CASE HISTORY

Emisshield® Application

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 Ceramic Fiber Modules

Operating Temp: 2100 °F (1149°C)

Background: The Emisshield® Products, two different types, were applied to the ethylene cracker in June of 2005. The customer wanted to evaluate Emisshield's impact on energy savings only with the associated production increase. No process tubes were coated. Production increases cannot be released due to "confidential" information.

Application Information

Other work performed with the installation of the Emisshield® Products included some new ceramic fiber modules in some areas of the firebox along with some process tubes and new low NO_x burners.

Emisshield® Benefits Reported by Owner:

- **Fuel Savings of 12%**
- **Estimated annual savings - $1.5 MM with ROI of 3 months.**
- **Shrinkage reduction on the Ceramic Fiber to less than 1% versus normal shrinkage of 5 to 7%. Downtime reduced by 2-3X.**
- **Exterior temperature of unit reduced by > 150°F**

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.

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