

# Metal Fibre Burner Technology in powder coating lines

## Summary

Numerous industrial infrared furnaces are used to melt the powder in a coating line prior to the convection baking of the coating. These furnaces are equipped with infrared radiating gas burners based on ceramic tiles. ERATEC now introduces Metal Fibre Burner Technology.

## The process

After degreasing and drying, the powder coating is put on to the parts. In order to reduce losses of powder in the convection baking part of the furnace, the powder is first melted in an infrared section.

These infrared sections are equipped with a number of infrared radiating gas burners based on ceramic tiles.

## The problem

These ceramic tiles however have a very limited durability due to the lack of resistance against thermal and mechanical shocks. The burners are easily obstructed by powder in the air which increases the pressure drop over the burner and reduces the life time. Therefore on a regular basis these tiles are replaced. Problems also arise when the speed of the line has to be increased. The power output of the burners is limited. Also for bigger or smaller parts, the power output can not easily be adapted due to the lack of modulation capability.

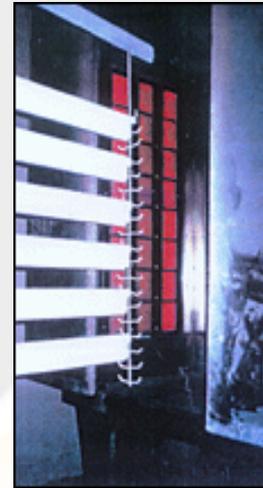
## Problems of the current situation

- Very limited modulation capability
- Limited power output
- Limited shape versatility
- Poor durability
- High maintenance cost

## A leading company introduces Metal Fibre Burner technology

Eratec now introduces its power burner based on Metal

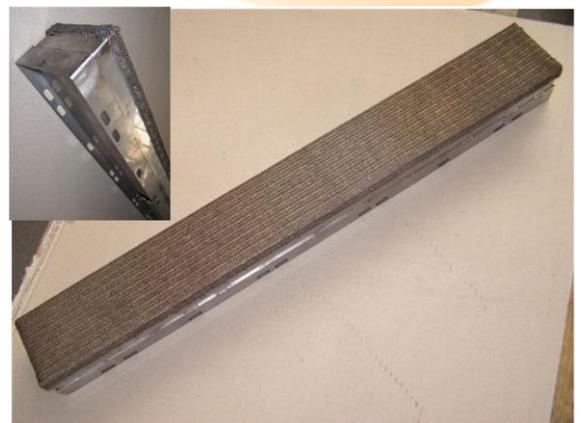
Fibre Burner Technology.



Picture no. 1: Powder coating line with infrared melting section

## The Metal Fibre Burner

A typical ceramic tile burner is 800 mm long and 100 mm wide with a number of tiles and a typical power output of about 10 kW. The Metal Fibre Burner can have the same dimensions and has the same functionality (pressure drop, power output, gas consumption, infrared efficiency). But will have a far bigger modulation band e.g. 8 to 40 kW for the 800 x 100 mm element.



Picture no. 2: View of the circular Metal Fibre Burner with normalised mounting flange



## Main advantages

The Metal Fibre Burners can be used to retrofit the existing ceramic tile burners or can be designed on specific customer demand. When retrofitting, the furnace does not need to be adjusted again.

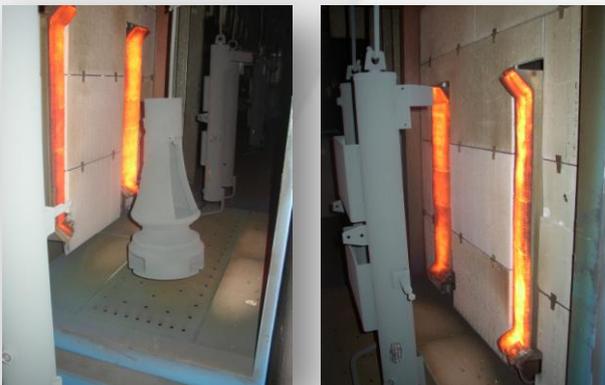
The Metal Fibre Burners have an extremely high durability, herewith drastically reducing maintenance costs and have no risk of obstructing with the powder. When designing new furnaces, the use of Metal Fibre Burners reduces the needed number of burners and herewith the investment.



Picture no. 3: Tests with burners for determination of power output and radiant efficiency.

## Advantages of the Metal Fibre Burner Technology

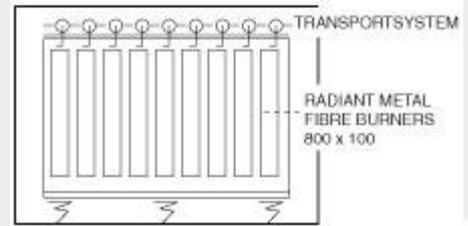
- No maintenance needed
- High power output
- High modulation capability
- Absolute shape versatility
- High durability



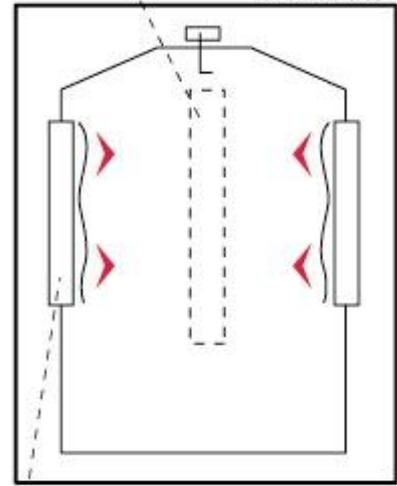
Pictures no. 4: View of the MFB in the infrared section of furnace

## IR POWDER COATING

### INSIDE THE FURNACE

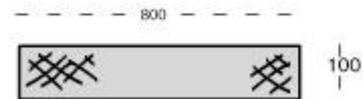


### PRODUCT FRONTAL VIEW OF FURNACE

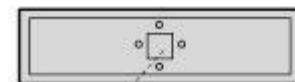
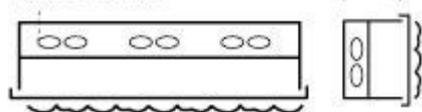


### IR METAL FIBRE BURNERS

#### BURNER



#### FIXING POINTS



#### CONNECTION FEEDING DUCT FOR AIR & GAS



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