MDEC 2010
A FURTHER LOOK AT PARTIAL FLOW DIESEL PARTICULATE FILTERS

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Technology Introduction

- This type of product is popular where:
  - Significant amount of DPM reduction is required.
  - Engine has light duty cycle.
  - Compact installation is required.
  - Cost of full particulate filter too high.
- Called partial diesel particulate filters, partial filters, flow through filters.
- DCL International Inc. product is MINE-X® Flow-Through Filter.

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MINE-X® Flow-Through Filter - Technology Requirements-

- An effective filter design must:
  - Utilize filter media capable of capturing extremely small particles.
  - Encourage the separation of particulate from the exhaust gas.
  - Have a mechanism to promote the combustion of soot at low temperatures.
  - Be durable to survive the diesel exhaust environment.

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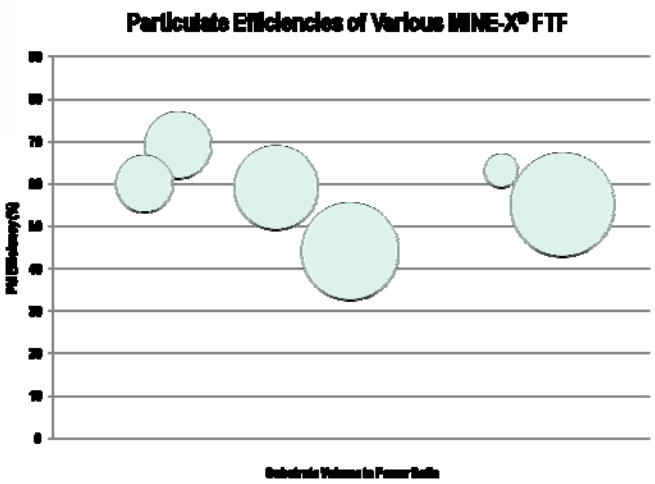
MINE-X® Flow-Through Filter
- Testing -



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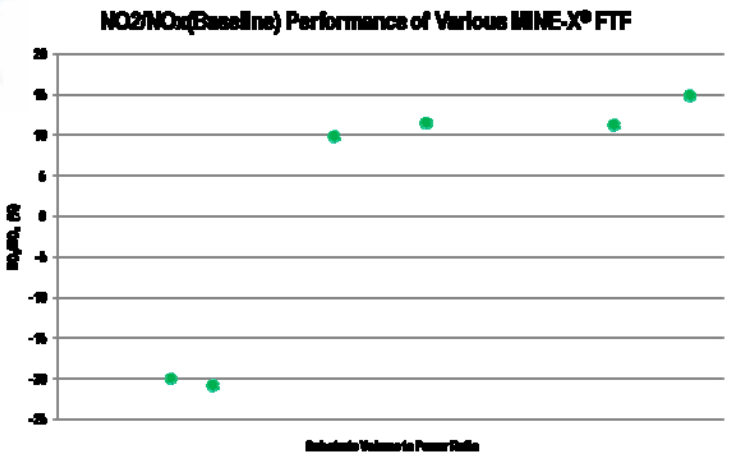
MINE-X® Flow-Through Filter
- Testing -



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MINE-X® Flow-Through Filter
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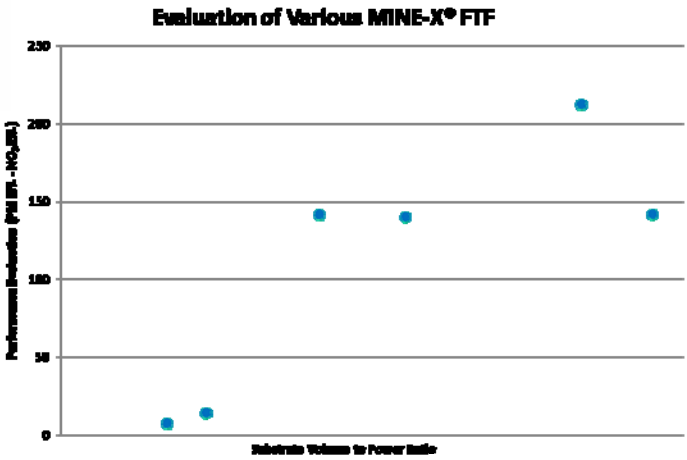

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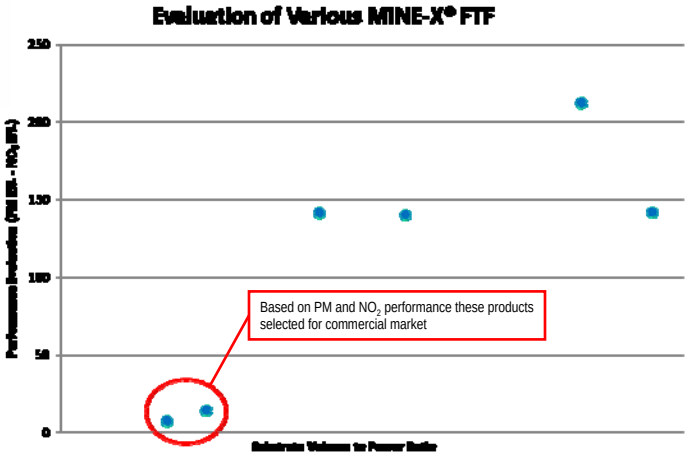
MINE-X® Flow-Through Filter
- Testing -



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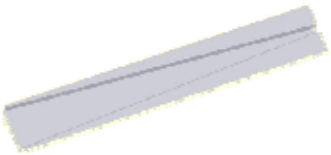
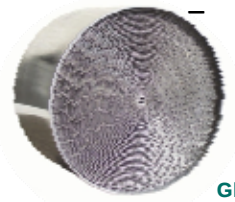
MINE-X® Flow-Through Filter
- Technology -

- The current generation of MINE-X® Flow-Through Filter continues to:
  - Passively reduce significant amounts of harmful pollutants with minimal NO_2 increase.
  - Have built-in "bypass" to mitigate back pressure spikes.
  - Maintenance-free design.





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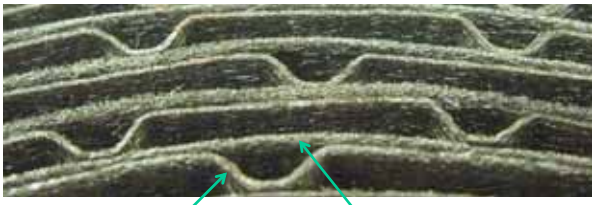
MINE-X® Flow-Through Filter
- Technology -



Metal fibre fleece formed into trapezoidal ducts.

Flat layers metal fibre fleece brazed to corrugated fleece.

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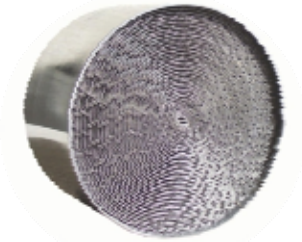
MINE-X® Flow-Through Filter
- Technology -

- Improved NO_2 performance with ability to maintain excellect DPM efficiencies.
- Substrate volume requirement per application was reduced significantly without comprising on performance.
- Reduced volume allows for broader application of product.



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MINE-X® Flow-Through Filter
- Field Testing-

- **Application:** Cummins B3.3
- **Aftertreatment Solution**: MINE-X® Flow-Through Filter
- **CO Efficiency**: 99%
- **NO_2 Efficiency**: 51%

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