METALIT® with PE-Design™ allows cross-directional mixing of the exhaust gas within the substrate producing a turbulent like flow. This leads to improved flow distribution, reduction of total backpressure and improved catalytic efficiency both during cold start and warm-up conditions. Significant backpressure reduction results both in improved torque and power output respectively as well as in lower fuel consumption and the CO₂ emission.
PE-Design™ Enhances the Flow Properties of Catalysts

Extensive tests with PE-Design™ METALIT® reveal the positive influences of the perforation on cold start, pressure loss and emission. Within the catalyst a radial equalisation of flow allows a two brick system to be replaced by a single brick. Cold start behaviour is improved via reduced heat capacity.

Even the use of thicker metal foils is possible without cold start disadvantages, further improving the mechanical load capacity in the higher temperature range.

Perforated METALIT® builds up cavities which allows cross flow.

Radial flow equalisation within the catalyst means lower pressure loss.

UI = Uniformity Index
PE-Design™: Improvement of Efficiency + Power

Advantages:

- Improved flow distribution within the substrate by means of radial flow
- Reduction of backpressure by means of improved flow distribution
- Increased power and torque due to lower backpressure
- Improved conversion efficiency due to optimal utilization of the entire catalyst volume
- Improved cold start performances due to reduced thermal mass

Reference / Source:
SAE Paper 2005-01-1105 Backpressure Optimized Metal Supported close Coupled PE-Catalyst – First Application on a Maserati Powertrain
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