METAL FIBER BURNERS AND APPLICATIONS IN FOUNDRY

THE PROCESS :

The surface combustion of gas is a combustion technique in which a premix of gas and air burns at the surface of a permeable support. In our case, the permeable support consists of an assembly of metal fibers.

The metal fiber support is the most important part of the burner. In addition to this support, the burner comprises a housing, a premix inlet and a distribution system that ensures homogeneous combustion over the entire surface.

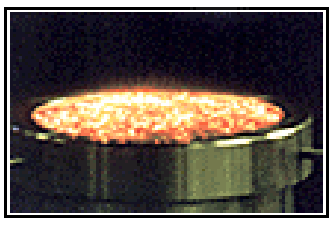
The fibers used for all these materials are made of Fecralloy (Fe, Cr, Al, Y, etc.). This fire resistant steel was selected on the basis of its excellent resistance to corrosion at temperatures above 1000 ° C.

BENEFITS OF THIS TECHNOLOGY:

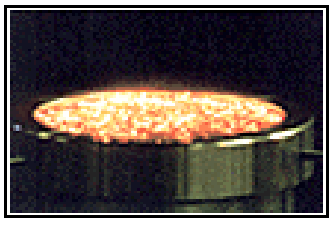
- The surface burner makes it possible to develop the heating surface on a defined shape (cylinder, cone, flat surface, etc.)
- A wide range of combustion power rate (up to 1-10)
- A homogeneous combustion on the surface, which makes it possible to obtain:
    - A uniform temperature so a very homogeneous heating
    - Low pollutant emissions

This type of burner has a power range of 100 to 10,000 kW / m^2. It can operate in two modes:

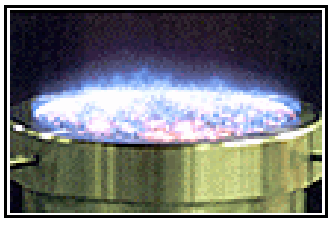
- Infrared mode (100 to 500 kW / m^2): The combustion takes place within the support itself. The support material is incandescent and releases a portion of the energy in the form of thermal radiation. The color of the flame is red / orange.
- Blue flame mode (500 to 10000 kW / m^2): The blue flames are detached from the support and release most of the energy in convective form



100 kW/m²



500 kW/m²



600 kW/m²

2000 kW/m²

THE ADVANTAGES OF METAL FIBER BURNER IN FOUNDRY

This technology is particularly suitable for foundry applications, especially for:

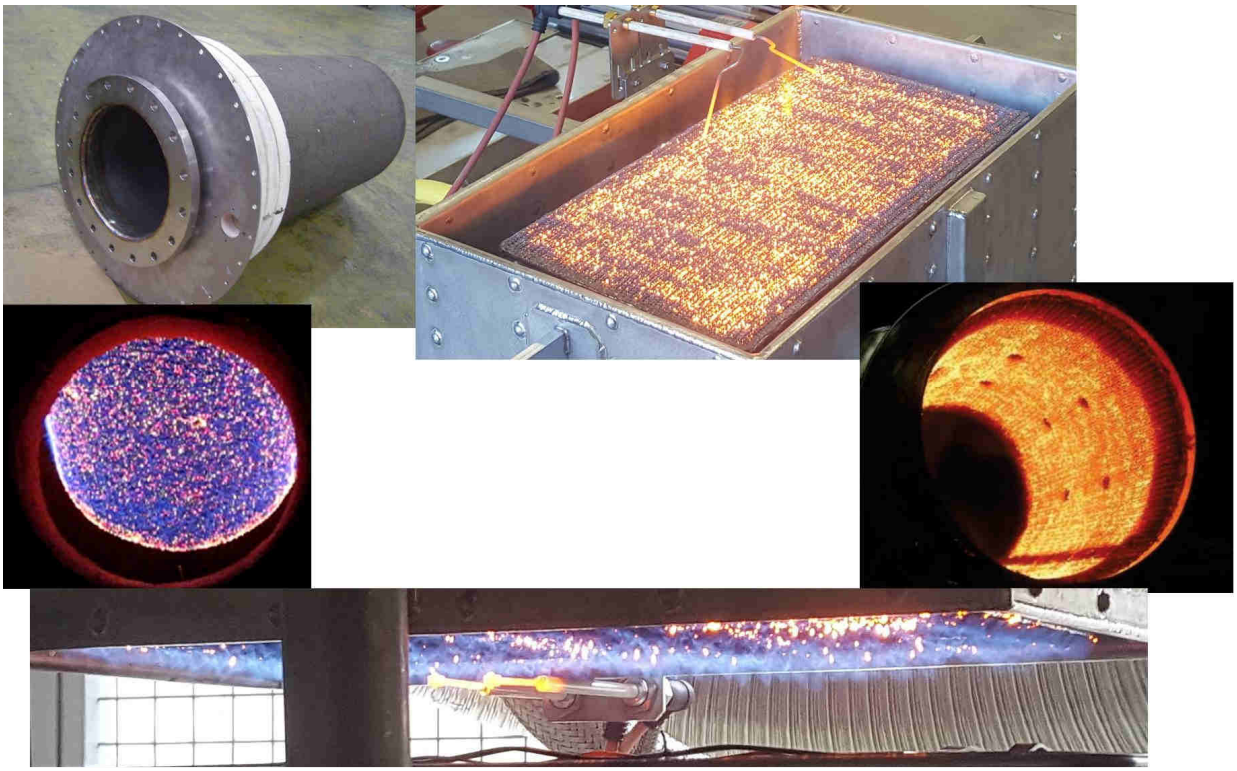
- Preheating of molds
- Thermal treatment
- Heating of metallic parts

Thanks to a high exchange by radiation, and higher efficiency than conventional flame burners (up to 40% of the fuel power), it is preferable for:

- Homogeneous heating temperatures
- Energy saving compared to conventional flame burners
- The possibility of reusing some off-gas foundry

PROSSERGY OFFER:

- Engineering and sizing of surface burners
- Supply of complete combustion and heating systems
- Commissioning



PROSSERGY

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