

### Metal Production

**Project Name:** Intermittent Heat Treat Furnace

**Location:** Confidential per Customer

#### Furnace Information

**Substrate:** The sidewalls and hearth were mostly insulating firebrick with some refractory plastic repairs having been made. The crown was refractory ceramic fiber.

**Operating Temp:** 2230°F (1221°C)

**Background:** This was a relatively small commercial heat treating furnace used to heat high alloy castings to a maximum temperature of 2230°F. This furnace was highly monitored and complete baseline performance data were available. At the time the coating was applied, all refractory substrates had seen extensive service.

#### Application Information

All broken pieces of refractory were removed and two baffle tiles were replaced. The remainder of the walls and hearth were vacuumed to remove construction dust, but no cracks or spalls were repaired. The fiber crown was vacuumed to remove broken fibers and dust. Emisshield® was applied to the walls and crown however the hearth was not coated. This application was completed in July 2003.

#### Emisshield® Benefits

After three months service, the furnace operator reported:

- Fuel savings of 15%
- Burner Cycling dropped from 25 to 30% active to 5 – 10%
- Increase in top temperature Recovery – 30%
- Production Increase – 1 to 2 additional heats per day
- Decrease in shell temperature – difference of 30°F



Emisshield®  
Coated Furnace