



## Installation Story #12 Foamfrax® Insulation

Industry: Steel  
Location: Northeast United States  
Installation Date: August 2002  
Operating Temperature: 2150°F (1177°C)  
Scope of Job: Slab Reheat Furnace  
Foamfrax Insulation Full Thickness System  
9" (230mm) Foamfrax Grade II Fiber, 8 PCF (128 Kg/m<sup>3</sup>)



After complete tear-out of the existing ceramic fiber module lining, a new castable hearth/bench was poured and new burner blocks installed. For Foamfrax Insulation full thickness applications, adhesive backed plastic spider netting is installed against the furnace shell and “V” anchors welded in place through the netting. Fiberwall® Studs are installed on the roof to accept the “X” anchors as the Foamfrax Insulation is installed overhead.



Foamfrax Grade II Fiber was then gunned into the spider netting and around the anchors on the sidewalls. The impact velocity and homogeneous consistency of Foamfrax Insulation allow it to flow/work around the “V” anchors without leaving pockets/voids in the lining system. On the sidewalls, the Foamfrax Insulation is installed to the full 9” (230mm) thickness.



To form the transition at the arch/sidewall juncture, a piece of Fiberfrax® Durablanket® 2600, 8 PCF (128 Kg/m<sup>3</sup>), 1" (25mm) thick is installed 3" in from the lining hotface. This blanket section serves to reinforce the Foamfrax Insulation at the arch/sidewall juncture preventing cracks or gaps.



For installation of Foamfrax Insulation overhead, "X" anchors are installed at intermediate spacing throughout the lining thickness. Fiberwall Speed clips are used to secure the intermediate "X" anchors in place as well as Fiberwall washers for the final set of "X" anchors.



For full thickness applications, the hot face surface must be troweled. A low density (foamy) surface coating of Foamfrax Grade II Fiber was applied and the hotface troweled smooth.



To control surface cracking of the Foamfrax Insulation due to thermal shrinkage, score marks were made on an approximate 2' x 2' (610mm x 610mm) grid using a scoring tool. A masonry "groover" trowel similar to the type commonly used for concrete expansion joints works well for this procedure.



After the score marks were completed, the furnace was available for use. After the anchors had been welded in place, actual installation of this 1300 board foot application took less than four hours to complete, compared to approximately 3 days for module installation.

With the installation of a Foamfrax Insulation Full Thickness Lining System, 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.
- **Monolithic System**  
A Foamfrax Insulation Full Thickness Lining System provides the customer a ceramic fiber lining system without joints and with all the inherent ceramic fiber thermal properties such as low heat loss and low heat storage.
- **Installation Speed**  
The actual Foamfrax Installation took less than 2 day and the furnace was available for immediate service.
- **Universal Compatibility**  
This Foamfrax Insulation was installed in an existing furnace lining where the product was mated to hard refractory surfaces. Foamfrax Insulation provides universal compatibility with a wide range of existing refractory materials.