



Application Analysis of Green Building Materials in Civil Engineering Construction

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Abstract Since the birth of human, the construction of civil engineering level has been deeply affects people's quality of life, especially after the reform and opening-up policy since the founding of new China, our country the construction of centralized out a batch of high-rise buildings and large span Bridges, sprung up many famous buildings, along with our country civil engineering industry rapid development, gradually become the industry of environmental protection gradually attaches great importance to the problem. Especially since the 19th National Congress of the Communist Party of China, the importance and necessity of environmental protection has become more prominent. Based on this, the important position of green building materials in civil engineering is summarized, and its application in civil construction process is described in detail.

Keywords Civil engineering; Energy saving and environmental protection; Green building materials

Introduction

Since the reform and opening, our country in the civil engineering construction has made remarkable achievements, but with the development of economy and the progress of the society, civil construction in the process of the high pollution caused by waste is paid great attention by the society gradually, in this kind of environment, energy conservation and environmental protection industries and arises at the historic moment of green building materials begin to occupy the market, compared with the traditional construction materials. Green building material has two significant advantages: (1) the environmental protection, green building materials in the production process does not use harmful to the environment of additive, at the same time, this kind of building materials required to produce the most raw materials from industrial waste or can realize mass production of natural materials, such as fly ash, slag, fast-growing poplar, the original bamboo, etc.:(2) Recyclable: Compared with most traditional building materials that are not recyclable, green building materials can be recycled and reprocessed after use, and can be put into the market again after passing inspection. Moreover, the processing period is short and the cost is low, which can reduce the economic and time cost in construction engineering. Therefore, the application of green building materials in civil engineering construction has become the focus of contemporary civil engineering research, and thus effectively promote the long-term development of our country in the construction industry [1].

Green Building Material

Green Material Above

Since the 19th National Congress of the Communist Party of China, with the continuous attention to environmental protection, green materials are also being promoted and used in a planned way. Such materials often have the advantages of low carbon environmental protection, high efficiency and energy saving, and play a very important role in developing China's circular economy and protecting the ecological environment.



Moreover, the introduction of green materials into the civil construction industry can also provide residents with a more healthy and comfortable living environment, but also conforms to the management concept of green construction advocated by China, and lays a solid foundation for the cause of energy conservation and emission reduction in China [2]. It is not difficult to see that green building materials can better meet the current consumer demand and meet the people's high requirements for building materials used in the current construction field [3]. Therefore, relevant management departments should introduce more policies to further promote the use of green building materials and promote the long-term development of the construction industry [4].

The Important Role of Green Building Materials Rework in Civil Engineering Construction

With the continuous development of China's economy, civil engineering industry has made great progress, but with the further development of China's construction engineering, many problems are gradually exposed, such as dust, mud and other pollution problems and civil engineering itself has high resource consumption, etc. The increasingly prominent problems of this kind have a serious impact on China's resources and environment and the quality of life of people in the area where the project is located. Therefore, the large-scale application of green building materials in civil engineering projects has an extremely urgent policy demand and ecological demand.

The Characteristics of Green Building Materials

Compared with traditional building materials, the characteristics of green building materials are more obvious, such as energy saving, low carbon, high efficiency, multi-function and so on [5]. The characteristics of green building materials are summarized as follows: (1) Green and energy saving: the modification performance can effectively reduce the energy and resource loss in the process of project construction, and can also take into account the reuse of waste, and can effectively reduce the cost of the project while realizing environmental protection; (2) Environmental friendliness: the modified performance of the project in the construction process will not cause damage to the existing environment, at the same time in its production process will not produce harmful substances to the environment; (3) Multiple application functions: Compared with traditional building materials, green building materials have more complete use functions and can better meet the needs of construction and daily life. They not only have the thermal insulation functions of traditional building materials, but also can improve living ecology and health care functions. (4) Recycling: Green building materials can be recycled, processed and reused in the process of project construction. As long as the recycled and reprocessed building materials are qualified, they can be put into use again, which not only effectively reduces the economic cost, but also saves the time cost lost due to the lack of building materials.

