

# Leading the way in advanced Diesel Particulate Filters

**Exhaust Control Industries** Air and noise pollution control specialists



# Exhaust Control Industries

Experts in advanced Diesel Particulate Filters

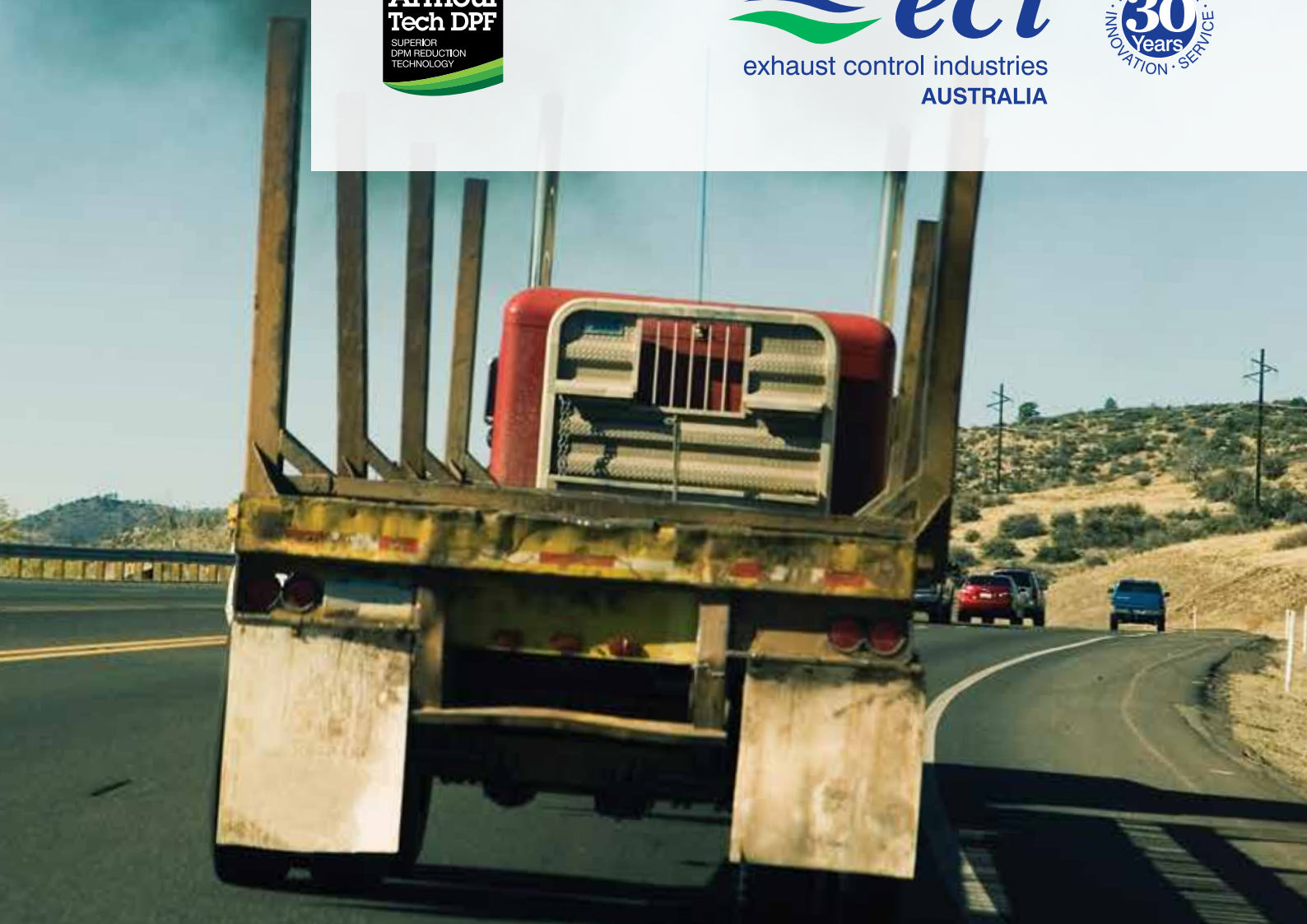
**Exhaust Control Industries Australia (ECI) has become the recognised leader in air and noise pollution control in Australia.**

ECI has been developing innovative solutions for the safe and effective treatment of diesel engine emissions for over 30 years. Designed using unique and affordable technologies, our Diesel Particulate Filters (DPFs) are not only manufactured in Australia, but we are a 100% Australian-owned company. As a leader in the

field, ECI provides cutting-edge emissions control solutions around the world. ECI's new Armour Tech DPF is one such solution, and the latest product in our range.

