



Installation Story #11 Foamfrax® Insulation

Industry: Chemical Process Industry (CPI)
Location: Gulf Coast, United States
Installation Date: November 2001
Operating Temperature: 2150°F (1176°C)
Scope of Job: Ethylene Furnace, Lummus Design,
56 John Zink Flat Flame Burners per Sidewall
Foamfrax Grade II Insulation 2" (50mm) Veneer Over Insulating
Firebrick Natural Gas Fired, Continuous Operation



The existing hard refractory furnace lining had been in service for over 20 years. Due to constant in-service temperature and periodic thermal cycling, refractory repairs were required during each furnace shutdown. Complete tear out and refractory replacement would involve a major capital investment and significant furnace down time.



Foamfrax Insulation was easily gunned over the existing hard refractory lining. The only surface preparation required is to remove all loose/unstable refractory and apply a surface coating of dilute Fiberstick™ Refractory Cement to the hard refractory substrate. The Foamfrax Insulation was easily troweled as required around burner locations, so as to not interfere with the flat flame burner pattern.



Foamfrax Insulation affords the benefit of adding additional insulation to areas traditionally difficult to insulate such as chimney support columns. With installation rates of 1000 board feet/hour, Foamfrax Insulation is quickly installed.



Foamfrax Insulation installs easily around burner locations, sight windows, and other furnace lining penetrations. The net result is an efficient ceramic fiber veneer to repair degraded refractory and increase furnace efficiency.

With the installation of a Foamfrax Insulation veneer, 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.
- **Increased Furnace Efficiency**
A furnace audit completed after installation showed that actual furnace shell temperature had decreased by 50°F. This translates into a potential energy savings of up to 33% due to the increased lining efficiency provided by the Foamfrax Insulation veneer.
- **Installation Speed**
The entire project from shutdown to start up was completed in less than 5 days, offering minimal downtime compared to other refractory repair alternatives of this magnitude.