Application of Green Building Materials

Application of Construction Plane: The Application of Construction Structure

With the rapid development of science and technology in China, green building materials as a kind of environmental protection and efficient new materials have been paid more and more attention in the industry. In addition to the necessary stable characteristics, the building materials used in steel structure should also have superior environmental performance, such as light steel with strong stable performance and good sound insulation effect^[1], This kind of steel products in recent years because of its nature and beautiful and easy to use and, in turn, has been widely used in the history of construction projects, and in the process of the concrete structure as building the most common and most important part, compared with the traditional concrete structure caused by the high pollution and high waste emerging foam concrete, aerated concrete and formwork concrete gradually favored by major construction enterprise [6]. In addition to can replace cement mortar plaster mortar, the use of fly ash and other wastes produced by concrete block and workers in the construction site by the use of large amounts of construction waste in the production of wall materials, the product can effectively instead of industrial products, through the large area USES this kind of green building materials, can not only save costs. Moreover, it can increase production and income under the condition of energy saving. Xiao-ping fan [7], as a simple and inexpensive material, protobamboo can be widely used in building structural engineering, bridge



engineering, making bamboo reinforced concrete structure, water conservancy engineering, road engineering, geotechnical engineering, bamboo reinforced engineering, scaffolding and formwork engineering, etc. The research of Wu Hao et al [8] showed that agricultural waste could obtain cement-based straw composite board, gypsum straw composite board and other thermal insulation decoration materials through gel compounding method.

Engineering uses Functional Applications

In the process of building construction, in addition to structural safety, decoration is also a very important link. The effect of decoration will directly determine the experience effect of people in the process of using the building, and with the development of economy, people pay more attention to the comfort of the building, thermal insulation, waterproof and fire performance directly determines the safety and comfort of the building itself. The various characteristics of green building materials themselves can not only meet the rigid requirements of waterproof, fire prevention and heat insulation, but also make the building look more magnificent, which can not only meet people's basic needs but also give visual impact. For example, the house wall material has good sound insulation effect, as well as the advantages of self-insulation effect, so as to further improve the comfort of people's life, and at the same time to achieve the purpose of reducing pollution and saving energy [9]. Waterproof coating as a widely used material in construction, can effectively improve the waterproof ability of buildings, but the visible waterproof coating on the market is not good environmental performance, so non-toxic waterproof coating is the main direction of current building materials research and development.

Part of the Trim Should be Applied in Interior Decoration

For a long time, people work in the construction of office furniture, or the quality of life, and living environment are inseparable, and with the improvement of living standards, people pay more and more attention to their living quality office space decoration, and the traditional decoration materials in addition to large production process pollution, at the end of the decoration construction process and construction produces pungent chemical substances harmful to human body. Although this kind of problem to be solved are gradually in recent years, but these problems still exist, therefore in decorating a process owners tend to be particularly value always decorate material selection, to meet the basic requirement of waterproof and fireproof, also need to be able to meet the requirements of environmental protection and beautiful, on the wall painting, compared to traditional putty powder and paint. Diatom mud and other wall coatings have attracted more and more attention. This kind of wall coatings can effectively reduce the content of indoor formaldehyde in the construction process or after the completion of construction, can greatly improve people's living experience, but also more health and safety. In woodiness material is decorated in, instead of using bamboo material is a widely used at present, the bamboo material quality is lighter, both in the interior decoration or used in the design of part structure can play a very good performance, and the rapid growth of bamboo materials, low cost, its environmental performance is superior to the traditional wood and man-made board [9].

Conclusion

Green building materials widely used to reflect the current common problems facing human society, namely in the case of the high speed development the serious resource waste and environmental damage caused by the problem, and widely used in building materials, construction of green building is the survival of humans in nature, constantly on the verge of imbalances in the dangerous situation seeks rational strategy [10]. Only on the premise of seeking the organic unity of man and nature and the high-level coordinated development of economy and ecological environment can human beings achieve the sustainable development relationship of harmonious coexistence between man and nature.

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