Quality assurance measures of bridge construction concrete technology

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Abstract: In recent years, with the development of the economy, drives Our country's transport industry, To increase the number of bridge construction projects. During the construction of a bridge project, The concrete process is a Key technology, It has an important impact on the quality of bridge engineering, other, The quality of bridge construction has a direct impact on social development in some degree, and so on, to the bridge Strict control of construction requirements. in the construction of Bridges, Concrete occupies a very large proportion, and its quality directly affects the quality of the entire bridge project, so, To enforce Quality control of concrete process in bridge engineering, The quality of the bridge works well is based on this, First, the factors influencing the quality of concrete process during bridge construction are described, and the quality control measures.

Keywords: Bridge Construction; Concrete Process; Quality Control

In recent years, in bridge construction, The proportion of concrete is very Large, the quality control of the concrete process is extremely important. It can not only effectively reduce the appearance of concrete quality problems, greatly improve bridge engineering quality amount, Thus ensuring the safety of people's lives and their property. because the concrete itself has a high intensity, resilient features, So with rebar use, The forms a Rugged concrete structure with very high seismic performance, so, concrete is widely used in multiple areas, in use, The effect of the quality of concrete process because of the has a wide range of, to effectively reduce work in concrete construction Art Quality issues, in article, puts forward some quality control measures.

1. factors affecting the quality of bridge concrete technology

During Bridge construction, The factors affecting the quality of the concrete process are multi-party face, so, analyzes and studies from the following areas.

1.1. Raw Material

before the bridge project is constructed, first to the concrete sand, Gravel, for materials such as Quality Strict control, simultaneous use of admixtures, to avoid being in the construction,, cause quality of concrete itself not up to standard, affects the quality of the concrete.

1.2. Match

in bridge project construction, cement and water cement ratio for concrete strength straight connect to, at match ratio, If the amount of work is not sufficient, on concrete The strength has serious effects, which affects the quality of the concrete process. Special high Label Concrete mix ratio, tighter Control of concrete mix and cement use In order to avoid concrete cracks and other quality problems.
1.3. Stir

when the bridge project is under construction, when the mix of materials is complete, next to Line is stirring work, mixing tools and methods different, The also has a concrete process Quality has a certain impact. .. with the technology now in progress, recommended for large projects construction, must follow standard site construction requirements, Mix with construction requirements mixer, Material warehouse etc, to ensure mixing quality of concrete.

1.4. Shallow

during bridge construction, Concrete Pouring is the mixing of concrete poured into the installed template or stencil, vibrating compacted into various structures, pouring knot Process Control for the construction process, Has a certain effect on the quality of concrete in the bridge project.

2. Concrete Process Quality assurance measures for bridge construction

2.1. Quality control of concrete raw materials

in bridge engineering, factors affecting the quality of the concrete process, Raw Material quality Has A direct effect on the overall quality of concrete, so, on construction, To control the quality of raw materials first strictly controls, based on this, is described in the following areas: ① First strict selection of raw material manufacturers, and Check the quality of raw materials, Ensure that concrete in the construction of the required cement, etc. Related Materials meet quality standards, Other, on material selection, Strict Select the appropriate raw material by Project, also, due to bridge construction required Concrete has higher bending strength, So you should choose the flexural strength of the high cement, and ensure concrete quality. ② Carefully define the weight set material level and gradation. in bridge construction, to be strict according to different requirements Row Control, Select appropriate aggregates, in bridge construction, Because of the bridge level number of different and salt-resistant requirements, will bring a certain shadow to aggregate level ring, so, in the case of freezing the required concrete aggregate selection, To ensure that Aggregate water absorption rate cannot be greater than 1, and the crushed value cannot be greater than 10%, level Two aggregate water absorption cannot be greater than 2%, and crushed value cannot be greater than 15% and on the road surface coarse aggregate make a selection, Select Strictly in accordance with relevant national regulations, thereby Effectively avoids the effect of the quality of the raw material on the concrete process quality effects. ③ in order to effectively extend the concrete setting time, Decrease in the cold seams appear during pouring, You need to do a real time calculation, Add to concrete with A certain proportion of admixtures to delay the final setting time of the concrete, reduce bad construction problem appears, also, also pay special attention to, Only by pouring concrete is hard to ensure bridge load-bearing and compressive properties, The strength of the structure is also not compliant. to say, in bridge concrete construction process, steel fiber is also an indispensable one /, It has high strength and toughness requirements for material materials., mixed with mixed condensate, can effectively withstand various impacts, The degree of solidification can also be valid elevation.

