

# The Problems Existing in the Road and Bridge Construction and Measures

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**Abstract:** With the rapid development of economy in our country, and the construction of road construction in our country continuously develop strong, our country road construction from design to construction supervision of each link are taking some measures. Surface quality of road and bridge engineering in force has a great development, but accident of road and bridge construction is still emerge in endlessly. How to prevent and deal with the construction accident is imminent. Wooden article mainly analyzes the roads and Bridges in the construction process should pay attention to the problems, and puts forward some effect on the roads and Bridges.

**Keywords:** Road; Bridge; Construction problems; Quality management; Maintenance

## 1. Introduction

Our homeland and vast, complicated and terrain. The eastern economy is relatively developed, and the west is relatively backward, so overall level is not high. The development of road and bridge is also in progress slowly. In order to speed up the development of road and bridge in China must adopt a series of useful measures. We have to implement diversification and standardization, applicable standard drawing and design. At the same time seize the leap and gulf oversize building roads and Bridges to accumulate the rich experience. This embodies the road workers construct a high level, to ensure high quality and high standard. In recent years, our country project will intensify the management on construction of roads and Bridges. But there are many difficult letter to fundamentally solve the problem to be solved.

Road and bridge engineering construction site management is the core of management. The magnitude of the field management for the benefit of the project, progress and quality has a direct impact. Of strengthening its management field is to be within a specific time and space is plan, orderly, organized construction, so as to realize high-quality, low consumption, fast development road and bridge project. Looking forward to the development of the road road bridge, timing, work hard, for our country's road construction out of a force. In recent years due to the us to be more and more strict requirement for the quality of construction, the construction team in technical differences, roads and Bridges in construction quality because there are different levels of problems. We discussed some common problems, hope to improve the work of routine quality .

## 2. Problems in the Construction and Use of the Bridge

### 2.1. In the construction of cement powder slag stabilized layer in question

Stone ballast, cement paving and uniform mixing. The mountain in stable layer stone ballast, for construction and technical personnel often ignore the construction quality of the layer, and in the construction process is not strictly required in each construction link, especially in the pavement and cement slag powder mixing is not uniform. The specific performance: no good grasp of paving the elevation, not clearly paving, paving and uneven and not smooth Alto phenomenon.

No control of cement powder ballast stable layer of good moisture. In the construction process is not strictly in accordance with the proportion of material test, coupled with no uniform of the sprinkler. Then there will be the phenomenon of water storage, which cannot be unified spread, but also increase the difficulty of the rolling. If the rolling standard will be prone to spring type cracking. Rolling is an important construction, if not rolling good, or rolling is not uniform enough, which will cause the strength and bearing capacity of the stable layer directly affected. Due to the stone layer of the roller compaction construction personnel is not enough attention, while the construction staff did not in accordance with the relevant provisions of the rolling, which caused the stable layer is not smooth enough, the roller compacted is not close enough, and the stability is not enough.

### 2.2. Problems existing in pile foundation construction

During the pouring of concrete, the test is carried out on the concrete surface timing problems, which led to the

depth of the pre buried catheter, and then will produce pull off the leakage phenomenon. This can result in the formation of a broken column, especially in the latter part of the bored pile. If the pressure is low or no precise detection instrument, and is easy to collapse into concrete surface layer mixing mud.

In the process of pouring concrete, if the conduit buried in the concrete seriously exceed the embedment depth, plus the perfusion time is too long, it will reduce the flow of catheter inside and outside the concrete, so it increases the friction between the concrete and the wall of the tube. If it is then pulled out the catheter will lead to its rupture, resulting in broken piles.

One of the main reasons that cause the broken pile is the phenomenon of the tube. On the one hand, there is a problem in the ingredients. The ingredients are too casual, while the lack of a strong sense of responsibility. And they do not seriously in accordance with the relevant provisions of the proportion of concrete, at the same time there is a big error, thus resulting in a slump fluctuation is too large, then stir out of the mix is not uniform. If the slump is too large, there will be segregation. The coarse aggregate in the mixture will be squeezed, which will cause the pipe to be blocked. If the slump is too small, will make the concrete falling resistance increased, which will eventually lead to catheter blockage, broken pile.

### **2.3. Problems existing in the construction of precast box girder**

In the construction of the precast box girder, there are many aspects of the setting does not meet the design requirements. For example, expansion joints embedded reinforcement, anti wall, communication pipeline bracket embedded steel plate, drain holes and air vents are not up to the standard. No arrangement for a person to check the silicon pouring process, so that the resistance to pull the bolt and the top bars are prone to loose, running mode leakage or floating inside the mold and other issues. Did not set the camber in accordance with the design requirements, and did not check the base strength and size. Sprinkler maintenance of the lack of hand, the corresponding maintenance facilities are not equipped with.

