

The Importance of Developing and Promoting the Application of New Wall Materials

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Abstract: For more than two thousand years, clay brick is the traditional material for building walls in our country. In the stage of socialist development, traditional materials have no advantage at all, and the use of traditional materials in modern buildings will cause serious environmental damage, while consuming a large amount of land resources, coal resources and other resources. The rapid development of China's national economy and the development of the whole society, all walks of life are and race to take the lead, especially the rapid development of residential housing construction, developers destroy the land to build houses, the environment is seriously damaged, therefore, the comprehensive development of new wall materials will inevitably become a new field. The new wall materials we are studying now make up for the shortcomings of traditional materials and improve the shortcomings.

Keywords: New wall material, Solid waste, Green development, Industrial structure optimization.

1. Introduction

Hold high the banner, answer the call, forge ahead in a new era. A new era must be accompanied by new development, the development of new wall materials has also entered a new era, make full use of the advantages of new wall materials, in order to make up for the lack of traditional wall materials, the development of the material industry has always insisted on saving resources, reducing environmental pollution problems, comprehensive optimization of industrial structure and other development themes of the future material industry. With the improvement of building functions and other new needs as the driving force for development, adhere to the innovation and development of new wall materials, make full use of existing technology and equipment, and comprehensively utilize the industrial waste that can be used.

2. Types of New Wall Materials

2.1. Building boards

(1) SP prestressed hollow slab wall

This kind of slab wall is made of high strength and low relaxation prestressed steel wire, sand, stone and 52.5 grade strong cement as raw materials, the slab wall belongs to concrete products, the main advantages of this kind of plate in terms of properties are seepage prevention, good diaphragm effect, strong bearing capacity, good seismic performance, high fire resistance, convenient and fast in the assembly process, can greatly shorten the construction period. This kind of plate is mainly used for inner wall board and load-bearing outer wall board.

(2) Steel wire mesh frame cement polystyrene sandwich board

The plate is mainly composed of three-dimensional space welded steel wire mesh as the skeleton (welded by two sides welded steel wire mesh and W-shaped steel wire mesh skeleton), and then in the middle of the product filled with flame retardant polystyrene foam as the inner core, the outer layer is mainly composed of cement mortar plaster or spray composite wallboard. Steel wire frame cement polystyrene core board has the advantages of light weight, not easy to

break, waterproof, heat insulation, heat insulation, sound insulation, moisture resistance, fire prevention, good shock resistance, easy to cut and assemble, easy to transport and assemble into a wall, fast construction speed. This kind of plate is mainly suitable for the filling wall of high-rise and frame structure, and the wall and roof of the building layer.

(3) Construction mold mesh wall panel

Building mold mesh wall panel is a kind of grid structure wall panel, but also a combination of grid structure and concrete wall, its structure is composed of two steel wire mesh to form a space grid, the interior is filled with concrete, filled concrete to improve the wall load, its building mold mesh is mainly composed of steel plate mesh, reinforced rib, folding hook reinforcement and benzene plate five parts, this kind of wall panel light weight, The construction site is clean and high strength.

(4) Gypsum wallboard

Gypsum wall raw materials are mainly gypsum, in order to improve the overall strength of gypsum wall, by adding an appropriate number of fibers and a small number of admixtures, gypsum wall molding after the above layer of paper, and then through curing, cutting, drying, cutting edge. The new gypsum board has the advantages of light weight, simple operation, processing and assembly, heat insulation, etc. Gypsum board is generally used for ceiling and partition board, internal partition wall, partition board, wall cladding panel.

2.2. Non-clay bricks

(1) Non-clay sintered porous bricks and hollow bricks

(2) Sintered laminated brick and non-clay brick in line with national and industrial standards.

(3) Concrete brick and concrete porous brick: concrete porous brick, the product is mainly made of cement and stone powder, mixed together and then extrusion molding, the brick has good strength, sound insulation effect, fire resistance, waterproof performance.

2.3. Building block Class

(1) Light aggregate concrete small hollow block.

(2) Ordinary concrete small hollow block.

(3) Metal-faced sandwich board.

3. Application Status of New Wall Materials

Since the reform and opening up, with the development of modern science and technology in the new era, the application of new materials and new technologies in the field of construction, the development of new wall materials has entered a new trend, and a variety of new wall materials are actively coming out. Under the integration of various new technologies, various new materials have various advantages such as fire prevention, earthquake resistance, thermal insulation, waterproof, noise reduction and decoration. Continuous optimization of wall materials also makes up for some shortcomings of traditional materials, China put forward in 2013 "accelerate the development of multi-functional composite integrated wall materials, integrated roofing" "to promote building industrialization, with the point of view of the country to carry out industrial building demonstration pilot, thus, the importance of promoting the development of new wall materials. With the needs of social development and construction, roads and buildings are essential, and all kinds of buildings are rising, which gives our new wall materials a favorable opportunity for development. At the same time, with the popularization and application of steel structure, the wall materials used in steel structure have fully covered the integrated production. As an important building enclosure structure, the main function of the wall is to isolate the indoor and outdoor, bear the building load, etc. The purpose of promoting the application of new wall materials is to improve the shortcomings of traditional wall materials and comprehensively optimize the wall structure.

