



It can be done!
by



IPIAC-NERY founded in 1855, is a Company with a large experience in the sector of the structural ceramic industry. Along all these years the Company has acquired know-how, thus becoming as one of the best companies in this branch of industry. All over the world we have already carried out many projects of ceramic plants, with several capacities of production and automatization, for the manufacture of bricks, roof-tiles, coves, floor-tiles, expanded clay, etc. IPIAC NERY tries to be always in the vanguard of the technological and ecological innovations, by seeking the more practical, efficient and economical solutions and meeting always the Customer's requirements.

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EXPANDED CLAY

Clay preparation and stockage line

Shaping and cutting line, rolling of expanded clay and transport to the rotary kiln

Firing and cooling of expanded clay in rotary kiln

Intermediate stock of expanded clay

Selection of granule sizes

Ensilage for bulk load

Automatic sacking, palletization with robot and plasticizing of sacks

THE EXPANDED CLAY FACTORY

is prepared to produce annually 220.000 m³ of final product.

The complete technological line includes the previous processing of clays with the subsequent rotting of the charge prepared in the storage section; crushing and preparation of the clay up to the parameters necessary to the shaping of the green aggregates; pre-heating and firing of the clay aggregates in the rotary kiln; storage of the fired product in an intermediate warehouse from where the little balls are sent to the selection section. The selection silos store the little balls with similar size. In turn, the choice of the product size corresponds to the customer's needs according to the product to be manufactured.

The supply of the final product is variable depending on the customer's wishes and can be made as follows: in bulk on a truck; in big bags; or in bags of 50l, in case of retail sale.

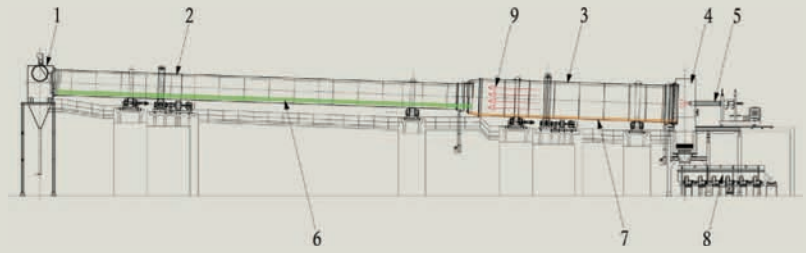
The technological line is automatized and the process is controlled by a system of supervision which allows the registration of data in real time of the whole factory and the centralization of the registered information.

The final product shows the aggregates with a round shape, fired surface and porous structure inside. The expanded clay is a light and resistant ceramic material having the following properties: light weight with high resistance, excellent sound and thermal insulation, resistance to fire and frost. It's resistant to the chemical products and has a large durability. It's also considered as an attractive alternative compared with other building materials.

The product density changes, but generally is around 300-450 kg/sq.cm. One of the most important applications of the expanded clay is as aggregate in the lightweight constructions of concrete.

The expanded clay is a natural and ecological material which contributes to its great demand.

Expansion process of expanded clay



1 - Entrance chamber
2 - Pre heater
3 - Expander

4 - Exit chamber
5 - Burner
6 - Clay aggregates

7 - Expanded clay
8 - Cooler
9 - Hot gases flow

Technical Features

Total length	63000 mm
Weight with lining	525000 kg
Heating power of kiln	24 MW
Air flow	93899 m ³ /h
Specific heat consumption	500 kcal/kg
Expansion factor	≤3
Production	20000 kg/h



The main element in this manufacturing process is the ROTARY KILN. Our rotary kiln is composed of two metallic bodies with variable diameter turning to different speeds. The body with inner diameter of 2,5m x 42,00m has a pre-heater where the green clay aggregates are heated up to 600-800°C. The other body with inner diameter of 3,7m x 20,75m has a function of expander, where the aggregates are expanded and take the final shape. In the expander the firing temperature is between 1170-1200°C.

The inside of the kiln is lined with refractory material. Both parties that compose the kiln, i.e., pre-heater and expander, turn independently around an axis with different speeds. The rotary kiln is mounted with a little inclination in relation to the ground, thus allowing, with the help of rotation, the motion of the aggregates from the high extreme point to the low extreme point. The running of the rotary kiln is based on the principle of reflux: the green aggregates move against the flow of hot gases, are heated by the heater, and then, after having entered in the burner flame zone, they expand.

Lay-out of expanded clay factory

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- 5 - Selection of granule sizes
- 6 - Ensilage for bulk load
- 7 - Automatic sacking, palletization with robot and plasticizing of sacks

