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Research on Anti Permeability Construction Technology in Housing Construction

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Abstract: Housing construction is closely related to people's daily lives. With the continuous development of our society, people's living standards are constantly improving, and the requirements for housing construction are also increasing. Housing penetration is a problem that arises in the housing construction market and needs to be taken seriously. Anti permeability construction engineering is a common quality problem during the construction process. The occurrence of this problem belongs to the technical aspect, and it can also occur in people's daily lives. When building infiltration occurs, it will seriously affect the quality of the building. Therefore, it is necessary to carry out anti permeability construction during the construction process of the building. This article will provide a brief analysis and discussion on the anti permeability construction technology in housing construction.

Keywords: Housing construction; Anti permeability; Construction technology

1. Introduction

The anti permeability construction of housing construction is an important part of housing construction engineering. The penetration of housing not only affects the building, but also reduces the quality of the building. In severe cases, it can even cause safety accidents, posing a serious threat to people's lives and property safety. Therefore, anti permeability construction technology is very important in the process of housing construction.

2. The Importance of Anti Permeability Construction in Building Construction

Anti permeability construction in housing construction is an important measure to ensure the safety of people's lives and property. During the use of housing construction, permeability problems may occur due to various factors such as temperature and pressure, which is also the biggest problem after construction is completed. In the construction of houses, especially residential buildings, if leakage occurs, it can directly affect the daily life of residents, and in severe cases, the quality of the houses can also be affected. At the same time, the infiltration problem in housing construction will occur at various stages and have different manifestations. Strengthening the anti permeability construction in housing construction can effectively improve the construction quality of housing construction.

3.Types of Building Penetration

(1). Penetration of External Walls

External wall penetration is a common and serious problem in building infiltration. The occurrence of external wall penetration is mainly caused by inadequate anti penetration technology treatment. For example, if the external wall is not in equilibrium, it will affect the fixation of the external wall and gradually spread to the surface of the external wall. The cracks on the exterior wall are basically generated from the interior of the wall, and are manifested on the surface of the exterior wall. If there is rain weather, the permeability problem of the exterior wall will be very serious, and even the degree of penetration will gradually deepen.[1]

(2). Penetration of the Roof

The problem of roof penetration is relatively rare in building construction and has significant limitations, mainly concentrated near the eaves. After these parts are affected by the environment, coupled with the inadequate construction of anti permeability technology, they pose a potential risk of infiltration for building construction. In addition, the roof structure of a house is a basic part of the building. After the construction materials are affected by temperature changes, they will experience thermal expansion and contraction. When the external temperature decreases, the construction materials will shrink, forming a certain degree of gap. The inability to ensure the effectiveness of roof waterproofing leads to the problem of roof permeability.[2]

(3). Penetration of the Bathroom

The penetration of the bathroom is one of the most common phenomena in house penetration, mainly because various pipes are involved in the design of the bathroom in building construction. These pipes must come into contact with the wall, and even shuttle through the wall. At this time, gaps will appear between the wall and the pipes. If the treatment of the gaps is not reasonable during building construction, it will lead to seepage problems in the building. Therefore, during the construction of houses, it is necessary to do a good job in embedding the pipes. If the pipes are damaged, it can also lead to seepage problems in the house, and even lead to corrosion of the pipes, thereby affecting the drainage of the pipes. At this time, the impact on pipeline drainage will lead to an increase in the infiltration areas of the bathroom.

4.Reasons for Building Penetration

(1). Technical Issues in Housing Construction

If there are seepage problems in a building, the main reason is due to problems in construction technology. For example, during the construction process, if reserved holes are not properly treated for the exterior wall construction, it can lead to water seepage on the roof of the building during use. Therefore, when constructing the exterior wall, it is necessary to leave reserved holes in the scaffolding position and seal these reserved holes to prevent cracks in the reserved holes, which can lead to wall problems and effectively avoid the occurrence of seepage problems. In addition, if the construction of wall joints is not properly sealed, it can also lead to seepage. In addition, during construction, it is necessary to ensure that the bricks are sufficiently wet to prevent them from absorbing moisture from the mortar, which can lead to cracks in the wall. In addition, during the construction of houses, if the construction of some structures is not carried out according to the standards of construction technology, the quality of construction cannot be guaranteed, and penetration problems are also prone to occur. For example, the water filling and leak detection of houses can lead to penetration problems.[3]

