

## Metal Production

**Project Name:** Deltas  
**Location:** Muscatine, IA

### Furnace Information

**Delta Type:** Pre-Cast Electric Furnace Delta  
**Substrate:** Pre-cast, bauxite-based, ultra-low cement bonded deltas  
**Operating Temp:** 2850 - 3000°F (1566 - 1649°C)  
**Background:** This customer was experiencing unusually low service life of pre-cast, bauxite-based, ultra-low cement bonded deltas

### Application Information

Emisshield® was applied to the hot face and to the electrode ports of pre-cast deltas manufactured from the silica-free castable. This application was completed in April 2004.

### Emisshield® Benefits

The set of coated trial deltas averaged 172 heats, more than twice the service of uncoated deltas.

The Emisshield® coating prevented the delta surface from being exposed to extreme temperatures early in the campaign. This prevented cracking due to thermal shock and allowed the delta to sinter and build strength during sustained service. Extended service life resulted.



Pre-cast delta coated with Emisshield® after approximately 2/3 of its service life. The delta was put back into service, where it provided over 100 additional heats.