



BoostAL™ for Non-Ferrous

Looking to:

- Bring down atmospheric emissions?
- Reduce your carbon footprint?
- Increase your production rate?

Ten non-ferrous metals are running short in natural resources: copper, aluminum, lead, zinc, nickel, tin, antimony, mercury, magnesium and titanium). This drives the recycling of scrap metal which is less energy intensive than primary metal production. Scraps with different levels of contamination in terms of Volatile Organic Compounds (VOC) are typically melted in reverberatory and rotary kilns equipped with regenerative burners to reduce energy consumption by preheating combustion air. Air combustion generates atmospheric emissions that won't meet the environmental target of carbon neutrality by 2050.

We offer an oxy-fuel technology that consists of injecting pure oxygen instead of air into the charge to be melted. Oxy-fuel burners improve heat transfer efficiency, which accelerates the melting operation and increases productivity. With no nitrogen, the volume of combustion oxygen is less than that of the combustion air. This reduces the energy requirement and, consequently, NOx and CO₂ emissions.

BoostAL™ for Non-Ferrous provides you with a well-suited and eco-responsible alternative to regenerative air burners.

Applicable Industries

Primary smelting of non-ferrous metals
Foundries and secondary smelting and refining

Environmental Benefits

- Up to 90% NOx emission reduction.
- Up to 50% CO₂ emission reduction.
- Up to 50% fuel saving.

Operational Benefits

- Increase of production rate up to 50%.
- CapEx reduction for flue gas treatment with a volume to be treated divided by 5.
- Higher recycled metal yield.

Aluminium Case Study

13-tonne rotary furnace

Customer Requirement

Reducing carbon footprint and increasing production rate.

Solution

Oxygen combustion with oxy-fuel burner (3MW)

Benefits

50% less CO₂ emission



190 kg/t-> 95 kg/t

50% energy savings



1000 kWh/t -> 500 kWh/t

50% production rate increase



2.5 t/h -> 3.75 t/h

What We Offer:

- **Low-Carbon Oxygen Supply** in liquid storage.
- **Combustion equipment**

The **FLAMOXAL-B** is an automated valve train for controlling oxy-fuel burners and their gas supply.

OXYGEN INJECTION EQUIPMENT

- The **METAL BURNER, METAL BURNER-FC and ALJET ST** are oxy-gas or oil burners particularly dedicated to smelting where a wide flame, an automatic ignition system and/or a flame control are essential.
- The **METAL BURNER** is a non-water-cooled oxy-fuel burner especially designed for batch smelting furnaces. It produces a low momentum flame which minimizes particle emission and prevents any refractory aging. The system is based on a "pipe-in-pipe" design that generates a symmetrical flame.
- The **METAL BURNER-FC** is a version of the METAL BURNER in which fuel and oxygen are introduced into the melting zone of a glass furnace through a unique configuration of injectors. The fuel is distributed at the bottom of the refractory burner block via three fuel gas injectors that are positioned in a fan-shaped configuration. It produces a highly luminous flame up to three times wider than conventional oxy-fuel burners.

- The **ALJET ST** is a non-water-cooled oxy-fuel burner especially designed for batch smelting furnaces. The configuration of **ALJET ST** is of pipe-in-pipe type. The fuel pipe is located inside the oxygen pipe. As fuel and oxygen are mixed inside the burner block, they react immediately. The combustion is very intense, resulting in a high peak temperature flame, with a symmetric luminous flame of cylindrical shape.

All burners are Air Liquide patented.

• Expertise

Based on your specifications, our experts design the best BoostAL™ for Non-Ferrous technology.

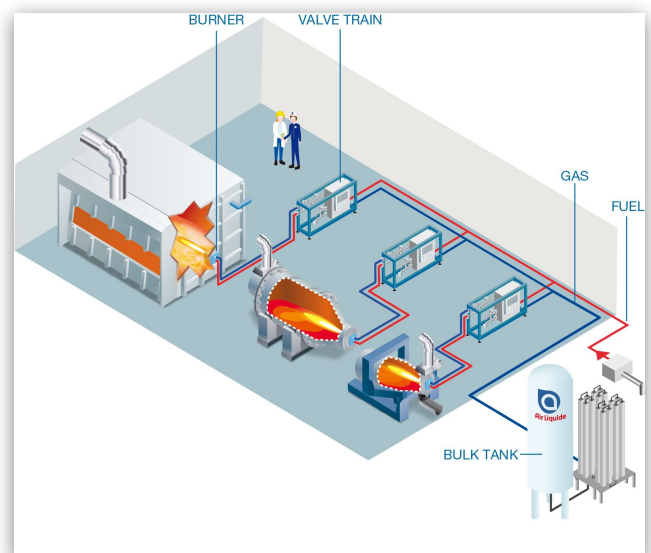
They provide you with full support all along your project:

- from the preliminary and detailed design of the suitable oxy-fuel solution to your project;
- the installation, start-up and commissioning of combustion equipment;
- and for the optimization of operating process parameters.

Our experts are also available to help you with your risk analysis if necessary.

Related Offers

- BoostAL™ Control for Non-Ferrous Melting
- BoostAL™ for Ladle Heating



Process Diagram of BoostAL™ for Non-Ferrous