

1. Demand for high-quality building materials at present

Since the economic renovation, demand for construction service has become greater and greater in both industry and housing business. Demand for high-quality building materials therefore is on the increase because these materials are used for decoration and preservation of buildings. High-quality building materials are products of high technologies. In foreign countries, high-quality building materials have caused methods of constructing and designing to change, enhanced the beauty of buildings, diversified the design and style, increased the longevity of buildings and reduced cost and time needed for construction.

High-quality building materials include many kinds such as ceramic brick, stained glass, quartz tile, aluminium bar, marble, high-quality toilet facilities... they are also new ma-

2. Production of high-quality building materials at present

According to the Ministry of Construction, the average growth rate of the production of building materials from 1990 to 1994 was 15%. The production of ceramic brick, especially, increased by 45-50% annually. Many local products reached international standard. Some factories producing high-quality building materials have come into operation with advanced production line such as Thanh Thanh, Đồng Tâm, Đồi Tân, Hữu Hưng, Thạch Bàn, etc. Apparently, the growth rate of building material industry was remarkable, however it hasn't met the market demand and exploited effectively existing raw materials of the country.

3. Potential resources for the production of high-quality building materials

Vietnam, from north to south, is rich in mineral resources which are

- Granite and marble: their reserves are of over 8 billion cubic meters.

- Kaolin: this material is used in making porcelain. Over 80 kaolin mines containing over 300 million tonnes were discovered in North, South and Central Vietnam.

- In Vietnam, there are also many mines of felspar, dolomite, diatomite, silimanite, bentonite... which are necessary for producing glass, porcelain, soundproof or heat-resistant materials, colored powder...

4. Some objectives in developing the high-quality building materials industry

Natural resources; industrious, cheap and abundant labor force; a large domestic market are Vietnam's comparative advantages. Moreover, the investment in construction (fixed investment) and infrastructure is on the increase (by over 25% annually). These are favorable conditions for development of building material industry.

The strategic objectives that must be completed by 2000 and 2005 are: to gain the growth rate of 15-20% annually; to modernize building material factories with a view to producing high-quality materials and to exploit effectively and scientifically all mineral resources of the country.

As for the source of capital, foreign investment and international cooperation are important ways to secure needed capital. All projects should aim at exporting products and substituting imports. Naturally, domestic investment must be encouraged also.

According to the plan set forth by the Ministry of Construction, production of the following high-quality building materials will be developed:

- Glass: the output will be 35-40 million sq.m. by 2000 and 90-100 million sq.m. by 2010.

- Toilet facility: From 2 to 2.3 million items by 2000, and 3.5 - 4 million items by 2010.

- Ceramic brick: 20 million sq.m. by 2000 and 35-40 million sq.m. by 2010.

- Marble: 1.8-2 million sq.m. by 2000, and 3-4 million sq.m. by 2010.

In future, international relations and technological progress will pose many problems for the building material industry, but its future is promising and bright.

Reference materials:

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PRODUCTION OF HIGH-QUALITY BUILDING MATERIALS IN VIETNAM

SOME PROBLEMS TO BE CONSIDERED

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materials that changed methods of constructing, such as composite substances, heat and water-resistant materials, soundproof materials or materials enhancing durability of concrete, etc.

In recent years, the increase in importation of high-quality building materials has reflected this market demand. In the long run, Vietnam can't spend its limited and much-needed source of foreign exchange on importing these materials, on the other hand, we should try to produce and export them with a view to accumulating capital for development projects.

In order to achieve this aim, we should make plan to exploit local raw materials and produce building materials of all kinds. Particularly, producing and exporting high-quality building materials should be considered as the leading business. What matters is to find the most effective ways of producing them.

raw materials for producing high-quality building materials:

- Limestone: With reserves of 8.258 billion tonnes in 28 provinces (CaO represents 50-54% of Vietnam limestone) is much needed for making cement and high-quality building materials.

- White sand: Official examination showed that there were over 150 million tonnes of white sand found in many beaches such as Vân Hải (Quảng Ninh), Nam Ô, Thanh Bình (Quảng Nam-Đà Nẵng), Cam Ranh (Khánh Hòa)... In its components, SiO₂ represented 99.3-99.5%, Fe₂O₃ from 0.03 to 0.11%. In Cam Ranh, Hòn Gốm, Thủy Triều (Khánh Hòa), there is white sand of high quality and purity and could be used for producing glass (Cam Ranh white sand has been well-known all over the world). Black sand containing titanium and sandstone are abundant (some hundred thousands tonnes) in Vĩnh Yên (Khánh Hòa).