



Foamfrax™ High Temperature Insulation Installation Case Study #18

High Temperature Insulation For Batch CarBottom Furnace Roof

*Foamfrax Grade II High Temperature Insulation
12" (305mm) Thick, 8pcf (128 kg/m³), Full Thickness Refractory Ceramic Fiber High
Temperature Insulation Lining*

Industry: Ceramic Processing
Location: England
Installation Date: July 2002
Operating Temperature: 2200°F (1204°C)

More Information

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The original roof construction of this Batch 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 its low density and superior thermal efficiency, Foamfrax High Temperature Insulation was installed on trial to replace a roof section which had fallen in.

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www.fyrewrap.com

www.fiberfrax.com

www.isofrax.com

www.insulfrax.com

www.high-temperature-insulation.com

www.refractory-ceramic-fiber.com



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 High Temperature Insulation 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 High Temperature Insulation was overlaid 2-3” (50-76mm) onto the adjacent hard refractory.

To complete the installation, a foamy/low density layer of Foamfrax Insulation mix was applied to the lining hotface, and the Foamfrax High Temperature Insulation was troweled smooth.

To control cracking, score marks were placed in the Foamfrax High Temperature Insulation, on approximate 2’ x 2’ (610mm x 610mm) centers.



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

Following the installation of Foamfrax Grade II High Temperature Insulation, the following customer benefits were realized:

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

Foamfrax High Temperature Insulation is an advanced gunnable monolithic insulation system comprised primarily of **Fiberfrax** refractory ceramic fiber. There are several Foamfrax grades available, suitable for application under various conditions and temperatures.

Isofoam High Temperature Insulation is a similar product, comprised primarily of revolutionary **Isofrax** soluble fiber – to meet European Health & Safety regulations for in-vitro solubility of vitreous fibers. Both advanced high temperature insulation materials are installed in the same manner.

For more information on **Unifrax** advanced foam high temperature insulation systems visit www.foamfrax.com or contact Unifrax I, LLC directly by e-mail: Foamfrax@unifrax.com

Foamfrax™ High Temperature Insulation is a registered product of Unifrax I, LLC

Unifrax I, LLC provides a wide range of woven and non-woven products for high temperature insulation, sealing and filtering applications

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