

Construction Technology of Waterproof Roadbed Surface in Road and Bridge Construction

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Abstract: with the Continuous Acceleration of Urban and Rural Integration Construction, Road and Bridge Engineering is an Important Part of Municipal Engineering. Its Construction Quality and Construction Efficiency Have Been Highly Concerned by All Walks of Life, But in the Course of Engineering Construction Operations, Due to Various Parties the Influence of Uncontrollable Factors, There is Always a Certain Gap between the Overall Construction Quality of the Project and the Expected Construction Target. Especially for the Waterproof Pavement Construction Work, in Order to Obtain the Expected Construction Benefits, the Construction Unit Needs to Start from the Construction Technology, Aiming At the Waterproof Roadbed. Frequently Asked Questions to Adopt Effective Optimization Strategies to Lay a Solid Foundation for the Realization of Corporate Sustainable Development Goals.

1. Introduction

If there is a problem with the waterproof foundation of the road bridge, the water seepage will definitely occur on the bridge surface, and the bridge foundation will be loosened and the bridge surface will be cracked. This will seriously affect the safety of the bridge and its service life will be greatly shortened. It will affect people's normal life, increase the chances of traffic accidents, and will also affect the city's economic development.^[1] Therefore, in the actual construction of the waterproof foundation of road and bridge, the relevant units need to design the waterproof system construction map in advance to ensure that it has the corresponding scientific nature. Construction technology must be selected in conjunction with the actual situation on site to ensure the quality of construction materials and construction equipment. Only in this way can the quality of the waterproof base surface of the bridge be improved.

2. Basic Overview of Construction Technology of Waterproof Roadbed Surface Construction of Road and Bridge Engineering At the Present Stage

According to a large number of survey data analysis, in the current road and bridge construction operation, the construction quality and construction efficiency of the waterproof roadbed have an important impact on the overall construction quality and construction efficiency of the project. To this end, we must fundamentally guarantee the road bridge. Maximize the performance of the project and extend the service life of the project. During the construction operation, the staff should adopt scientific and reasonable waterproof roadbed construction technology to avoid the problem of water seepage. For now, the common waterproof roadbed construction The technology has:

2.1 Shot Blasting Construction Technology

In the construction process of road and bridge engineering, the application of shot blasting technology is to clean the floating surface and impurities of the concrete surface, and then to equalize the rough thickness of the concrete, the workers of the construction unit need to rough the concrete surface. Compared with other waterproof road surface construction techniques, the application of shot blasting technology needs to be carried out by means of shot blasting machine. In order to ensure the construction quality and construction efficiency of the project during the use,

the staff should try their best to do the following work, namely On the one hand, if the construction area of the waterproof road surface is large, the construction unit needs to perform the shot blasting test to determine the relevant parameters before the construction work. On the other hand, during the use of the shot blasting machine, it is necessary to ensure the one-time operation of the shot blasting operation. If the middle must stop, the staff should put the shot blasting machine back a distance after the re-use. Finally, after the shot blasting operation is completed, the staff also needs to carry out a comprehensive inspection on the basis of timely filling the void area. To lay a solid foundation for the realization of corporate sustainable development goals.^[2]

2.2 Waterproof Bonding Layer Construction Technology

From the current point of view, in the process of waterproofing roadbed construction, the application of waterproof bonding layer construction technology is to improve the waterproof performance of the bridge deck, thereby prolonging the service life of the pavement, and finally achieving the sustainable development goals of the enterprise. In order to ensure the construction quality and construction efficiency of the project, the staff should try their best to do the following work,^[3] namely: checking the performance of the mechanical equipment Parameters, according to the nature of the project, adopt a suitable waterproof bonding layer spraying method, and establish a suitable construction plan according to the project construction objectives. In the process of construction work, the same as the shot blasting operation, the construction technology of the waterproof bonding layer needs to be surveyed before the actual application, so as to avoid a series of problems and ultimately the expected target. The acquisition has laid a solid foundation.



Fig.1: Shot Blasting Work Diagram



Fig.2: Waterproof Bonding Layer Construction

3. Analysis of Common Construction Problems during the Construction of Road and Bridge Engineering

3.1 The Construction Materials Are Unqualified, Reducing the Overall Performance of the Project.

In recent years, with the accelerating process of urbanization and industrialization, construction enterprises, as an important basic industry to promote the development of the national economy, have been expanding their industrial construction scale and construction, and their market competitiveness has intensified. Fundamentally reduce the construction cost of the enterprise. In the process of purchasing construction materials, the raw materials that are cheap but of poor quality are often purchased, which leads to the increase of the crack problem during the construction work, and also greatly reduces the The overall safety performance of the project, in addition to the preservation of raw materials, some construction units failed to properly maintain the performance of the construction materials, material moisture is more common, affecting the quality of materials, but also the overall performance of road and bridge engineering continues to decline.

