

Hydrocarbon and Chemical Processing

Project Name: Ethylene Furnace

Location: Port Arthur, Texas

Furnace Information

Furnace Type: Ethylene Cracker

Fuel Type: Natural Gas

Substrate: IFB and Z-Blok® Modules

Operating Temp: 2100 °F (1149°C)

Background: The Emisshield® Products were applied to the ethylene cracker in June of 2005. The customer wanted to evaluate the energy savings associated with the application of the Products.

Application Information

Other work performed at the same time as the installation of the Emisshield® Products included new IFB in the lower radiant walls, new Z-Blok® modules throughout the remainder of the firebox, new radiant tubes, new low NO_x burners, cleaned convection section tubes, and the installation of new Hot Seal™ Penetration Seals.

Emisshield® Benefits

- Fuel Savings of 12%
- Estimated annual savings - \$1.47 MM
- Shrinkage reduction on the Z-Blok® (Ceramic Fiber)

Shrinkage Comparison between Emisshield® coated and uncoated Ceramic Fiber



Figure 1 – Emisshield® coated Z-Blok® before start up.



Figure 2 – Emisshield® coated Z-Blok® after 3 months in service.



Figure 3 – Uncoated Z-Blok® after 3 months in service.