



## Ceramics.

### Customer Success Story

<b>Location</b>	State of Mexico, Mexico
<b>Application</b>	Ceramic Industry
<b>Project</b>	Kiln General Maintenance Service
<b>NUTEC Products</b>	<b>MaxBulk® 2600</b> Ceramic Fiber, Macromodules, <b>MaxBlock®</b> Modules and Refractory Bricks
<b>Operating temperature</b>	<b>1,300°C</b> (2,370°F)



**Ceramic insulators are a crucial element in the infrastructure of the electrical network that brings energy to our homes, as well as in other types of transmission networks, such as telephone and data lines.**

In any electrical infrastructure, insulators are responsible for mechanically supporting the conductive elements that are part of the line, keeping them isolated from the ground and other conductors. Therefore, their design and manufacture are very important for the safety and efficiency of electrical networks.

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## The Challenge.

The kilns in an electroceramic plant play a very important role in the manufacture of electrical products, since they are used for firing the ceramic insulators used in the electrical network.

Recently, **NUTEC** was asked to provide a General Maintenance Service for such a kiln, due to the fact that very noticeable heat leaks were evident. This meant an increase in operating costs for the client, due to increased gas consumption; at the same time, these leaks represented a safety risk for plant personnel.



Fig.1 **MaxBlock 2600** modules kiln application

## Solution and Product Selection.

Given the kiln's operating temperature, the **NUTEC** team selected **MaxBulk 2600** ceramic fiber, which has zirconia as a component, allowing it to withstand temperatures up to 1,425°C (2,600°F). Macromodules, **MaxBlock** Modules and Refractory Bricks were also used in different parts of the kiln structure.

This project presented several challenges for the **NUTEC** team. The first of these was to ensure that the kiln structure was in good condition, necessary for the correct installation of the insulation modules, as well as to guarantee the lifetime of our service. At the beginning of the process, the team discovered that the kiln structure was rusty and damaged, for which modifications were requested in certain sections, mainly the sheets on the side and top.

Another important challenge resulted from the detection of a mechanical problem in the kiln door, which prevented it from sealing properly. To fix this, we came up with an engineering design that allowed our thermal insulation system to create an airtight seal.

After the first firing the team made subsequent visits, during which hot spots were identified with a thermographic camera. These were a product of the high velocity of the gases in the burners, which resulted in the detaching of some of the modules that had initially been employed. To solve this, **NUTEC's MaxMoldable** ceramic fiber insulation was used.

## Results and Benefits.

Due to the use of ceramic components in the electrical industry, the proper functioning of these kilns generates a positive impact for many people. For our client, the General Maintenance Service carried out by highly qualified **NUTEC** personnel, with extensive experience in installing fiber modules for high temperatures and Macromodules in industrial kilns, has three main advantages:



**Savings in operating costs, thanks to a significant decrease in gas consumption during the firing process.**



**Reducing gas use has a direct positive impact on carbon footprint, making processes more sustainable.**



**The guarantee of operating highly efficient kilns that allow the manufacturer to continue offering its customers quality ceramic components.**

## Conclusion.

The quality of **NUTEC** products and services generates a value chain that has a positive impact not only on our clients' processes, but also for the benefit of millions of end consumers.

Our widely experienced team of engineers is responsible for designing optimal solutions, appropriate to the needs of each business. That is why **NUTEC** maintains long-term business relationships with large companies, offering the best service and competitive prices.