



## Analysis on the importance of building material testing in building engineering

BY

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### Abstract

*With the continuous development of economy, our country's infrastructure construction is also gradually accelerated, the national emphasis on infrastructure construction and for the quality of infrastructure construction more and more value. Therefore, it is necessary to test building materials in construction engineering, so as to strengthen the quality supervision of construction engineering, strengthen our country's infrastructure construction as the quantity increases and the quality improves simultaneously. In addition, the application of building materials is directly related to the quality and service life of the project, so construction enterprises and construction units need to do a good job of testing building materials to avoid construction delays and engineering problems caused by building material problems. This paper mainly analyzes the importance of building materials testing in construction engineering, and lists several key points of testing work from the perspective of building materials testing, hoping to provide you with reference.*

**Keywords:** building materials; Construction works; Material testing

### Introduction

Construction industry as a pillar industry of China and China's economic construction synchronous development, construction industry and economic development is complementary to each other, and at present with the gradual advent of Internet technology and related scientific and technological achievements, China's construction engineering and construction industry is also constantly innovation and progress. At present, with the advent of 3D printing technology and a series of new technologies, China's building materials are diverse, and in order to better meet the needs of construction in the new era, the development of building materials has made many improvements to meet the needs of infrastructure construction. Due to the relatively perfect infrastructure in China's current plain areas and economically developed eastern areas, the areas that need infrastructure construction are plateau areas, mountain areas, and Qinghai-Tibet region. In these places, the climate is changeable, the temperature difference between day and night is large, and the terrain and geological conditions are complex, which has more stringent requirements for the wear resistance, heat resistance, and cold resistance of the construction side and building materials. Based on this condition, the production company of building materials should strictly control the quality, and as a building construction unit and construction enterprise, it is necessary to do a good job in the detection of

building materials, and statistical analysis of the problems in building materials, early solution, do not delay the construction period, cause greater economic losses, and generally improve the efficiency of building materials detection. Ensure the quality of building materials to ensure the quality of construction projects, so as to promote the construction of infrastructure, promote the improvement of construction projects, and the development of the construction industry.

### 1. The importance of building material testing in construction projects

#### 1.1 Testing of building materials is conducive to ensuring the quality of construction projects

The quality of building materials determines the quality of building projects. Therefore, the construction material testing work is conducive to ensuring the quality of construction projects. In the testing of building materials, data such as density, heat resistance, cold resistance, wear resistance, actual load-bearing force, and toughness of building materials are indispensable. For example, in the construction of commercial housing, only after the strength of the steel bar and cement meet the relevant standards can the construction be carried out, and the design drawings can be maximized, so as to ensure the quality of the construction project plan and successfully pass the final completion quality inspection. After all, the qualification of building materials is the basis of

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construction engineering quality, only by promoting the improvement of building materials testing links and the integrity of the mechanism can we truly ensure that the building quality is up to standard from the source, in order to protect the safety of people's lives and property, promote the development of building materials enterprises and construction enterprises and the construction industry to form a good cycle and promote the leap of China's construction industry. Chinese quality and Chinese speed in material manufacturing and building construction.

### **1.2 Testing of building materials is conducive to ensuring the construction period and reducing economic losses**

The smooth construction of building materials testing is conducive to ensuring the construction period and reducing economic losses. This is because the inspection and supply of building materials is the first step in the construction project. Only by improving the work efficiency of building material testing can we speed up the construction of the project and ensure that it is completed within the construction period, which is conducive to reducing the loss of funds and waste of time caused by delayed construction period. In addition, the quality of the building materials determines the quality of the building after completion. Some construction companies, in order to better seek benefits, reduce costs at the expense of purchasing substandard building materials and do not pay attention to the testing of building materials, which will lead to the quality of building materials does not meet the construction standards. This so-called cost reduction practice, in fact, will increase the cost, the construction materials are not qualified, the construction project in the completion of the acceptance of the probability is not good, and with the improvement of people's living standards, users will find more and more problems during the residence. These problems require the construction company and the construction enterprise to take responsibility, the investment to solve the quality problem, then the construction of the construction materials to save more money, and the construction company's reputation in the industry will become bad, can be said to be harmful to nothing. Therefore, in order to reduce economic losses and try to complete the construction project according to the construction period, we must do a good job in the quality inspection of building materials, and strive to be qualified, and can not be reduced with the standard. It is best to ensure that the quality inspection of building materials is fast and good, improve the efficiency of engineering construction, promote the development of the construction industry, reduce economic losses, and enhance economic benefits.

