the outside world. In the long run, the structure of the concrete itself can still be changed. However, since the raw materials made of concrete are not sensitive to the temperature change, the temperature crack problem has not been effectively treated.



Fig.1 Cracks Caused by Temperature Factor

3. The Treatment of Cracks in Construction Work

3.1 Paying More Attention to Concrete Design Work

According to the above analysis, in the process of concrete construction, the scientific and rationality of the construction engineering design will not only have a certain impact on the construction efficiency, but also the influence on the construction quality can not be ignored,

especially in the In the context of the industrial era in which the construction scale and construction volume of construction enterprises are expanding, it is necessary to improve the construction quality and construction efficiency of the project and improve the attention to concrete design work. In some respects, it is on the one hand before the concrete mixing, the staff should continuously adjust the mix ratio of the concrete according to the construction standard and construction specifications of the project to ensure the reasonableness and accuracy of the concrete mix ratio, and finally lay a solid foundation for the expected construction target. Foundation, on the other hand, in the concrete mixing ratio debugging process, the relevant staff also need to take into account the durability and maximum bearing capacity of the structural materials, concrete frost resistance and other factors, thereby reducing the occurrence of concrete cracks, A solid foundation for the achievement of the Sustainable Development Goals.

3.2 Strict Control of Concrete Materials and Construction Operations

In the current construction work, whether the quality of concrete raw materials meets the standards has an important impact on the overall construction quality and construction efficiency of the project. In recent years, with the continuous expansion of the scale and construction of construction projects, the competition in the enterprise market has become increasingly fierce. Therefore, in order to reduce the construction cost and improve the economic efficiency of the enterprise, some construction units purchase low-quality concrete during the procurement of concrete materials, which aggravates the crack problem and seriously damages the stability and safety of the concrete project. Sexuality ultimately has a very negative impact on the overall development of the company. To do this, we must fundamentally avoid the above problems. In the process of concrete procurement, the construction unit should try to purchase from the regular manufacturers, and effectively Reduce the shrinkage of concrete, and buy concrete materials with higher label and less moisture content when purchasing. In addition, during the concrete construction work, the staff also needs to strictly follow the construction operation process, and according to the different requirements of the concrete strength of the project, adopt the appropriate gongs and drums method, and do the gongs and drums operation, which is the enterprise. Achieving a solid foundation for the achievement of the sustainable development goal, at the same time, after the concrete compaction operation is completed, and then loading it into the formwork to control the shape, the relevant staff not only need to strictly control the time of the mold, but also regularly on the concrete. The strength is tested to reduce the likelihood of cracking problems.

3.3 Do a Good Job in the Maintenance of the Construction Project

After a large amount of research data analysis, it can be seen whether the concrete maintenance work in the later stage of the concrete project can be implemented. In some respects, it also has certain influence on the concrete crack problem. However, at present, some construction units are affected by the construction work. The deep-rooted influence of traditional enterprise development concepts and management concepts neglects the maintenance and repair of concrete in the later stage, which not only increases the incidence of cracks, but also burys huge hidden dangers for people's lives and property. In the above-mentioned problems, the construction unit should carry out the moisturizing measures on the concrete surface during the maintenance work in the later stage of the project, especially in the dry season, the construction unit can carry out watering treatment, and on the other hand, during the demoulding operation It is necessary to ensure that the concrete curing time reaches the specified time before it can be carried out. Only in this way can the overall construction quality and construction efficiency of the project be effectively and effectively improved.

4. Conclusion

All in all, in the process of construction engineering construction, the existence of cracks not only greatly reduced the economic and social benefits of the enterprise, but also laid a huge safety hazard to people's lives and property. Therefore, during the construction operation, Improving the

importance of dealing with cracks, and adopting scientific and reasonable prevention and treatment measures are important strategic means to promote the sustainable development of construction enterprises at this stage.

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