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Application of Concrete Placement Construction Technology in Industrial and Civil Buildings

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Abstract:

Whether it is industrial buildings or civil buildings, concrete is widely used, it can also be said that concrete is essential in the construction industry. In industrial buildings and civil buildings, concrete is generally used to complete construction, and the quality of construction is closely related to the completion quality of the entire project, and the safe use of the building is closely related. In the construction, enterprises should actively adopt advanced concrete pouring construction technology to effectively improve the quality of concrete pouring and ensure the quality of construction projects.

Keywords:

Industrial and civil buildings; Concrete placement; Concrete construction technology

1 Current status of construction

With the continuous development of the economy, people's living standards have also been greatly improved, China's construction industry can also develop in the long run. At the same time, China's economic development needs to have a support point. As a large country with a large population, the population distribution is very intensive. It is also because of the large population that China's construction industry can have such a large market and vast space for development. The improvement of China's market level and the rapid development of urbanization further promote the rapid development of China's construction industry. Since the founding of New China, both industrial and civil buildings have developed well in the country's construction industry. In the day after day of construction, the country's industrial and civil building construction technology has been greatly improved. However, there are still a series of problems to be solved in the process of construction. In the construction process of industrial and civil buildings, the most important problem is in the concrete pouring operation. The concrete pouring operation is a very important part of the construction, concrete pouring occupies a crucial position in the construction industry.

2 Application of concrete placement construction technology in industrial and civil buildings

2.1 Reasonable use of steel film treatment technology

Scientific and reasonable selection of formwork system is a necessary condition to ensure the quality of concrete pouring during construction. The real condition of the construction site is the main basis for selecting the target, so that the concrete pouring can avoid being disturbed by the condition of the site as much as possible during construction. There are many reasons to interfere with the target system, including the characteristics of the project and the intention of the design. In order to improve the quality of concrete placement during actual construction, it is necessary to accurately ensure that the formwork system used is simple in structure and convenient in disassembly. At the same time, this system also needs to include relevant technical means to prepare for the protection of the processing accuracy of the template. After selecting the template system, it is also necessary to scientifically and reasonably select the materials required for the template panel. Nowadays, the materials required for formwork panels are various [1]. Therefore, in the process of material selection, the construction personnel must be comprehensively considered from the angles of hardness, stiffness and strength. To ensure the use of this template in construction can improve the quality of the building, meet the requirements of building construction, and have a huge role in improving the quality of the entire

project.

2.2 Pouring technology of shear wall and pile foundation

In the work of shear wall pouring, we should pay attention to the pouring quality of plate structure, frame, beam and column. We should carry out the pouring construction accurately to ensure that the quality meets the relevant standards. In the pouring construction of pile foundation structure, we should actively adopt advanced pouring construction technology, take silo leveling, vibration and independent construction as the main principles, and arrange professional personnel to carry out work. First of all, before using the formwork, release agent should be reasonably applied in it to ensure the smoothness and cleanliness of the surface, and the edge line of the formwork should be checked repeatedly to ensure that it meets the specific construction technical requirements; Secondly, for the key parts, we should strictly control the pouring strength and speed, refine the process technology, and prepare a more perfect process technology scheme. Under the premise of scientific construction, the courage to innovate technology and improve the technical level of pouring construction; Finally, it is necessary to reasonably control the temperature and humidity of the site. According to the standard requirements of construction, the reasonable use of cooling water for treatment, fundamentally prevent the problem of cracks due to excessive temperature difference between the inside and outside.

2.3 Technical measures of mass concrete placement

The volume of mass concrete is large, the index of cross section is also high, and the use of cement materials is also a lot. The construction is easy to release a lot of hydration heat, temperature cracks and shrinkage cracks, so it is necessary to use advanced pouring technology. On the one hand, in the process of concrete pouring, water cooling pipe is used to reduce the temperature of the internal structure, to prevent the heat of hydration caused by excessive temperature difference between the inside and the outside of the concrete cracks; On the other hand, the amount of cement materials used in construction should be reduced, the quality of cement should be strictly controlled, and cracks or other quality problems should be prevented under the premise of ensuring that the quality of pouring construction meets the standards.