## **3. Preventive Measures for the Problems Existing in the Construction of Road and Bridge**

### **3.1. Cement stone ballast stable layer construction measures**

Under the existing conditions of paving work to a large area, and to prevent the spreading and excavation work at the same time. Layered paving should be designed according to the thickness of the design, while the

thickness of the paving thickness, and the virtual shop coefficient is calculated. The spread should be evenly mixed with cement, while avoiding the emergence of flowers and the emergence of a layer. Important is in the spread is to arrange the experience of the people to carry out the water, at the same time, the water must be uniform, the two sides of the same humidity.

Before the rolling of the stable layer, the thickness and the thickness of the stable layer should be line check. To see whether it is reasonable, check whether the mixing is uniform, and the water content of the stable layer to reach the best state when the roller compacted. Roller compaction, the trajectory to be followed by the trajectory of the pressure 1/3. After the completion of the rolling, the table to ensure that the smooth, and no obvious rolling trajectory, while the stable layer in the compaction of the pressure after the degree of poverty in 98%.

### **3.2. Prevention measures for existing problems in pile foundation construction**

First, the flatness of drilling platform should be controlled in the standard range. To ensure that the platform is in a horizontal shape so that the drill can be carried out in a vertical way. Secondly, to the top of the reinforcement cage and the elevation of strict control. The stress state is the main basis of the length of the reinforcement cage, and the reinforcement cage is usually not arranged at the lower end of the pile. For the top of the reinforcement cage and elevation, on-site supervision should be carefully checked. Because there is no reliable measure and the data of the top of the steel bar cage is difficult to be guaranteed.

The number of the first batch of perfusion mixes should be consistent with the need for the first depth of the catheter and the need to fill the bottom of the filling vessel. When the transport of concrete mixture to the construction point, to check the homogeneity of concrete mixture and slump. If it is not up to the standard can be mixed again. If after two times of mixing is still not up to standard, must prohibit the use of.

When the concrete is under water, it should be kept in continuity, and there is no stopping in the middle of it. At the same time to ensure that the depth of the pipe embedded in the concrete should be controlled between 2m-6m.

### **3.3. Precast box girder construction measures**

Must carefully check the side mode, the end of the test assembly. To ensure tight joints, and the wrong platform. From the angle to the end die design of the anchor plate angle. Should be checked and checked once a week. Pull bolt holes to be consistent with the template location. Clean the floor. The putty seam will also draw wedge

block is arranged at the end of bridge expansion joint bearing plate pre buried.

For the web, the bottom plate to the positive bending moment corrugated pipe positioning for the focus of inspection check. Silicon casting to always do not shift. Steel strand in advance. The twisted steel strands are to pass through the crossing lines. Attention should be paid to the steel wire in the tube does not appear in the winding phenomenon, but also on the number of each strand.

To carry out the internal model, lateral and terminal support. Roof reinforcement and negative moment bellows lashing. Firmly support model, will be located in the bottom bar stool. Side mode to be equipped with a top gear, while the distance between the top of the pressure bar to be controlled at 1.5m. Inner mold pressing. The stability of the good side of the mold, the end of the support, set aside the position of the steel to be correct. To prevent the floor, end plate and the wing plate running mode or deformation. The level, diameter, root number and spacing of reinforcement are examined. The key is to check the position of negative bending pipe and anchor plate. The positive and negative moment, to ensure that the anchor plate is tightly connected with the template.

#### **4. Conclusion**

Now China's road and Bridge in a period of rapid development. To strengthen the quality management of road and bridge engineering and to ensure the quality of the project, it is necessary to strengthen the basic work,

construction quality control and inspection work. Road and bridge engineering and construction engineering is wide, some seasonal. Construction team conditions and quality requirements are not suited to. The engineering supervision work started late, and the lack of mature experience,

at the same time in the period of detection is not advanced, all these need us to make more people to explore, to gradually strengthen and perfect quality management work, create favorable conditions and a more effective method for the steady development of road and bridge construction.

#### **REFERENCES**

- [1] Zhen Yujun, Zhang Yanli. Main problems of domestic bridge design Chinese new technology and new products[J].Science.2001,8(1):99-109.
- [2] Yu Minglin. On the technical and quality problems in bridge construction of[J].Technology Innovation Herald, 2009 (6).[3]. Quality problems of highway bridge in the construction and use of analysis and control. 2007,7 (6):89-98.
- [3] High bridge road. The road and bridge construction should pay attention to the problem [J] China Science and technology is rich.2010,9 (6):90-99.
- [4] Li Yongde. Bridge construction technology and the need to pay attention to the issue of [J].China Science and Technology Expo.2009 ,6(28)69-73.
- [5] Yang Yunbiao. On the road and bridge construction should pay attention to the issue[J].China's high-tech enterprises 2009,3 (12):67-71.
- [6] Cai Shaolin. Analysis of the causes of concrete cracks in bridge construction and repair measures[J].Science .2009,4(8):34-48.