



Installation Story #24 Foamfrax® Insulation

Industry:	Power
Location:	Northeast United States
Installation Date:	November 2002
Operating Temperature:	1800°F (982°C)
Scope of Job:	Steam Boiler Tube Wall Exterior Foamfrax Grade I Insulation, 3"-4" Thick



Coal- and oil-fired boilers produce steam to generate electricity for heat or for process use. They are typically very large structures with hard refractory lined interiors and exterior insulation on the boiler tube walls. The exterior insulation typically consists of blanket or board materials cut to fit against the tube wall.



This particular boiler design utilized cast-iron “Bailey Blocks” to secure the tubes and anchor the internal refractory tiles. If left uninsulated on the exterior, this type of boiler design is thermally inefficient.



Since it was a sidewall application and a very irregular surface, the Foamfrax Grade I Insulation was gunned directly against the boiler tubes and Bailey Blocks. No anchoring and/or surface preparation was used in this application. The Foamfrax Insulation formed a monolithic system to seal the boiler tube walls. Note that this installation was completed during a power plant shutdown. For complete adhesion of the Foamfrax, the substrate temperature must be below 212°F.



Once installed, the Foamfrax Insulation was troweled smooth. Corrugated aluminum jacketing was then placed over the insulated tube wall.



After the installation was completed, the net result was a monolithic high-temperature insulation system which effectively sealed the boiler tubewall.

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.
- **Boiler Efficiency**
 - The full-thickness insulation of Foamfrax Insulation served to lower heat loss through the boiler tube wall. The net result is a more efficient boiler.
 - In addition to the thermal performance of the Foamfrax material, the installation technique filled all voids and openings in the existing wall structure, eliminating air infiltration, and conforming perfectly to the surface.
- **Installation Speed**
 - A Foamfrax Insulation installation of this nature takes approximately 30% of the time compared to traditional methods. The customer benefit is reduced unit downtime and increased productivity.
 - Upon completion, the boiler could be immediately put back on line since Foamfrax Insulation requires no critical cure out cycle.