

New High-tech Turnkey Plant Made in Italy for the Romanian Market

In July 2010, the Romanian district of Zalau, in the heart of Transylvania, has witnessed the accomplishment of the start-up of the last section of a brand new high-tech turnkey plant, supplied by *Bongioanni Macchine/IT* to the Romanian company *CEMACON*, whose remarkable entrepreneurial dynamism is proved by its significant investments in the field, followed by great results on national market thanks to the production of high-quality articles.

The plant, erected inside a modern steel building standing nearby the quarry and producing 800 t/d of clay wall blocks, was realized in collaboration with *Sacmi Heavy Clay/IT* who supplied dryer, kiln and handling equipment.

The project was carried out in two steps: the first one was accomplished around the middle of 2009, hitting the target to install a new preparation plant in replacement of the old one, which by then was already obsolete. The new plant consists of a series of primary box feeders, followed by a clay-crusher, a roughing roller mill and a refining roller mill – both of the series *COMPACT* – to end up with a double shaft mixer without grids type *MIX* having auger of 710 mm and equipped with automatic moisturizing system.

The raw material processed by these machines, is then conveyed to a shuttle rubber belt conveyor equipped with two launching devices, that is designed to grant a constant and uniform feeding to a ditch silo. To complete its homogenization process, the clay remains for an average of two weeks into this silo, whose capacity is of 15 000 m³ approx. After that, a bridge-crane excavator takes the clay out of the silo and conveys it to the production area.

The silo is also equipped with a rubber belt conveyor whose task is to bypass the excavator when it is under maintenance, thus allowing to keep on conveying the clay straight to the production, without stopping the process. Once completed the first step, the new extrusion line was not yet ready; for that

reason, till one year ago the excavator, through its reversible rubber belt conveyor, fed the clay to a column of trucks that transferred the processed and homogenised clay to the extrusion line of the old plant, situated a few kilometers away, in the town centre of Zalau.

At the same time that this first segment of the plant was being started-up and commissioned, the second step of the project began with the delivery and installation of a new extrusion line, consisting of an automatic box feeder which receives clay from the silo, a fully automatic hyperrefining roller mill type *COMPACT LS* and an extruder type *TECNO* having auger of 750 mm. This extruder has been installed on a mobile frame which allows to adjust the height of extruder's centre line, according to the type of product manufactured.

Finally, an automatic moisture control system assures to obtain a mixture characterized by those constant ceramic features that make extrusion and following processes much easier and that, at the same time, improve mechanical specifications of products too.

All the machines are completely controlled and operated through electric power boards supplied by *Bongioanni Macchine* who, for this project, has chosen the most cutting edge technologies, as for instance



Fig. 1 Excavator with reversible rubber belt conveyor



Fig. 2 Box feeders



Fig. 3 a-b View of the extruder type *TECNO* having an auger of 750 mm



Fig. 4 Extruded clay column

pulpits with touch-screen displays that, through very easy and user-friendly screens enable the operators to learn promptly how to run the machines.

A special thank goes to *Eng. Popa* of company *Mondoceramico/RO*, who has taken care to coordinate and follow up the supervision to the execution of the project.

The plant has been working at full capacity for more than one year and, for sure, it is an important point of reference in an emerging country of the new Europe.

Bongioanni Macchine S.p.A.
Fossano, Italy
www.bongioanimacchine.com