4. The Development Trend of New Wall Materials

4.1. From natural to synthetic materials

At present, all kinds of buildings are rising, and the demand for building construction is also increasing, so the original single material can no longer meet the needs of some construction projects. In this respect, under the integration of new technologies, a new type of wall material is innovated - a new type of wall composite material, the generation of which is expected to realize the complementary advantages between wall materials. So that the wall material can be fully optimized. In the future wall material market, traditional natural materials will gradually be replaced by new wall materials, and new wall synthetic materials will also have broader application prospects.

4.2. Solid waste is widely used to produce wall materials

With the rise of industrial production, the needs of various production, industrial fly ash, slag, river silt and construction residue and other solid wastes are actively produced, and make full use of solid waste to prepare fly ash brick and lime sand brick; Agricultural solid waste such as agricultural straw or waste straw can also be used to produce lightweight wallboard. In response to the development concept of the national construction industry in the new era, making full use of solid waste can not only turn waste into treasure, but also promote the recycling of resources and energy, reduce environmental pollution problems and the production cost of

wall materials.

4.3. Tends to green development

The realization of the "green" production of wall materials begins with the "green" production technology, which mainly includes the selection of raw materials, the manufacturing of materials and the use process, so as to minimize environmental pollution in the entire production process. The nature of the raw materials requires non-toxic and harmless, and the production process of the materials requires to minimize the generation of pollutants and reduce pollution to the environment; The most important point is that the wall material does not add any radioactive contaminants during the production process.

5. The Existing Problems of New Wall Materials

From the current stage, the application range of new wall materials in China is smaller than that in other countries, the quality of new wall materials products is unstable, the production and development are unbalanced, and the overall lag behind. Through the investigation of the material market and manufacturers, the analysis concludes that the possible causes of these problems are that the raw materials for the production of wall materials can be obtained without spending money, the preparation process is simple, and the production cost is low. Products with low production costs can be imagined, and there are problems described above.

The independent research and development ability of Chinese production enterprises is poor, and most of the production equipment is imported equipment. Market demand is gradually increasing, in order to meet the requirements of the material market, we must continuously upgrade and optimize the production of products and expand the production scale. On the other hand, the production standards and inspection standards of new wall materials are still not unified. The existence of the above problems increases the difficulty of site construction and limits the effective promotion and application of new wall materials.

6. The Significance of The Application of New Wall Materials

6.1. Developing new wall materials is the basic requirement of implementing sustainable development strategy

With the sustainable development strategy, protecting the ecological environment is a basic national policy of our country, for our construction industry, we must promote the development of society in accordance with the development concept of the new era. Since 2006, the rapid growth of China's population, the rapid rise of scientific and technological development, thus driving the sustained and rapid development of China's economy, economic development is to improve the quality of people's living standards, when people's living standards continue to improve, then we have to face some problems, such as the gradual reduction of resources, environmental pollution is becoming more and more serious, in response to the call of the new era, All aspects require "green" development, so we must fundamentally solve the shortcomings of traditional wall materials, such as polluting the environment and consuming energy, so we must vigorously promote and apply new wall

materials, apply new wall materials, reduce pollution, and add a "green" to our mother Earth.

6.2. Promoting the development of new wall materials is the basic main line to realize the modernization of the construction industry

During the "14th Five-Year Plan" period, China's residential housing industry investment rate has exceeded other world powers, this stage is also the rapid development of the national economy, which has brought new opportunities for new wall materials, the door of the material market will also be opened for new wall materials, but also for the development of new wall materials put forward clear requirements.

6.3. Provide more new wall materials for the requirements of urban modernization and urbanization construction

The data show that the current level of urbanization in China is at a low stage, adapt to the stage of social capitalist development, comprehensively promote the level of urbanization in China, the "eleventh Five-Year Plan" period of China's urbanization level will have a higher improvement, new wall materials industry should make good use of this good opportunity to expand the scope of new wall materials application.

6.4. The development of new wall materials promotes the structural adjustment of the building materials industry

Promoting the structural adjustment of the building materials industry is the main line proposed by the "eleventh Five-Year Plan" period to promote economic development, and the so-called "abandoning the old and embracing the new" the main line proposes to gradually replace the "traditional wall materials" with new wall materials to achieve the replacement of wall materials. All parts of the country actively promote the use of new wall materials, innovative technologies and new equipment to improve the overall level of wall materials industry in our country.

7. Sum up

Protecting the ecological environment and promoting the sustainable development of society are not contradictory, because we must ensure that we do not damage the environment while promoting social development. This is also a responsibility shouldered by generations of young people. The construction industry has a good prospect for development, all kinds of buildings have been erected, the wall as the main load-bearing structure of the building, the construction of the wall has also been comprehensively improved, and the new wall materials have thus entered people's vision. New development ideas, from the long-term interests of today's society, innovation and development has been normalized. The study of various new building wall materials is in line with the advocacy concept of environmental protection in the new era. For the development and application of new wall materials, we need to carry out new ideas and apply new wall materials with a unique way of thinking. Different areas, or different buildings, due to the environment, the building itself and the nature of the new wall materials. Because the specific development of the future is determined according to the specific situation, the material market should meet the requirements of different regions and various types of building wall projects. Not forgetting the original intention, we have always taken resource conservation, energy conservation and emission reduction, industrial structure optimization and environmental pollution reduction as the development theme.

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