ECI is committed to continuously improving the environment. We are proud to offer this advanced technology to improve air quality and further reduce greenhouse gas emissions worldwide.

**Talk to the experts.**





# ECI Armour Tech Diesel Particulate Filter

Superior reduction of particulate matter from diesel exhaust

**The Armour Tech Diesel Particulate Filter (DPF) offers the highest Particulate Matter (DPM) reduction performance available on the market.**

With a regeneration temperature as low as 250°C, the latest technology metal Diesel Oxidation Catalyst (DOC) substrate matrix also provides optimum heat and mass transfer capability, superior strength and high resistance to thermal shock.

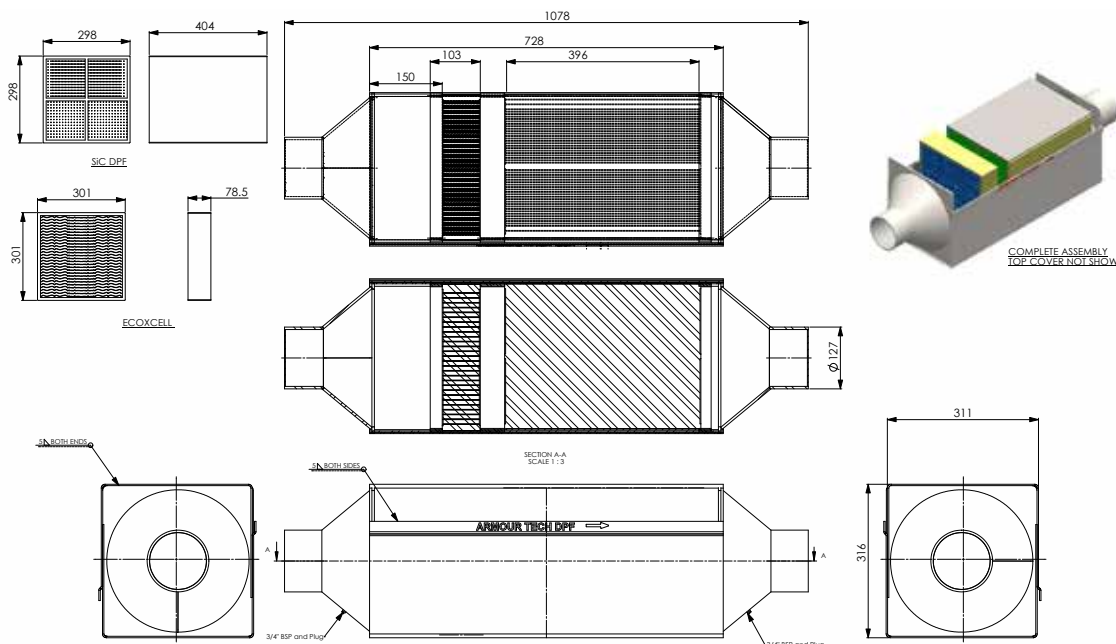
The DPF features state-of-the-art Silicon Carbide (SiC) technology with an optimised wash coating to continuously reduce Particulate Matter emissions by up to 99% whilst keeping backpressure in the exhaust low. The SiC-based DPF has a thin catalytic wash coat that meets national and international legislative requirements to limit the increase of Nitrogen Dioxide (NO<sub>2</sub>) from DPF systems.

Our Catalysed DPF (CDPF) unit also simultaneously reduces Carbon Monoxide and Hydrocarbons from the exhaust.

Due to the catalytic wash coat, the DPF can operate without a DOC, but for maximum regeneration and oxidation of PM, a DOC + SiC DPF combination will provide the highest DPM reduction performance available.



**Customised solutions are available for all applications**



# Armour Tech DPF Applications



## Typical DPF Applications

ECI Australia offers great flexibility in design parameters, and our products can be tailored for a broad range of applications, including:

- Mining
- Construction and tunneling equipment
- Heavy on- and off-road transport
- Industrial
- Marine
- Power generation, including:
  - Standby power
  - Emergency power, and
  - Community power.

