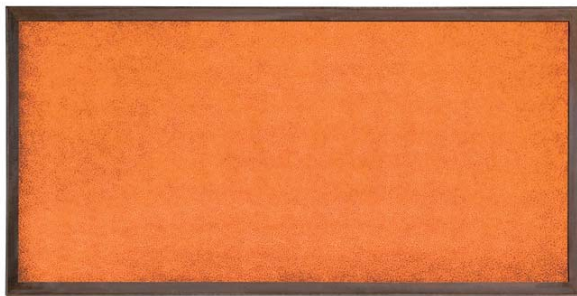


# MetFlame™ PB10

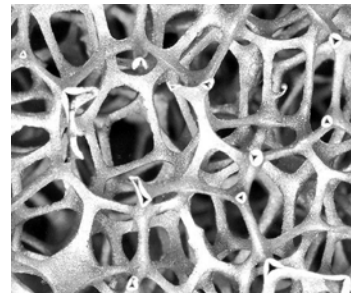
Infrared **P**ower **B**urner Emitter

***MetFlame™ is a Metal Foam Flame Stabilizer / Infrared Emitter from Porvair Advanced Materials, Inc. (ISO 9000:2000 and ISO 14001 certified)***

At the heart of the new PB10 infrared emitter is the **MetFlame™** Metal Foam Media from **Porvair Advanced Materials** ([www.porvairmetalfoam.com](http://www.porvairmetalfoam.com)). This unique material supports temperatures up to 1150° C (2100° F) and generates an exceptionally high infrared radiant energy output.



**Uniform MetFlame™ Metal Foam**



**Close-up of Foam Cells**

The **MetFlame™** Metal Foam Media consists of a rigid metallic mass of micro pores, uniformly distributed throughout the 10 mm thick media. **MetFlame™** material properties are maintained by **Porvair Advanced Materials** ISO 9000:2000 and ISO 14001 certified quality systems.

This new technology offers a combination of advantages that is unmatched by any other infrared emitter technology currently on the market:

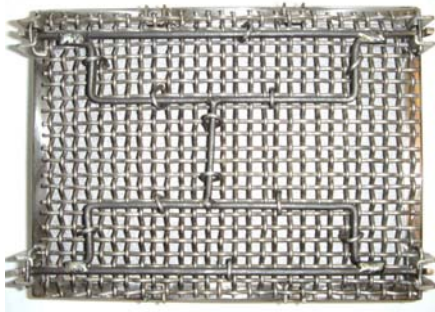
- **Energy Input of more than 550 kW/m<sup>2</sup> (175,000 btu/h/ft<sup>2</sup>)**
- **Unsurpassed radiant conversion efficiency = highest radiant energy density**
- **Extremely uniform temperature distribution**
- **Lowest NO<sub>x</sub> and CO emissions**
- **Superior life of the material**
- **Impervious to thermal shock**
- **Very rapid heat-up and cool-down**

The alloys selected to create the **MetFlame™** Metal Foam Media are special high temperature alloys, which have been optimized for this specific application. The short flame front remains just beneath the surface of the foam (“embedded combustion”), increasing the residence time of the flame, which improves uniformity of temperature distribution on the surface while dramatically reducing NO<sub>x</sub> and CO emissions. For example, when comparing the PB10 Emitter with MetFlame™ to other industry-leading emitters operated at an input of 360 kW/m<sup>2</sup> (114,500 btu/h/ft<sup>2</sup>), the MF10 emitters produced 50% less NO<sub>x</sub> emissions!

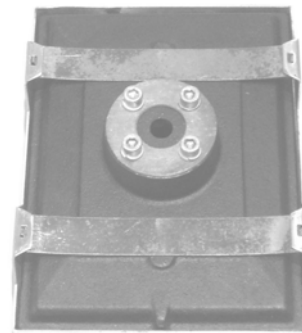
# MetFlame™ PB10 Emitter Design

The unique high temperature capabilities of the **MetFlame™** Metal Foam Media made it necessary to develop an emitter design that has been specifically tailored to this unique new technology.

Energy efficiency as well as the radiant energy density is optimized by the use of a reverberating screen over the **MetFlame™** Metal Foam Media surface. Reverberating screens recover and re-radiate energy contained in the flue gases. A reverberating screen cannot cope with continuous thermal stresses; as a result, over time they deform, sag, and twist, and ultimately break apart.

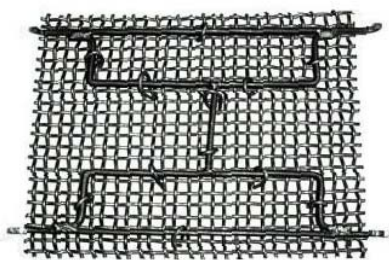


**Easily Replaced Screen**

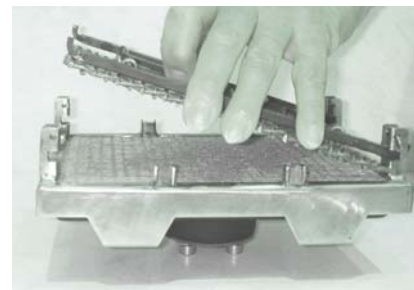


**Easily replaced MetFlame Media & gaskets**

The PB10 Emitter design incorporates a unique screen fixture (Patent Pending) that allows the screen to expand and contract (free-floating) without mechanical constraints. This specifically designed screen support structure provides the optimum “anti-sag” support, reliability, and ease of maintenance.



**Screen Replacements are supplied with fully integrated and pre-assembled support**



**Screen replacement is a simple, on-machine procedure**

As screens near the end of their useful life (contamination, etc) it is essential to replace such screens to avoid reduction in radiation efficiency and density. The PB10 has a screen design that is easily replaced, even on machine. In addition, the **MetFlame™** Metal Foam Media can also be quickly replaced (off machine). We offer a complete kit that includes all necessary gaskets.

## **Porvair Advanced Materials**

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