### **1.3 Building material testing is conducive to promoting infrastructure construction and improving the development of the construction industry**

The orderly conduct of building materials testing has continued to promote infrastructure construction. Along with the speed of economic development in our country, the demand for construction also gradually increases, the

population density of the economically developed areas is large, and more integrated buildings are needed to live, so the demand for residential areas is growing. For economically underdeveloped areas, China's current infrastructure construction is not perfect, to promote infrastructure construction must be carried out building construction, therefore, China's construction industry demand for building materials testing work is also increasing, to promote the integrity and efficiency of building materials testing work has been urgent, which requires the joint efforts of the entire construction industry. At the same time, the improvement of building materials testing can not only provide a certain convenience for China's infrastructure construction but also for the improvement and development of the construction link in the construction industry. By strengthening the inspection of building materials, we will continue to improve the inspection work before construction enterprises start, promote the construction efficiency in the construction process of construction enterprises, and promote the integrity of the construction industry process, thus promoting the development of enterprises in the construction industry, and ultimately, promote the development of the entire construction industry.

### **1.4 Testing of building materials is conducive to improving the safety of the project**

The strict requirements of building materials inspection work are conducive to improving the safety of the project. Building material inspection is the first step for engineering quality inspection. Only by truly implementing the construction material testing work can we truly ensure the quality of the project and improve the safety of the project. Building materials testing has strict quality standards and the provisions of national laws and regulations. Construction enterprises need to fully refer to the parameters of the design drawings of the target built buildings and the parameters required by national laws and regulations when carrying out building materials testing, and carefully and strictly comply with the requirements for testing, and can not be taken lightly or lowered the standards without permission, because a little bit of standard reduction. It is to disregard the safety of people's lives and property. Only by strictly guarding the first line of defense of building materials testing can we promote the improvement of building safety in our country, and promote healthy competition among building materials enterprises, use less cost to produce better quality and more compliant building materials, form a good closed loop of science and technology, and use science and technology to promote the improvement of building materials quality and the renewal and iteration of building materials. Then promote the reform of construction industry standards, promote the development of construction enterprises in China. Therefore, the construction material inspection work is conducive to improving the safety of the project. China's construction industry and construction enterprises should be fully aware of the importance of material testing for building construction, promote the renewal of the industry system, and make their own contributions to the progress and development of China's construction industry.

## 2. Methods for testing building materials

### 2.1 Improve the working methods of building materials testing, and carry out inspections according to law and regulations

The testing of building materials needs to be carried out in accordance with the law and regulations. The testing of building materials has corresponding laws and regulations and procedures, so it should be carried out in accordance with the standard methods of the testing of building materials, and improve the working methods of the testing of building materials and the testing process of building materials according to the actual situation and needs, and conduct complete testing or sampling testing according to the law and regulations. In particular, the selection of sampling testing methods requires attention to a variety of variables, including the quantity of sampling, the location of sampling, and the planning of sampling schemes, etc. Although sampling testing methods are relatively common, different testing methods should be selected for different building materials to actively, practically, and reasonably promote the testing of building materials. Promote the normal and orderly operation of building materials testing. Finally, the construction project will be completed on schedule and the construction industry will develop well.

### 2.2 Do a good job in relevant scientific management to reduce corruption

To do a good job in the detection of building materials, it is also necessary to do a good job in the scientific management of building materials to reduce the occurrence of corruption. At present, the reason why the construction materials of many construction projects are backward is due to the serious phenomenon of corruption. Some construction projects and construction materials buyers collude with each other, in order to obtain higher benefits, at the expense of buying inferior materials that do not meet the quality standards of construction projects, and once this inferior building materials enter the construction project, it will have irreversible consequences for the construction. The use of inferior building materials directly affects the quality of the building, the completion and acceptance of the building can not be smoothly carried out and the later repair, but also need to invest a lot of money and time, affecting the completion of the project and the delivery of work money more than worth the loss.