3.2 The Design of the Waterproof Road Surface is Not Scientific, and the Performance of the Base Surface Cannot Be Fully Exerted

In the process of construction of road and bridge waterproof subgrade, the scientificity, rationality and effectiveness of the design have an important impact on the overall construction quality and performance of the project to a certain extent, but it is undeniable that During the design operation, the designer ignored the attention to the design of the waterproof road surface, resulting in certain unreasonable phenomena in the arrangement of various systems, especially the drainage system of the waterproof road surface. The design is unscientific and unreasonable from some aspects. In general, it is easy to cause cracks, which ultimately has a very negative impact on the overall service life of the project and the performance of all aspects.

3.3 The Application of Construction Technology is Unreasonable, and the Safety of Roads and Bridges is Affected

In the process of construction work, the waterproof roadbed surface is an important part of the construction of road and bridge construction. Whether the construction work can be implemented to a certain extent has an important impact on the overall development of the construction unit, but it is undeniable that During the actual construction operation, due to the deep-rooted influence of the traditional enterprise management concept and development concept, some construction units paid excessive attention to the economic and social benefits of the enterprise during the construction operation, and failed to strictly follow the construction standards during construction. The problems of non-standard waterproof coating and incomplete processing of concrete parts are common. In the long run, the overall construction quality and construction efficiency of the project have not only been affected, but the most important one has greatly reduced the service life of road bridges. People's lives and property have buried huge security risks.

4. The Treatment of Waterproof Subgrade Construction Problems in the Construction of Road and Bridge Engineering

4.1 Raising Attention to the Procurement and Storage of Construction Materials

In the process of construction work, whether the quality of construction materials meets the requirements of engineering construction standards, to a certain extent, has an important impact on the construction quality and construction efficiency of the enterprise. To this end, it is necessary to fundamentally avoid the generation of a series of construction problems. On the one hand, the construction unit needs to pay more attention to the construction procurement operation, and strengthen its supervision and management to ensure that the quality and performance of the purchased materials meet the engineering construction requirements and construction specifications,

so as to lay a solid foundation for the smooth development of construction operations. On the other hand, when the construction materials are purchased, in order to ensure that their performance is not affected, the construction unit staff also needs to scientifically store them according to the material properties, and finally lay a solid foundation for the expected construction benefits.[4]

4.2 Ensuring the Standardization of the Construction Work of the Waterproof Road Surface

In the process of construction work, the scientificity, rationality and effectiveness of the construction work have an important impact on the overall performance of the project in some respects. However, through the above analysis, the construction unit staff is conducting In the actual construction operation, the illegal operation phenomenon is not uncommon. To a certain extent, it not only fundamentally reduces the construction quality and construction efficiency, but also buries certain safety hazards for the later construction work. To this end, it is necessary to fundamentally avoid the above. The occurrence of the problem will effectively protect the overall construction efficiency of the project and extend the service life of the road and bridge project. [5] During the actual construction operation, the construction unit must ensure that all construction operations are implemented to ensure the stability and flatness of the waterproof roadbed. In addition, in each construction link, the construction unit must also strictly follow the construction construction standards and do the corresponding construction work, in order to lay a solid foundation for the realization of the sustainable development goals.

4.3 Do a Good Job in the Maintenance of Waterproof Roadbed

During the construction work, some construction units were deeply influenced by the development concept and management concept of traditional enterprises, and paid too much attention to the economic benefits of the project, but neglected the maintenance of the later stage of the project and aggravated the crack problem. The overall development of the enterprise has also caused extremely adverse effects. To this end, we must fundamentally avoid the occurrence of the above problems, effectively guarantee the full play of the project's performance and extend the service life of the project. The construction unit needs to do a good job of maintenance in the later stage, that is, to check the actual situation of the road surface in real time, and deal with the hidden dangers found in time to avoid further expansion of the situation.

5. Conclusion

All in all, with the continuous expansion of the construction scale and construction quantity of road and bridge projects, in the process of construction of waterproof roadbed surface, in order to fundamentally avoid a series of other problems, the construction unit not only needs to improve the procurement and storage of construction materials. Pay attention to the standardization of the construction work of the waterproof road surface and the maintenance work of the waterproof road surface. It is also necessary to improve the design level of the drainage system and do the geological survey work, so as to lay a solid foundation for the realization of the sustainable development goals of the enterprise.

References

- [1] Wang Chunhua, Han Zhiguo, Hou Yuanyuan.(2017). Discussion on construction technology of waterproof subgrade in road and bridge construction. Jiangxi Building Materials.Health, no.12 (18),pp.159-159.
- [2] Zheng Lizhen, Gao Jianjun, Xu Taotao.(2017).Exploring the construction technology of waterproof roadbed in road and bridge construction. Global Market. Health, no.15(11),pp.239-240.
- [3] Su Yongxing,Zhang Benxin,Chen Jinguo.(2016). Technical points for construction of waterproof roadbed in the construction of Daoqiao. Shanxi Architecture.Health, no.42(23),pp.151-152.
- [4] Sun Shuhong, Li Wenwen,Xu Haiyang.(2016).Discussion on construction technology of

waterproof roadbed in road and bridge construction.Science and Technology Innovation. Health,no.8(7), pp.212-214.

[5] HAN Chuan, CHENG Xukang, WANG Ruihua.(2015).Discussion on construction technology of waterproof roadbed in road construction.Science and Technology Innovation and Application. Health, no.20,pp.235-236.