



Installation Story #18 Foamfrax® Insulation

Industry: Ceramic
Location: England
Installation Date: July 2002
Operating Temperature: 2200°F (1204°C)
Scope of Job: Batch Carbottom Furnace
12" (305mm) Foamfrax Grade II Full Thickness Installation



The roof construction of this furnace consisted of pre-cast refractory sections, which were suspended from the furnace structural steel. Due to thermal cycling, the refractory sections required continual maintenance or complete replacement. Because of the low density and superior thermal efficiency, Foamfrax Insulation was installed as a trial in a roof section which had fallen.



A steel plate with an X anchor arrangement was placed over the existing hole in the furnace roof. To provide initial adhesion to the steel, Fiberstick™ Refractory Cement was brushed onto the steel surface.
(Note: The full thickness lining technique recommended by Unifrax features plastic “spider” netting bonded to the furnace casing, and sets of independent “X” anchors installed over the fiberwall studs as the lining thickness is built up.)



Foamfrax Grade II Fiber was then gunned against the steel plate and around the X anchor system, building the lining out to its full thickness of 12" (300mm).



To cover the Foamfrax/refractory juncture, Foamfrax Insulation was overlaid 2" - 3" (50mm - 76mm) onto the adjacent hard refractory. To complete the installation, a foamy/low density layer of Foamfrax Insulation was applied to the lining hotface and the Foamfrax Insulation was troweled smooth. To control cracking, score marks were placed in the Foamfrax Insulation on approximate 2' x 2' (610mm x 6'0mm) centers.

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

- **Turnkey Service**
 - A specially trained Unifrax distributor contractor was able to supply materials, equipment, and installation as a complete package.
- **Fuel Efficiency**
 - The full thickness installation of Foamfrax Insulation served to lower heat loss and heat storage thereby decreasing the coldface temperature of the furnace by 30%.
- **Installation Speed**
 - The entire Foamfrax installation was completed in less than one shift, resulting in reduced unit downtime and increased productivity.

Upon completion, the furnace could be immediately fired since Foamfrax Insulation requires no critical cure out cycle.