(2). Material Issues in Housing Construction

In addition to the impact caused by construction technology, the impact of construction materials is also significant when there is a seepage problem in building construction. In recent years, in the process of building construction, new materials such as hollow bricks are often used for wall laying. These materials can have good filling effects, but their load-

bearing performance is poor, and they are extremely susceptible to damage during transportation. If damaged materials are used during construction, they can lead to gaps in heavily polluted buildings, leading to seepage problems after completion. In addition, the materials used in building construction contain a certain amount of moisture, which can evaporate during use, leading to shrinkage of the materials and cracking of the walls, further affecting the leakage problem of the building. Finally, the construction materials of houses will be affected to a certain extent by the environment, such as significant changes in the temperature of the environment, which can lead to changes in the internal performance of the materials, leading to the occurrence of cracks.

(3). Design Issues in Housing Construction

During the design phase of building walls, it is necessary to strictly follow relevant tax standards and fully consider factors such as environmental and climatic conditions within the building area. However, in the design process, some building designers did not strictly follow the standards for design, and also ignored environmental factors on the issue of external wall permeability. Some designers even copied other building schemes without distinguishing them, resulting in problems in the anti permeability work of the building's external walls.

5. Construction Technology for Anti-permeability of Building Construction

(1). Strengthen control over the quality of construction materials

In the process of building anti permeability construction, attention should be paid to the control of the quality of construction materials. Many construction units do not pay enough attention to the quality of construction materials, which leads to some substandard or substandard materials entering the factory construction site, which seriously affects the quality of construction. The materials used in the construction of building anti permeability have a significant impact on the permeability of the house. Therefore, strict quality testing should be carried out on the materials used in the construction process of building anti permeability. Once unqualified materials are found, they should be replaced and never used. In the process of building anti permeability construction, special attention should be paid to the materials of the external walls. External wall permeability is the main problem in building permeability, and construction personnel should take necessary measures to control the external wall materials by using waterproof agents or anti cracking agents to prevent the occurrence of external wall cracks. In the process of building construction, if hollow bricks are used, their quality must be strictly inspected before use. Hollow brick materials that are damaged during transportation must be disposed of, and unqualified materials must not be used so as to improve the effectiveness of building anti permeability construction.[4]

(2). Improve the comprehensive quality of construction personnel

To improve the anti permeability construction technology in housing construction, in addition to controlling the quality of construction materials, it is also necessary to improve the comprehensive quality of construction personnel. The comprehensive quality of construction personnel will directly affect the level of construction technology, which will directly affect quality issues such as building infiltration. Therefore, it is necessary to improve the comprehensive quality of construction personnel. Before carrying out housing construction, the construction unit needs to provide professional technical training to the construction personnel and promote relevant professional knowledge to enhance their understanding of the importance of construction and improve their technical level. Only in this way can the construction personnel pay sufficient attention to each link during the construction process and carry out the construction with a positive attitude. In addition, the construction unit also needs to take

necessary management measures for the construction personnel, so that they can clarify their responsibilities. Only in this way can the enthusiasm of employees be improved, and if problems arise during construction, they can also be held accountable. At the same time, it is necessary to arrange professional personnel to conduct regular or irregular inspections of the construction quality. Once any quality problems are found during construction, they should be promptly dealt with, reworked or modified to prevent further expansion of the problem.[5]

(3). Construction technology for external wall penetration prevention

The anti permeability construction of the exterior wall of a building is the most important part of the entire anti permeability construction. The penetration of the exterior wall of a building is mainly due to structural reasons or improper operation, resulting in insufficient filling of mortar and infiltration of rainwater through gaps. Therefore, in the process of building construction, attention should be paid to the treatment of gaps and the connection of external walls in the construction of external wall impermeability, and treatment should be carried out in accordance with the requirements of the standard. During the construction process of the exterior wall, the gaps should be filled with mortar, which can prevent the brick masonry from absorbing moisture in the mortar, thereby affecting the performance of the mortar. In addition, bricks are the main material composition of the exterior wall, and the quality of the bricks should be ensured as much as possible to meet the anti permeability needs of the exterior wall. When mixing exterior wall construction materials, it is necessary to pay attention to a sand content of less than 5%, and strictly control the use of impermeable materials in conjunction with appropriate control of the amount of waterproof agent to enhance the impermeability effect of the exterior wall. Secondly, it is necessary to use cement to improve the external strength and ensure the balance of the wall's stress, and resolutely prevent the use of materials with obvious shrinkage and inferior quality. After the construction is completed, the quality of cement should be tested through relevant experiments to avoid affecting the impermeability of the external wall due to cement.[6] See Figure 1.

