

# Metpore® EFCS



Exhaust Filtration/Catalyst Support

## Diesel Particulate Filter Media

from **Porvair Advanced Materials** (ISO 9000:2000 and ISO 14001 certified)

**Porvair Advanced Materials** is the leading commercial manufacturer of a wide range of metal foam products and has successfully developed foams which are now sold into a number of demanding applications. Porvair has been supplying metal foam for diesel particulate filters for five years and retrofit filters employing Porvair **Metpore® EFCS** are employed in a number of vehicle applications.

The success of **Metpore® EFCS** in this application is due to its unique combination of low pressure drop and therefore back pressure, fast thermal response, depth filtration efficiency, physical robustness and Porvair's ability tailor key performance attributes to meet specific customer needs.

**Metpore® EFCS** offers a patented and proven catalyst support technology to assist designers in developing solutions to meet ever tightening emissions regulations. Low density "tortuous path" structure and unique alloy composition of **Metpore® EFCS** provides many features and benefits simply not possible with straight channel substitutes. **Metpore® EFCS** cell geometry provides a significant improvement to conversion efficiency by breaking the boundary layers and therefore extending the area of turbulent flow for greater catalytic activity.

**Metpore® EFCS** readily accepts any catalyst coating requirement and is familiar to most leading catalyst suppliers and coaters. The density is carefully controlled to meet today's stringent exhaust flow specifications and offers a durable and cost effective alternative to ceramic substrates. The metal media and cellular construction provide a more robust substrate than ceramic alternatives. **Metpore® EFCS** enables designers to easily combine porosity, density and shape to engineer the optimum solution for retrofit or new build.

### Features of Metpore® EFCS:

- Cell structure provides "tortuous path", deep bed filtration
- Can be produced in range of metals, pore sizes, densities and shapes
- Density and porosity can be independently modified to optimise filtration and back pressure
- Physical strength to withstand vibration and shock in use as well as in canning
- Foam pieces can be shaped to give designers maximum flexibility
- Manufactured to close dimensional tolerances using low cost process

### Benefits of Metpore® EFCS:

- Low pressure drop and fast thermal response makes it ideal for retrofit applications
- High internal surface area and high reactivity enhances catalytic activity
- Optimisation of geometric surface area for specific applications via pore size and density
- Low back pressure and high filtration efficiency enables 90% particulate removal



# Metpore<sup>®</sup> EFCS Material Property Data

Properties	Units	Specifications				
Pore Density	Pores Per Inch	30ppi	40ppi	50ppi	60ppi	
Maximum Operating Temperature	°C	1600				
Density Range	% Bulk	3-15%				
Coefficient of Thermal Expansion	X10 <sup>-6</sup> in/in/°C	11				
Thermal Shock Resistance	n/a	Excellent				
Modulus of Rupture at 25°C	psi	210				
Compressive Strength @ 5% Density	N/mm <sup>2</sup>	0.86				
Custom Shapes available from any blank not exceeding the maximum dimensions listed	Length	in	24	24	24	24
	Width	in	30	30	30	30
	Thickness	in	1	1	1	1
Tolerance Specifications are +-2% for Length and Width, +-0.06" Thickness for an as fired part.						
Tolerance Specifications are +-0.10" for Length and Width, +-0.06" Thickness for a post fired cut part.						

## Stock materials:

**Metpore<sup>®</sup> EFCS** diesel particulate filter media is available from stock in two standard sizes for immediate trial

- 144mm diameter x 25mm thickness
- 160mm diameter x 25mm thickness

## Contact:

For more information on how **Metpore<sup>®</sup> EFCS** can help your design team meet current and future emission regulations, please contact:

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