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BRICK INDUSTRY DEVELOPS; PRODUCTION OF HOLLOW BUILDING BLOCKS INADEQUATE

Brick Production and New Plants

The "Mosgorkirpich" (Moscow City Brick) Trust operated very successfully during 1949. The 1949 year plan, which had been considerably augmented over 1948, was fulfilled in November. By 1 January 1950, Moscow construction projects were to receive an additional 20 million bricks. Production costs were below plan and during the third quarter of 1949 Moscow brick plants gained a saving of 16 rubles on every 1,000 bricks.(1)

Brick plants of the Kiev Oblast Administration of Construction Materials Industry produced 8 million bricks above the 1949 year plan for Kiev construction projects.(2)

In connection with the considerable increase in housing construction planned for 1950, a number of new enterprises for the production of construction materials will be built in Zaporozh'ye. Preparations are under way for the construction of a brick plant with a capacity of 60 million bricks per year. A plant for the production of gypsum blocks will also be built during 1950.(3)

The Ministry of Construction Materials Industry USSR is building six new brick plants in Moscow, Leningrad, Ryazan', Poltava, Zaporozh'ye, and Kirovograd oblasts. These plants will produce bricks and facing materials by a new dry-press process and will be equipped with presses designed by Engineer A. A. Meliya, Stalin Prize Laureate.(4)

Technical Council Proves Inadequate

The Technical Council of the Ministry of Construction Materials Industry Belorussian SSR was founded over a year ago. The council consists of leading workers of the ministry, workers of the Academy of Sciences Belorussian SSR, of the polytechnical institute, and of the Scientific Research Institute of Construction Materials Industry. The technical council has a wide sphere of activity, as the demand for brick and other construction materials in the republic is extremely great.

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Improving the quality of bricks, lowering production costs, speeding up the production cycle, mastering new types of construction materials, and industrializing construction work -- these and many other problems should be given serious consideration.

However, the council has limited its activity to the revision and improvement of new construction plans, and is neglecting all other phases of its work. The Scientific Research Institute of Construction Materials Industry recently developed several types of new materials, which are very slowly finding their way into construction enterprises. The Technical Council has not once discussed the introduction of new building materials. Improvement of the brick quality has also been neglected. It is no secret that there is much to be desired in this respect.

During the one year of its existence, the council of the ministry has solved only three important problems of the building industry: designing a small furnace for burning milled peat in artificial driers, a new firing kiln, and a tunnel drier.

The council has no direct contact with construction enterprises. Out of 12 permanent council members only one, Ponomarev, director of Brick Plant No 1, is a representative of industry.(5)

New Industrial Town Has Brick Shortage

The town of Berezniki on the Upper Kama, Molotov Oblast, has developed into an important industrial and cultural center and is continuing to grow. However, during the postwar period, construction of new housing has been very slow. It has taken from 3 to 5 years to build apartment houses which could have been completed in a few months or in one year. Builders have blamed the lag in construction on a brick shortage. This is partly true, because brick production has not been given sufficient attention. The "Sevuraltyazhstroy" (Construction of North Ural Heavy Industry Enterprises) Trust is supposed to produce silica bricks. It has adequate supplies of sand for this purpose. However, the required lime is almost entirely at the disposal of the soda plant in Berezniki. As a result, there are many interdepartmental arguments and fruitless discussions.

It would be entirely possible to produce sufficient quantities of brick in Berezniki, as the necessary plants exist, and it would only be necessary to put them in working condition. There is no shortage of sand and lime.

Several years ago, Chief Engineer Chernov of the soda plant worked out a method for producing inexpensive bricks of good quality from waste material, that is, incompletely burnt lime and distillation residue. This process would help to increase the output of essential building materials, relieve the soda plant of considerable losses, and prevent pollution of the Kama River water. The "Glavsoda" (Main Administration of Soda Industry), Ministry of Chemical Industry, agreed with Engineer Chernov's suggestion, but nothing was done about it. Production of carbonated bricks did not come under the jurisdiction of the soda plant and the latter was not sufficiently interested to spend money and effort on this project. Therefore, production of carbonated bricks has been postponed from year to year.

The shortage of bricks is not the only problem in Berezniki. There has recently been a shortage of water. Five all-Union ministries have enterprises operating in Berezniki. All of them use artesian well water in ever-growing quantities. This means there are numerous water consumers, but nothing has been done for the construction of new water pumping wells or the discovery of new ground water. This matter is under the jurisdiction of two ministries, the Ministry of Electric Power Plants and the Ministry of Communal Economy RSFSR. The further growth and development of Berezniki is hindered by a lack of coordination between individual ministries. It is up to the Ministry of City Construction to bring order into this situation.(6)

New Products of Ceramics Industry

The Saburtalo Brick Plant in Georgia has mastered the production of five-sided hollow bricks. All presses of the plant are to be converted to this new type of production and the plant intends to produce 200,000 unfired bricks by 12 March.