Figure 1 Construction of Roof Reserved Holes

(4). Roof penetration prevention construction technology

The anti permeability of the roof mainly depends on the layer, and the panel layer is crucial for the anti permeability design of the house. It not only plays a role in anti permeability, but also plays a role in insulation and insulation. Therefore, when constructing the roof of the building, attention should be paid to the construction of the panel layer. When selecting impermeable materials, it is necessary to consider the impact of the surrounding environment of the building, including temperature and humidity, which not only affects the impermeable materials but also affects the construction quality of the building. Secondly, attention should also be paid to the application of impermeable materials. During the application process, repeated experiments should be carried out to ensure the uniformity of the impermeable material. After the application is completed, appropriate water injection testing should be carried out to ensure the construction quality of impermeable materials. If there are problems during use, timely repair or rework should be carried out. During the repair process, attention should be paid to controlling the temperature. When the temperature drops, it can lead to cracks in the impermeable layer. In addition, during the construction

process, it is necessary to ensure the strength of the steel bars and the strength of the concrete. During the injection process of the concrete, it should be subjected to shaking treatment to ensure that the sealing of the concrete meets the requirements. After completing the roof construction of the building, it is necessary to maintain the concrete for at least two weeks to ensure its firmness.

(5). Construction technology for infiltration prevention in kitchen and bathroom

In housing construction, the kitchen and bathroom are also areas where penetration problems often occur. Therefore, in the process of building construction, it is necessary to strengthen the construction technology of construction personnel to ensure the construction quality of the kitchen and bathroom in the house. These parts are closely related to the residents' lives. Whether it is the design of parts or the construction process, it is necessary to do a good job in preventing penetration. Firstly, reserved holes should be made in the kitchen and bathroom, and the size of the reserved holes should be controlled, usually around 20mm. Secondly, effective treatment should be taken for areas where water accumulates in the kitchen and bathroom of the house. The parts connecting the pipes and walls must be repeatedly treated with polyvinyl chloride paint to ensure that the gaps between the pipes and the walls are controlled, thereby reducing the infiltration of these parts. During the construction process, it is necessary to control the quality of construction tools. If quality problems occur with the construction tools used, it can lead to seepage problems in the building. This is also an important aspect that needs to be taken seriously during the construction process.[7]

(6). Construction technology for basement anti permeability

The anti permeability construction of the basement is the most easily overlooked part, and the basement is usually used to store debris in the building, so it is even more necessary to strengthen the anti permeability construction. Firstly, when carrying out basement waterproofing construction, it is necessary to adopt two or more waterproof forms, and the structural design of each part should be reasonable. During construction, quality monitoring should be strengthened to ensure effective quality management throughout the entire process. At the same time, it is also necessary to strengthen the education work of construction personnel, improve their technical level and quality awareness, so that construction personnel can clearly understand the complexity of basement waterproofing construction, during the construction process, careful construction can be carried out to ensure that the basement achieves an impermeable effect. Secondly, it is necessary to arrange the dewatering well reasonably and adjust the machine configuration, optimize the node structure design, and do a good job in maintenance.

(7). Carry out technical disclosure work well

In the process of building construction, it is necessary to carry out disclosure work for different stages of construction, which has a significant impact on the quality of anti permeability construction of housing projects. Each department should provide timely technical disclosure of the construction status. During the construction process, it is necessary to improve the requirements for the use of new technologies and material procurement in order to obtain security. The project leader should conduct technical briefing to the technical leaders of each sub department, and the sub department should conduct technical briefing to the team leader and construction personnel, and obtain detailed technical communication to ensure that everyone has a sufficient understanding of the project during the construction process.

6.Conclusion

In summary, with the continuous improvement of people's living standards in China, higher requirements have been put forward for the quality of buildings. Infiltration problems are the most common and

serious problem that has been troubling residents in housing construction. Therefore, during housing construction, construction personnel should take corresponding measures to improve the construction technology of building impermeability, effectively prevent the occurrence of infiltration problems, and only in this way can the problem of building permeability be reduced, so as to improve the quality of life of our residents. There are various forms of seepage problems in building construction. In order to increase the anti seepage construction technology in building construction, different requirements should be made for different locations during construction, strictly following relevant regulations and standards. At the same time, the corresponding construction units should carry out strict anti seepage quality control to ensure the anti seepage ability of the building, provide convenience for residents' lives, and reduce hidden dangers.

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