

Weartech® SHS™ Thermal Spray Coating on Boiler Tubes

Provides Superior Erosion and Corrosion Resistance



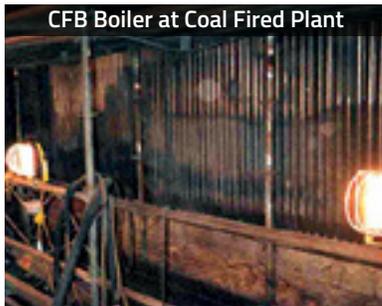
PROBLEM: **EROSION AND CORROSION**

Waste coal is a low energy value discard that has accumulated for more than a century at anthracite and bituminous coal mines in the Northeast USA. Since the early 1990s, coal fired power plants near these mines have been configured to burn this inexpensive fuel source in circulating fluidized bed (CFB) combustion boilers.

For every 100 tons of waste coal burned, more than 60 tons of fly ash, containing chemicals such as mercury and sulfur, is produced along with emissions containing very fine nitrogen oxide particles. Plant operators feed limestone into the combustor to control the chemicals and introduce ammonia to reduce nitrogen oxide emissions. The result is erosion and corrosion damage that causes boiler tube failures and costly unscheduled outages.

**SOLUTION:
WEARTECH SHS THERMAL SPRAY COATING**

Inside a CFB boiler at a coal fired power plant in Pennsylvania, a thermal spray coating field trial comparison was conducted on a section of boiler tubes where the most severe erosion damage occurs. Wearthech® SHS™7170 WTWAS was applied to a 7 x 5 ft. (2.1 x 1.5 m) section of boiler tubes between two LMC Armacor™ thermal spray coatings of equal size.



Field trial conducted on boiler tube section where most severe erosion damage occurs.



Competitors coating shows damage from erosion requiring repair.



Wearthech SHS7170 WTWAS coating shows no erosion or corrosion damage.

**RESULT:
WEARTECH SHS COATING OUTPERFORMS
COMPETITOR COATINGS**

When the boiler tubes were inspected during a scheduled outage after 9 months of service, the Wearthech SHS7170 WTWAS coating did not show any signs of erosion or corrosion damage while competitor coatings showed erosion damage requiring repair.