2.2. Quality control of concrete mix ratio

when the scientific and reasonable mix of concrete is performed, can effectively guarantee the bridge Beam Engineering Concrete strength, to Ensure quality of bridge works, in the match comparison procedure, to have strict control over bridge construction requirements, to ensure external type of additive and how much It needs, other, The also works on the bridge during the construction of the ratio to check, to meet the requirements of concrete technology, due to bridge in actual Construction Process, Many concrete bridges will have a cracking appearance, Frozen became road melting, And the bridge deck has been damaged, cause this behavior The most important reason for is that the design performance of the concrete is not up to standard, so, In the case of foreign additive selection, set strictly according to the actual situation of the bridge set, other, for determining the ratio of water to water it is not possible., Also cannot reduce or increase The Add the amount of cement used in the materials, in bridge concrete mix design time, Water The proportions of the gray ratio are controlled under 50% under.
2.3. Quality control of concrete mixing

When mixing concrete for bridge construction, its mixing tool with square Law is different, can have an impact on the process quality of concrete, so, on When mixing concrete, strictly control the temperature required for mixing, especially in winter, To Preheat the stirring admixture first, and then stir the Stir in the machine; in stirring process, If the stirring is not tight enough, will There are many blowhole occurrences, cracking when serious, so, in coagulation Soil Mixing process, Strict control to make concrete mixing time, to make concrete stir mix conditions to get a full picture; plus, in concrete mixing process, Make sure to mix.

2.4. Quality Management of concrete pouring

Pouring is a mix of concrete poured into the installed template or mold inside, compacting into various structures, Process Control for casting the structure, to The concrete quality of bridge works has a certain effect. so, When pouring, on concrete drop speed control, and to the concrete in the template or mold height into the line control, when pouring, Bridge Concrete has its own characteristics, such as The one-way length control for the, pouring when the deck is poured, while bridge is pouringHou, in capping stage, The is to be poured through the upper and lower layers, with in progress During the ramming, The time to vibrate is moderate, do not leak, To ensure bridge blending Quality of the coagulation process.

2.5. Maintenance of concrete

through Process quality control measures, concrete should be properly hydrated, to with better hardening. While the concrete strength is mostly in the maintenance process, so, attach importance to concrete maintenance. current, for concrete curing methods there are various, in construction process depending on object, The conservation-side of the The method is also different, as in winter, bridge piers for shelter and steam protection Foster, They also have different temperature controls, so, pay attention to. When Use nature conservation method, This method after the concrete has been finalized, then water protect strong cotton bags, covers components such as sacks or grass bags, and always sprinkle the Water work, keep widget in wet state. Whether cement is mixed with plasticizer has a direct effect on this method of curing time.

3. closing

To summarize, During construction of bridge concrete, Concrete in bridge constructs a very large percentage, so, Strict control of concrete process quality,, can significantly reduce concrete quality problems, to effectively elevate the bridge beam Engineering Overall quality,, and the security of people's lives and their property. in the article Middle, Discussion on the influence factors of bridge concrete process quality, we easy to find, Factors affecting the quality of the concrete process are manifold, as raw material quality, Match, Mixing and pouring of concrete, by using the description and Analysis, provide appropriate quality control measures, in construction, to strictly control each link, and then effectively guarantee the bridge engineering body quality, Thus effectively improving the quality of concrete process in bridge construction in China, and promote bridge engineering to a better direction.

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