



Pollution

Prevention in the

Structural Ceramics Sector

CD

Castellano

English

Français

The Regional Activity Centre for Cleaner Production (RAC/CP) of the Mediterranean Action Plan has produced this leaflet on pollution prevention in the structural ceramics sector in order to show companies the opportunities they have for implementing pollution prevention alternatives and good housekeeping practices, thus minimising the environmental impact associated with their activity.

The companies grouped in this sector manufacture bricks, roofing tiles and other fired clay products and are included within the group of industries involved in the manufacture of non-metal mineral products.

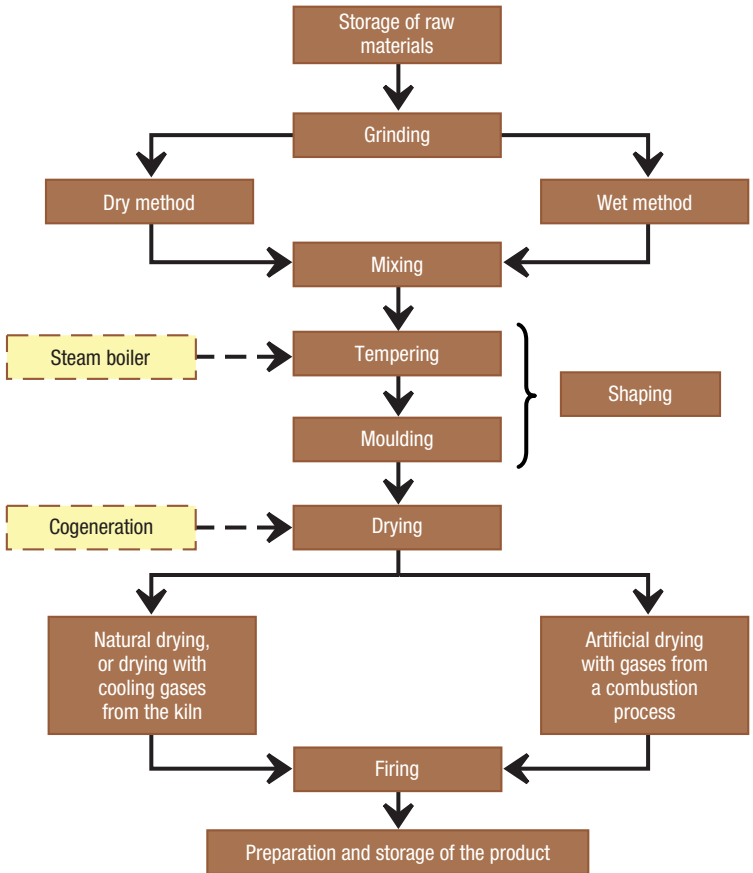
This is a sector that is linked strongly to the evolution of economic cycles and construction activity. These industries are generally located near the site where the raw materials used are obtained and also close to centres of consumption, in order to minimise the transport costs of products with low added value.

Moreover, this is a sector with a large number of family businesses, but one that is in constant evolution in order to adapt to new market demands.

The main products produced by this sector can be grouped into different families:

- Bricks
- Roofing tiles
- Hollow bricks
- Blocks
- Paving slabs
- Setts
- Lattice tiles
- Cladding tiles
- Panels
- Other

Manufacturing processes of structural ceramics materials



EXAMPLES

INSTALLATION OF HIGH-SPEED BURNERS IN THE KILN

The consumption of heat energy in the ceramics sector is one of the sector's most significant aspects. For example, for a plant producing 50,000 t/year, the average cost of heat energy can contribute 25% of the company's total costs. A large part of this heat energy is consumed in the kiln and in many cases also in the dryer.

The installation of high-speed burners in the side walls of the pre-heating zone of a tunnel kiln enables greater homogeneity to be obtained of the temperatures in the upper and lower parts of the packets of bricks. This ensures that the material is fired more quickly and effectively.

BENEFITS

The installation of this type of burners reduces:

- the length of the firing cycle (with the consequent increase in productivity of between 20 and 30%).
- the kiln's specific consumption level (by approximately 5%).

USE OF HOT GASES FROM THE KILN FOR THE DRYING PROCESS

In many installations in the sector, the process of drying material before it enters the kiln is carried out by means of the installation of burners that consume fuel to heat the air. As a result of this, atmospheric emissions of combustion gases, particles etc. are generated in greater or lesser proportions depending on the fuel used.

The installation of a system that allows hot gases from the kiln to be used can reduce and even entirely remove the need for fuel consumption for drying.

The system is formed by a pipeline connecting the two installations, together with a system of hot air ventilation (regenerator), which transports the hot air to the interior of the dryer. Once the air is inside the dryer, it is redistributed by the fans in the dryer's interior.

BENEFITS

The implementation of this system will result in the reduction of the company's overall emissions by a percentage that will depend on the type of fuel used in the dryer.

The expected savings will vary between 2 and 6% of the overall consumption of the kiln as a result of the use of gases from the kiln and of around 1-5% of the overall consumption of the kiln as a result of the recovery of waste heat.

Mediterranean Action Plan

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