

Reduce Coking in Process Tubes

Problem: Coke formation that causes frequent shutdowns and maintenance for decoking in HPI/CPI.

Solution: Coat process tubes and refractory with Emisshield® coating technology to increase thermal flux, combustion efficiency, and reduce hot spots on tubes.

Coking Reduction Data:

Location: Multiple U.S. and International Sites
Application Dates: First Project in 2007; orders have continued through 2014 from multiple plants.
Third Party Data: Data collected by Formosa Plastics as part of Six Sigma Analysis and a separate Fortune 500 company covered by confidentiality agreement

Initial Project Specifications:

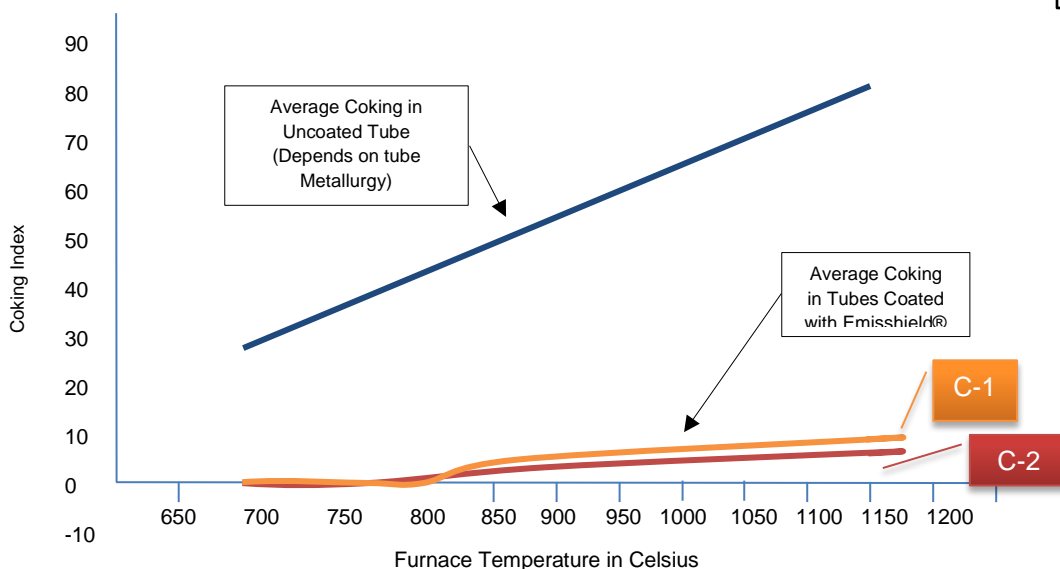
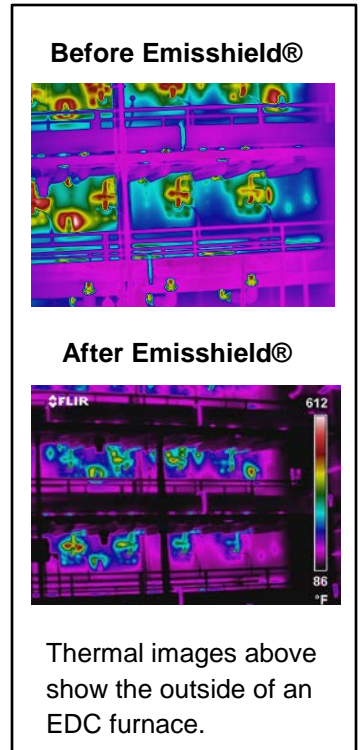
Location: Baton Rouge, Louisiana
Application Date: November 2007
Third Party Data: Six Sigma Analysis and Presentation
Furnace Information: EDC Cracking Furnace - PetroChem

Application Information:

Emisshield® was applied to Incoloy process tubes (serpentine) and also to the hard refractory sidewalls and ceramic fiber roof of the furnace.

Coke Reduction Benefits:

Emisshield® improved the uniform heating of the tubes which reduced hot spots and non-uniform heat flux. The amount of coke that formed was significantly less and more granular and thus easy to remove. The time between decoking cycles more than doubled from 9 months with NO Emisshield® to 25 months with Emisshield®!



Above shows third party data to determine Coking Index and confirmed that Emisshield® dramatically reduces coking in process tubes.