Typical work environments requiring controlled decreased particulate emissions include underground mines, tunnels, quarries, high rise buildings, warehouses and vehicles operating in densely populated areas, docks, ship holds and airports.

## Advantages – CDPF Model

- Superior CO and DPM emissions reduction by up to 99%
- Simultaneous reductions in Carbon Monoxide and Diesel Hydrocarbons
- Low regeneration temperature of 250°C
- The latest technology in catalytic wash coats for NO<sub>2</sub> optimisation

- Modular design makes it ideal for large and difficult retrofits
- Heavy duty housing construction
- Low maintenance and service costs
- Low running costs via continuous operation of the unit (no downtime)
- Easy to clean
- Designed and built for the toughest underground mining regulations worldwide.

ECI Armour Tech is self-cleaning at the minimum regeneration temperature of 250°C, does not wear out and will remain active for many thousands of hours.

## Manage your machinery emissions and improve productivity...benefits include:

- Improvements in work place environments – particularly underground mines.
- Lower atmospheric DPM levels improve mine ventilation capabilities.
- Improved ventilation capabilities allow increased vehicle movements within the same space, leading to increased production capacity.
- Keeping emissions of Hydrocarbons, Carbon Monoxide and oxides of Nitrogen ultra-low means improvements in overall societal health as well as the environment.

# Diesel Exhaust Health Effects

Diesel exhaust emissions classified as carcinogenic



In June 2012, the International Agency for Research on Cancer (part of the World Health Organisation) updated diesel engine exhaust to the classification '**carcinogenic to humans (Group 1)**'. This is the highest classification and indicates that diesel exhaust damages the DNA, or genetic material in body cells in a way that leads to cancer. The Group 1 classification places diesel exhaust alongside toxins such as asbestos, benzene, formaldehyde and arsenic.

Exposure to diesel exhaust can have immediate harmful health effects. Those most vulnerable are children whose lungs are still developing and the elderly who may have other existing health problems.

## The following substances are present in diesel exhaust:

- **Particulate Matter (i.e. soot)**

*Effects:* Respiratory irritant with higher levels associated with increased incidence of cardiovascular and lung failure.

- **Carbon Monoxide**

*Effects:* headaches, irritability, impaired judgement and memory, breathlessness, aggravation of angina and other cardiovascular diseases, developmental toxicity and death.

- **Ozone (precursors, NOx and VOC)**

*Effects:* eye and respiratory irritants, asthma exacerbation, bronchitis and irreversible lung damage.

- **Oxides of Nitrogen**

*Effects:* respiratory irritant, immunosuppressant and asthma exacerbation.

The main culprit is the invisible soot – inhaled solid insoluble particles that penetrate deep into the lungs and in a relatively short time cross into the bloodstream and are carried to internal organs. Only the new diesel engines, equipped with high efficiency diesel particle filters, are designed to address this most serious health hazard in diesel exhaust. Fortunately, older diesel engines can now be retrofitted with ECI's Armour Tech Diesel Particulate Filter. This highly effective device reduces Particulate Matter (PM) and Carbon Monoxide (CO) by **99+ percent**.



# Manage your machinery emissions and improve productivity

ECI cater to broad sectors including building construction, industrial, above and underground mining, on and off road transport and power generation providing a full service offering – tailored design, manufacturing, installation, service and maintenance.



## On-Site Analysis

Conduct on site exhaust inspections and testing using the latest **Kenelec Scientific** testing equipment. Your vehicles can be tested on site without any disruption with instant results.



## Measured Results

Graph your test data and provide the right product recommendations to achieve safe emission levels and increased productivity.



## Product Solutions

Tailored product solutions to reduce emissions on your entire diesel fleet.



## Total Preventative Management

Ongoing product monitoring.

## Exhaust Control Industries

Air and noise pollution control specialists

ECI is the leader in Co-generation and SCR technology in Australia.

Our air and noise pollution control products include Silencers, Diesel Particulate Filters, Diesel Particulate Catalyst, Catalytic Purifiers, Waste Heat Recovery Systems and Acoustic Enclosure Products.



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