2.4 Concrete transport, configuration and vibration technology

In the process of transportation, the transportation equipment with faster speed and good maintenance effect should be used. If the concrete material has segregation or stratification, it is necessary to carry out secondary mixing work. During the actual transportation, it is also necessary to detect and analyze the slump to ensure that the value of slump meets the design requirements and construction standards. The deviation value should be strictly managed and controlled, samples should be selected in the pouring work, and then tested. Only when the test value meets the requirements can the pouring construction work be carried out smoothly. In the actual work, it is also necessary to clarify the position and size of the structure and components, and accurately manage the density. In order to ensure the uniformity and compactness of concrete pouring, advanced vibration construction technology should be actively adopted in order to ensure the durability and rationality of pouring construction. Follow the basic technical principles of fast insertion and slow removal, ensure the uniformity of insertion points, move gradually, process in order, and avoid missing phenomena to ensure the rationality of vibration. In the process of using vibration equipment, it can not be set in the steel bar structure, nor can the phenomenon of steel bar collision occur, strictly control the vibration frequency and strength, if the frequency and strength are too high, the concrete will appear segregation phenomenon, resulting in its strength does not meet the relevant requirements [2]. In order to avoid the problem of honeycomb pitting or cracking, in the pouring work of the wall and column, the rational treatment of the vertical bearing structure should be emphasized, and the cement mortar should be pre-set in the bottom area of the pouring structure, and the positive role of the advanced vibration technology should be fully played under the condition of reasonable construction treatment.

2.5 Reasonable use of construction joint and post-pouring belt technology

First of all, it is necessary to ensure that the width of the construction joint meets the requirements, reserve enough width, there can be no debris, and it should meet the cleaning requirements; Secondly, in the pouring of the post-pouring zone area, in order to prevent the problem of non-uniform cracks or temperature cracks, temporary construction joints should be set up in the building wall structure, floor structure and beam structure according to the specific construction standards, and temporarily divided into many parts. After the internal shrinkage, the temporary construction joint is poured and vibrated, which can form a higher quality overall structure; The time period with low temperature should be selected for the construction of the post-casting

belt. Under normal circumstances, the width of the indoor after-pouring belt is 30mm, and the width of the outdoor belt is 90mm. Construction joint is a common phenomenon in concrete placement. Because cracks need to be set between various structures during construction, they are actually not real cracks, but the pouring time of some concrete in the pouring process exceeds the initial setting time of concrete before, and joint surfaces appear in successively poured areas with construction joints [3]. Affected by equipment factors, personnel factors and material factors, it is difficult to carry out large-scale pouring at one time, and it is necessary to preset construction joints at this stage to ensure the quality of the overall structure.

2.6 Treatment technology for pouring cracks

Cracks in concrete placement will affect the quality of the whole structure of the building. Therefore, if cracks are found during the pouring process, they must be dealt with reasonably [4]. First of all, if the degree of crack is very small, then you should do a good job of cleaning the surface to ensure its dryness and cleanliness, and use epoxy slurry to fill the crack; Secondly, if the degree of crack is very high, it is necessary to chisel first, then repair with cement slurry, and then repair with epoxy adhesive material; Finally, if there is a surface cracking problem due to climate factors, it should be closed with epoxy glue and pouring materials according to the actual situation, and use anti-corrosion type of raw materials for construction. Follow the construction principle according to local conditions, effectively improve the overall project quality.

Conclusion

In the process of construction, enterprises should pay attention to the application of concrete pouring technology and sum up relevant experience. According to the characteristics and actual situation of concrete pouring, the pouring technology is scientifically applied, and the active role of layered and segmented pouring technology and vibration construction technology is brought into play. In the case of ensuring the pouring quality of the overall structure, if there is a crack problem, it must be dealt with reasonably to achieve the expected construction technology application objectives.

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