The Emitec PM-Metalit™ substrate consists of alternating layers of corrugated metal foil and porous sintered metal fleece, Figure 1. The corrugated foil is formed to direct the gas flow so it impinges onto the metal fleece. The diversion of the flow is caused by shovel-like structures stamped inside the channels at defined distances. Some of the gas flows through the sintered metal, which acts as a deep bed filter. Thus, the structure can be referred to as a “partial flow deep bed filter”. It should be noted that when the sintered metal becomes loaded with particulates, the gas flow through the sintered metal layer decreases. The corrugated channels, however, remain open and let the untreated gases pass through.

Figure 1. Structure of Emitec “PM-Metalit” Flow-Through Filter

The alternating foil and sintered metal layers are wound and brazed into a cylindrical honeycomb structure resembling a conventional metallic catalyst substrate, and packaged into a steel canister, Figure 2 (double wall converter design is shown).
Figure 2. “PM-Metalit” Flow-Through Filter Cutout

The collected PM is passively regenerated using an upstream NO2-forming catalyst, in a manner similar to two-stage particulate filters. In some systems, catalyst coating is applied directly onto the FTF substrate (in such cases, care must be taken that the metal fleece porosity is not blocked by catalyst coating). Due to the presence of the oxidation catalyst, the FTF also produces reductions in HC and CO emissions.

The PM Metalit(Emitec)® Flow-Through Filter is a revolutionary, flow-through diesel particulate filter that provides effective removal of diesel particulate matter and lower backpressure than conventional wall-flow particulate filters. We can offer a variety of filter coatings and designs, depending on the engine application and duty cycle.

Typical Conversion Efficiencies:

<table>
<thead>
<tr>
<th>Particulate Matter Measured (PM10)</th>
<th>Diesel Particulate Matter (PM10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical Conversion Efficiencies</td>
<td></td>
</tr>
</tbody>
</table>
Partial flow Soot filter (Emitec PM-Metalit Substrate)

| PM Metalit® Emitec | >99% | Up to 60% | 95% |

* Requires diesel fuel with sulphur content less than 500ppm  
** Works best with sulphur content less than 15ppm (ULSD fuel)

- If we can help you with a tailor made solution to fulfill your demands in emission reduction, please contact us. Also for any questions regarding this subject we are glad to answer you as good as possible.

Visit the Emission Section in our Complete Exhaust System webshop