



## Installation Story #3 FoamfraxJ Insulation

Industry: Steel  
Location: Midwest United States  
Installation Date: January 2001  
Operating Temperature: 2250°F (1232°C)  
Scope of Job: Continuous Roller Hearth Furnace  
3" (76mm), 8 PCF (128 kg/m<sup>3</sup>) Foamfrax Grade II Fiber Veneer  
Over Existing Module Lining



After six years of service, the ceramic fiber module lining in this unit had become severely fluxed and as a result, the lining system had sustained some mass loss. Due to this fluxing phenomena and shrinkage gaps in the lining, the furnace shell temperatures on this unit have gradually increased over time. The repair options considered to lower the furnace shell temperature were either full lining replacement or the addition of more insulation on the existing lining hotface. The Foamfrax Insulation System was chosen to upgrade this unit because it could be quickly installed in three to four furnace sections during the monthly one day maintenance shut down in the plant.



Prior to installation, the lining was thoroughly wet with water to minimize airborne fiber generation and loose material was removed from the hotface surface. For the removal of any after service refractory material, refer to the product MSDS for proper material handling guidelines. The glassy surface material that still maintained its physical integrity was kept in place. After this procedure, the lining was wet with water once more and a 3" (76mm) veneer of Foamfrax Grade II fiber was gunned onto the module surface.



The completed Foamfrax lining added insulation thickness to the existing lining and filled any shrinkage voids on the surface of the modules. Care was taken during installation to work around burner areas and the removable roll bungs. Once in service, a noticeable reduction in furnace coldface temperature was observed.



A veneer lining was also applied to the removable cover sections of this unit using the same installation guidelines as the sidewalls.



The removable cover was held in place using an overhead crane. The Foamfrax insulation was applied, and the cover was put back onto its respective furnace section.

With the installation of Foamfrax Grade II Insulation, the following customer benefits were realized:

- **Turnkey Installation**
  - A specially trained Unifrax distributor/contractor was able to supply materials, equipment, and installation as a complete package.
- **Fuel Efficiency**
  - The additional thickness of Foamfrax Insulation sealed all lining openings and added insulating value resulting in reduced furnace shell temperatures.
- **Extended Service Life**
  - The Foamfrax Insulation upgrade provided extended service life for the furnace lining and the customer avoided a complete lining reline and costly downtime.
- **Installation Speed**
  - Due to the quick installation of Foamfrax Insulation, 4 – 5 furnace sections were easily completed during the monthly 24 hour maintenance shutdown of this furnace.