

ArchiTech™ Furnace Productivity System

Maximizing the Performance of Electric Arc Furnaces

System Features

With the ArchiTech™ system, EAF operators can:

- Evaluate and trend electrode consumption by phase.
- Maximize energy input by determining effectiveness of power profile.
- Determine electrical balance and solve arc flare problems.
- Enhance foamy slag practice.
- Trend more than 75 furnace parameters – including those affecting electrode consumption.

Benefits

- Hi-Tech EAF diagnostics & analysis.
- Continuous, remote service connection.
- Enables optimum furnace productivity.
- Expert diagnostics with or without a dedicated PC.
- Comprehensive reporting.
- Email alert notification.



“Through ArchiTech’s™ email alert feature, we became aware of an electrical imbalance that was affecting our productivity. After some investigative work we learned the imbalance was related to a bad regulator reference. Without ArchiTech we could have operated for weeks before realizing the cable needed replaced.”

– Randolph Harris, Evraz Claymont Delaware U.S.A.

Applications

The Furnace

- 200 ton LMF
- 33 MVA XFMR
- 18" x 96" Electrodes

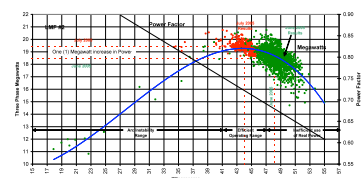
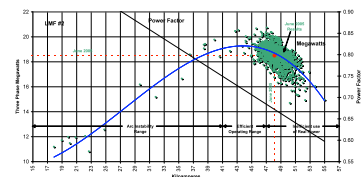
The Situation

- Inadequate temperature pickup

How can we improve temperature pickup?

Electrode currents were too high resulting in an inefficient use of real power and poor temperature pickup.

Electrode currents were reduced by 4 KA resulting in an increase in Megawatt input and an improvement in temperature pickup from 5 deg/min to 7 deg/min.



The Furnace

- 100 ton EAF
- 75 MVA XFMR
- 24" x 110" Electrodes

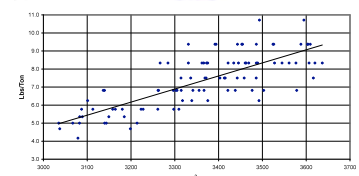
The Situation

- High electrode consumption

How do you explain variations in electrode consumption?

Electrode consumption was reduced by 10%.

I^2T is the product of average electrode current and power on time and is proportional to electrode tip sublimation (*i.e. The higher I^2T the higher electrode consumption*).



Applications *(continued)*

The Furnace

- 55 ton EAF
- 39 MVA XFMR
- 18" x 96" Electrodes

The Situation

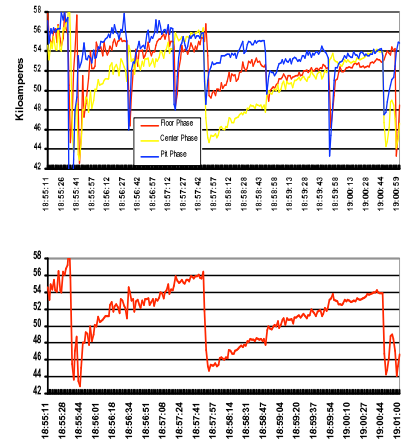
- Regulator could not maintain set-point

How do you pinpoint regulation problems?

Electrode drift significantly increases the amount of time required to clear scrap caves making electrodes more susceptible to breakage. It also results in a lower power input and increased refractory wear.

Electrode Drift results in:

- Low Electrical Load Factor
- Increased Electrode Breakage
- Excessive Current Swings
- Increased Refractory Wear



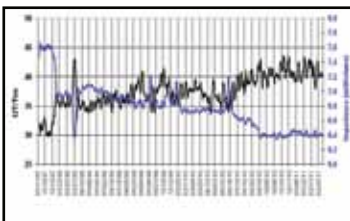
GrafTech's Customer Technical Service Is The Difference!

Our CTS group, the largest team in the world, is on your furnace when you need us to interpret and analyze data to help and assist you to achieve the results you require. Our team of experts work together to solve the steelshop issues you bring to us: with our combined experience and knowledge we can utilize state-of-the-art tools like the ArchiTech™ System to keep you up and running, GrafTech continues to provide global technical service leadership through innovative state-of-the-art programs and value added services like the ArchiTech™ System. Our expertise in analyzing furnace and electrode performance helps steelmakers to maximize their productivity.

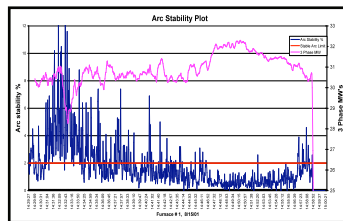
Your Bottom Line is OUR bottom line!



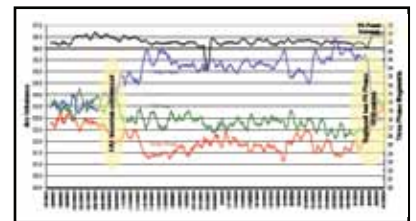
Software



Historical Trending



Arc Stability



Data Analysis

Custom reports available upon request ask your local representative for more information.

For additional information, contact the GrafTech sales office:
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Or visit our website: www.graftech.com

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