

SYNTHETIC PHENOL EXPANDS INDUSTRY

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THE MOST IMPORTANT FACT WHICH APPEARS upon examination of the development of the Italian plastics industry during 1937 is the increase of 70 percent in phenolic resins consumption and that of 100 percent in urea resins consumption. The manufacture on a commercial scale of phenol-formaldehyde resins was started in Italy in 1923, but during the first years this branch had an irregular development. Only recently has its activity begun to move on a more definite and solid line after the question regarding raw materials was successfully and adequately answered.

The preparation of formaldehyde was actually performed since 1923 in connection with important plants for the manufacture of synthetic methyl alcohol. The supply of phenol was not so certain owing to the rather limited availability of tar. Today, it may however be considered as satisfactory, a large plant working since 1935 for the preparation of synthetic phenol from benzol and two big coke works having been erected recently, which provide the Italian market with large quantities of tar. Furthermore a first plant for the manufacture of synthetic urea was started during 1936, so that the supply of this raw material does not cause any apprehension.

At the same time that raw materials were being developed, the resins and molding powder industry was consolidated, while simultaneously an extensive publicity campaign was undertaken with regard to the various applications. The industry has therefore found favorable conditions for its expansion, which started in 1937 and is now in full development.

The most important consumer of molded phenolic products is still the electrical industry, but they are also receiving rapid acceptance in other industries. Particularly extensive progress was noted during 1937 in the use of telephone apparatus made entirely of molded material, as well as in the production of broadcast apparatus with molded casing. A further important success was the nearly complete substitution of molded phenolic parts for stainless steel parts for machines of the rayon industry. The most interesting novelty of 1938 is the preparation of complete furniture of molded parts for the equipment of the State Railway cars, comprising: a little hinged table weighing about 3 kg., a toilet seat and seat cover, a box for towels, lustres, labels, decorative frames hitherto made of wood, etc. Within the current year the Railway Authorities will be supplied with the parts required for the equipment of 500 new cars, while at the same time negotiations are already being

made for further supplies. The molding of urea-formaldehyde resin for the front wall of domestic refrigerators will also be completed this year: this will be the largest part which has been molded up till now in Italy (about 1 m²) and will require a press of 4000 tons, which is being assembled at the present time.

Great activity is noted in press building: up to 1937 the most capable presses existing in Italy consisted only of a few machines of 1000 tons; today the 1000-ton presses are largely used, others of 1000 tons capacity have been installed, and another of 4000 tons is in the course of development, as mentioned above.

The injection molding of thermoplastic resins is still at the initial state, but good results have already been obtained by using ordinary presses suitably adjusted. Of particular interest are big carters of phenolic resins for the rayon industry, which it was found suitable to mold by injection in view of the fact that the very thick piece would require too long a time for compression molding.

The Italian production of laminated plastics is still comparatively moderate, however, in this field too, progress is being made and their use has also extended outside the electrical field. It may be mentioned, for instance, that gasoline tanks of 1/2 m², a great number of which was supplied during 1937 to Aeronautica and Marine Authorities were made wholly of laminated material, of high mechanical resistance and also resistant to the corrosive action of gasoline.

Casein has shown some progress during 1937; however if it has lost some applications which have been substituted by more modern plastics, it still maintains, on the other hand, prevalence in the button and fashion articles sections and has met with success in sliding fasteners of different colors. A new technique was adopted last year for casein in molding small sized articles directly in the forms desired.

Pyroxylin, too, has not shown during 1937-1938 a progress which might be compared with that attained by other resins, but its consumption has again noted a net increase, especially in the field of spectacles, in harmonica manufacture, largely consumed in Italy, and in the manufacture of sliding fasteners, which are all novelties with prospects of a large development.

The manufacture of two new types of plastic materials has been introduced in Italy during 1937: acetate and acrylic resins. Cellulose acetate plastic materials had no large development in Italy because of their foreign origin. During 1937 an important Italian (*Please turn to page 11*)