

UNIFRAX APPLICATION STORY



Product Solutions: Silplate Mass 1500
Industry: Ferrous
Applications: Reheat Furnace - Repair to walls
Location: Brazil

NOVEMBER 2018

Business Challenge

In steel plants reheating furnaces are used in hot rolling mills to heat the steel stock (Billets, blooms or slabs) to temperatures of around 1200 °C which is suitable for plastic deformation of steel and changes its properties for subsequently for rolling in the mill.

The Reheat Furnace is located at one of the production sites of a major steel producer. This furnace is used for reheating steel ingots 200mm x 200mm square section. It has an output of approximately 80 tonnes per hour.

The original refractory lining to the furnace walls was a 70% Al₂O₃ based plastic mass. After 6 months of operation several cracks within the hot face of the lining appeared. In some areas the hot face of the refractory lining had become detached.

Application

This breakdown of the refractory lining caused major furnace operating and efficiency problems for the furnace operator. They were looking for a lining repair system as a more cost effective solution than a costly shutdown, wreck out and furnace re-line. All affecting production output at a critical time for the plant in question.

“the first significant advantage was a 60 °C reduction in the casing cold face temperature”



Internal view—no loss of Silplate Mass 1500 since December 2014

Solution

Unifrax offered a system that could be easily installed and would offer immediate benefits upon completion of the installation - Silplate Mass 1500, a ready mixed mastic type coating.

Silplate Mass 1500 was successfully applied using a trowel to fill any gaps or cracks within the refractory lining of the walls of the furnace. Finally a 10mm thick coating of Silplate Mass 1500 was applied over the lining surface.

This application required the installation of approximately 2000 kg. of Silplate Mass 1500.

The furnace was put back into service as quickly as possible. Various benefits were realised immediately.

During furnace operation after the Silplate Mass 1500 installation the first significant advantage was a 60 °C reduction in the casing cold face temperature. This can be converted to a reduction in heat loss and a saving in energy consumption for furnace operation.

The Silplate Mass 1500 repair solution has been in place since December 2014. There has been no loss of the mastic coating and it has not required any maintenance during its service life.

Customer Advantages

A summary of the advantages and benefits that were obtained by this unique repair solution can be summarised as follows.

- Ready to use - premixed
- Fast, easy installation
- Reduction of the casing cold face temperature
- Elimination of gaps in the refractory lining of the walls - saving energy
- Sealing of gaps between the walls/roof and around burners
- Lining stability - successful performance (without failures) since installation
- Maintenance requirements to wall lining eradicated



Furnace walls after installation

About Unifrax

Unifrax is a global leader in high-performance specialty products used by many industries in a diverse group of industrial applications. Our products provide substantial improvement in thermal performance, save thousands of dollars in energy costs and can help reduce your operations environmental footprint.

Contact Us

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