The five-sided hollow brick is a valuable building material. It has many advantages over the regular type of brick: its production is less costly, the use of raw material (clay) is reduced by 15-20 percent, the productivity of machines and kilns is increased, the work is facilitated, and transportation is improved because the five-sided brick is considerably lighter than the ordinary brick. All these considerations are extremely important in view of the many construction projects in the Georgian SSR.(7)

Postwar construction work in the Ukraine, reconstruction of cities and villages and construction of new buildings provided in the Five-Year Plan, have made it necessary to study possibilities of using local construction materials. Ukrainian technicians, architects, and construction workers were the first ones in the USSR to solve the problems connected with mass production and use of hollow ceramic blocks for construction. The use of hollow ceramic blocks by Ukrainian construction projects is now beyond the experimental stage. Thirty-five plants of the Ministry of Construction Materials Industry Ukrainian SSR have produced more than 100,000 cubic meters of various blocks and 14,000 square meters of ceramic facing materials. In Kiev alone, ceramic blocks were used in the construction of 200 houses.

Experiments have proved that hollow ceramic blocks used in construction are in certain respects superior to brick, wood, or slag block structures. Ceramic blocks are highly refractory, lightweight and durable, and have high heat resistance. There are large reserves of raw material for the production of ceramic blocks and the low cost of their production makes it possible to use this construction material on a large scale. If we assume the production cost of bricks for one brick house to be 100 percent, the cost of ceramic blocks for a similar house would be 77 percent. Of equal importance is the fact that by reducing the thickness of walls built of ceramic blocks, the productive area of a building is increased. When mass production of ceramic blocks has been mechanized, production costs will be considerably lower.

Builders and architects of Kiev are working out new types of products made of hollow ceramic blocks, and are applying them more widely in the construction of buildings. Much has been done in this field by a group of workers headed by A. V. Vlasov, active member of the Academies of Architecture USSR and Ukrainian SSR, and architect A. V Dobrovol'skiy. In the near future, builders plan to construct houses entirely of hollow ceramic blocks, except for the floors, doors and window frames. This will greatly cut down the use of timber.(8)

Nine two-story houses of hollow ceramic blocks have been built in Dneprodzerzhinsk. This material has good insulating qualities and is considerably lighter than slag brick, although it has a slightly larger volume. Construction of ceramic block walls is less time-consuming than construction of ordinary brick walls. (9)

Criticizes Production of Hollow Bricks

Various types of hollow ceramic products are now being produced by 35 enterprises of the construction materials industry of the Ukrainian SSR. The results achieved by Ukrainian ceramics industry workers have found general approval, but so far other republics have done nothing to follow their example. Even the Ministry of Construction Materials Industry RSFSR has not drawn any practical conclusions and has not taken steps to organize this type of production on a large scale.

During 1949, ceramic blocks were being produced only in Leningrad. In Moscow, where the demand for good wall-building materials is especially great, production of hollow ceramic blocks has not even been organized. Enterprises of the Moscow City Administration of Construction Materials Industry (chief, Antonenkov) have not produced a single ceramic block or a single porous brick. The Kuchino Brick Plant is the only enterprise under the Moscow Oblast Administration of Construction Materials Industry (chief, Golovanov) which has begun production of hollow wall-building materials. The ministry has not shown any interest in the work of this plant. Workers of the Ministry of Construction Materials Industry RSFSR have no contact with construction organizations. In 1949, the Kuchino Plant produced over 11 million porous bricks, but only 1.5 million of these bricks were used for construction of a tall building, which was their original purpose. The remainder was used like ordinary solid bricks.

The 1950 year plan provides for the production of ceramic blocks only in Leningrad, Moscow, Novgorod, Kaliningrad, and in the Crimea.(10)

The Ministry of Construction Materials Industry Belorussian SSR has had many discussions regarding conversion of the brick industry to the production of hollow ceramic products (porous bricks, wall blocks, ceiling blocks). However, very little progress has been made in this direction. In 1949, the production of hollow blocks constituted 4.5 percent of the entire brick output. According to plan, this type of production is to be 8.3 percent of the total brick output in 1950.

So far, the production of hollow ceramic products in Belorussia has been assigned to two plants only, Vitebsk Plant No 32 and Grodno Plant No 20. The Grodno plant has made the best progress, but even here the new branch of production has not been sufficiently developed. The plant has excellent vacuum presses at its disposal. However, production losses (waste and breakage) for hollow products are still very high. In the case of unfired blocks, losses constitute 8.8 percent, and for fired blocks 16.5 percent. As compared with production of solid bricks, the amount of waste in the case of unfired bricks is 4 percent and fired bricks 1.1 percent. A comparison of these figures shows that much remains to be done for the improvement of technological processes.

The problem of transporting hollow blocks to construction projects also requires attention. Consumers are extremely careless in loading the blocks for transportation.

So far nothing has been done by the ministry to advertise the new product. Not a single building plan has been worked out in Belorussia which would take into consideration the use of hollow ceramic blocks as a wall-building material. As a result, even in Grodno and Vitebsk where hollow blocks are the basic wall material, the walls of newly built houses have the former thickness, which is no longer justified. This means that the main advantage of hollow blocks, their high insulating quality, is not being utilized.(11)

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