In addition, it is also necessary to do a good job in the management of relevant building materials. Some building materials are relatively precious and their properties are relatively easy to change due to the external temperature, humidity, UV intensity, etc., so it requires special building materials custodians to conduct scientific storage, and before carrying out building materials testing, It is necessary to have a comprehensive understanding of the characteristics of building materials, and try not to change the properties of building materials because of an external factor in the testing process, thus affecting the testing results of building materials. In addition, in order to save costs, enterprises can send

relevant professional and technical personnel to screen and compare the materials on the market, so as to select the building materials that meet the standards of building materials and meet the needs of the project for purchasing, and select some suppliers with a long opening time, a relatively large reputation, and a good comprehensive product reputation for supply. After the end of the purchase, it is necessary to do a good job in the transportation and storage of materials and avoid the transportation loss and storage loss of materials during the construction process to improve the utilization efficiency of materials, so as to achieve the purpose of reducing the component return funds. At the same time, material managers also need to do a good job of classifying materials to avoid the serious consequences such as chemical reaction between materials and consumption or even explosion due to the large accumulation of related building materials. Only for building materials, the establishment of strict scientific management and scientific testing system can really promote the operation and development of building materials testing work.

### 2.3 Improve the quality of inspection personnel and effectively implement the inspection of building materials

In the process of building material testing, the test results are not only related to the building material itself but also related to the professional quality of the testing personnel. If the construction material inspection work can be detected by just one person, then the construction material inspection will have no professionalism and authority at all. Therefore, in order to ensure the orderly conduct of material testing tools and the effectiveness of material testing results, professional technicians need to use professional testing instruments and professional testing methods to test. However, with the continuous update and iteration of building materials, building material testing professionals should also update their own knowledge system in time, learn the latest testing methods and standards, and improve their professional quality. Professional building material inspectors carry out scientific, reasonable, and effective testing work, and can also learn some Internet technologies to make the test results into a website or a page, which can more clearly point out where the defects of building materials are caused and is conducive to complying with the principles of fairness, justice, and openness of building material testing.

### 2.4 Dynamic monitoring management mechanism, strengthen the inspection and supervision of building materials

In the professional construction materials testing work, it is necessary to build a dynamic monitoring and management mechanism to strengthen the supervision of construction materials testing, so as to avoid irreparable consequences. In the building construction process, the purchase and screening of building materials is a very important part. Therefore, in the testing of building materials, effective supervision is also needed to avoid corruption, ensure the principle of fairness, justice, and openness, and carry out dynamic testing according to construction projects, which also needs to improve the

dynamic supervision system of building materials testing. First of all, before the purchase and testing of building materials, it is necessary to have a comprehensive understanding of the project, understand what kind of building materials are needed in all aspects of the project, and how much building materials are needed, so as to timely select and inspect and purchase building materials. Secondly, it is necessary to strengthen the management of orders and building materials, improve the reasonable docking of material manufacturers and material demand sides, ensure that there is no or as little loss of building materials in the transportation process, and reduce the cost of building materials. Finally, in the work of material testing, it is necessary to carry out professional testing by professionals, and avoid the influence of all external factors, only for the material and performance of the building material itself to carry out a comprehensive test and issue a professional report, analyze the building material itself, and find out the specific reasons for the problem of the building material.

In the three-step testing of building materials, it is necessary to establish a reasonable supervision system, strengthen the testing of building materials, and through reasonable supervision and supervision, avoid corruption in the testing process, avoid inferior building materials from entering the construction site, and affecting the construction, so as to ensure the safety and quality of the building. It is conducive to improving economic benefits and promoting the normal service life of buildings, so as to better protect people's lives and property safety. In addition, the supervision of building materials testing is also conducive to the improvement of the link of building materials testing, promoting the progress of the building materials testing industry, thus promoting the progress and development of the entire construction industry. After all, the specification of a process is conducive to promoting the progress and development of an industry. As long as we adhere to the importance of building inspection work in construction engineering and constantly improve it,

we can effectively promote the overall progress of the construction industry and achieve a new leap forward.

## Peroration

All in all, in the construction of construction projects, building material testing occupies a very important position, it is a quality cornerstone of the project. Therefore, it is very important and urgent to do a good job of building material testing in construction projects. However, there are still many problems in the testing of building materials, which requires the construction industry personnel to overcome difficulties, the joint efforts of the construction side and relevant professional and technical personnel, and strengthen the awareness of construction enterprises on the importance of building materials testing, but also improve the integrity of the building materials testing industry itself. Testing of building materials in accordance with laws and regulations and quality standards. We mainly put forward the importance of building material testing in construction engineering and specific measures of building material testing technology, hoping to help the construction industry.

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