

## OXY-FUEL ADVANCED BURNER TECHNOLOGY



**PYROX<sup>TM</sup>**  
*for the Metals Industry*

### **Electric Arc Furnaces**

- Side-wall and sump installations
- Scrap preheating and cutting

### **Non-Ferrous Industry**







- Lead smelters
- Aluminium secondary smelters
- Copper and Brass smelters
- Available for Reverb (end-wall and side-wall burners), Rotary, Shaft Furnaces

### **Ladle heaters**

- Vertical and horizontal units
- Ferrous and non-ferrous applications

 **Patented technology by**  **American Combustion**

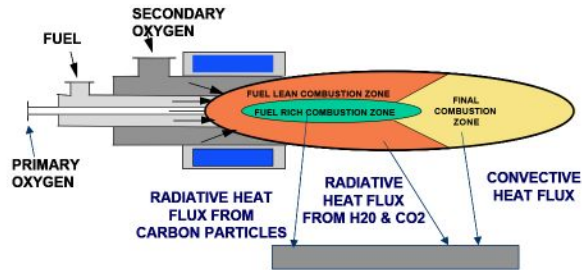
## Main advantages of this technology

-  Increase Furnace Production
-  Increase melting rate up to 50 %
-  Decrease total energy cost
-  Improve Metallic yield
-  Extend Refractory life
-  Optimize oxygen usage

## PYROX™ Flame Pattern Structure

### PYROX™ Technology

American Combustion (ACI) put forward and patented an innovative approach to high temperature combustion process in industrial furnaces.



### PYROX™ : Method of Combustion

For standard PYROX™ applications, the fuel is oxidized with **two flows of oxygen** via **one single flow control line**. The combustion is staged and occurs within three zones: central, peripheral and final zones of combustion.

- **Primary fuel rich zone**  
This inner zone generates carbon particles, providing an intensive radiant heat transfer.
- **Secondary fuel lean zone**  
This outer zone has high velocity excess oxidizer.
- **Final zone**  
Where complete fuel oxidation takes place.

### Characteristics of PYROX™ technology

- **Efficiency:** Highly luminous flame dramatically increases heat transfer efficiency to the load
- **Robust Concept:** PYROX™ is an industry-proven design, showing extended longevity together with low maintenance requirements
- **NO<sub>x</sub>:** Low amount of NO<sub>x</sub> due to:
  1. Staged combustion.
  2. Multiple, high velocity jets (perfect mixing and reduced residence time)
  3. Independently control of the oxygen / air ratio
- **Power Range :** from 1.5 MW up to 4.5 MW



Typical PYROX™ flame in Electric Arc Furnace



PYROX™ nozzle – Front view