



BISAF Ltd.

Cleaning The Air We Breathe

OCCUPATIONAL HEALTH IN THE CONSTRUCTION INDUSTRY AND THE ROLE OF DPFS

DANGERS OF PARTICULATE IN DIESEL EXHAUST

Diesel engines have many advantages as a source of power and will continue to be used for many years. Unfortunately, they emit air pollutants in their exhaust that are dangerous to human health. The most dangerous of these is Diesel Particulate Matter (DPM) that is composed of tiny particles of carbon coated with hydrocarbons some of which are carcinogenic. The World Health Organisation has classified DPM as carcinogenic to humans with exposure giving an increased risk of lung cancer. It is also known to cause heart and lung problems and it is estimated that in Europe we will all die on average 8 months earlier as a result of exposure to airborne particulate. This is why the EU and every developed nation in the world has implemented legislation to control particulate emissions at source ie from the car, truck or construction machine that is producing it. This has resulted in the widespread use of Diesel Particulate Filters (DPF) on new Diesel engines in most applications. It is also why the Greater London Authority has stipulated tighter standards for construction machinery working in the capital.

RISKS OF EXPOSURE TO DIESEL PARTICULATE IN THE CONSTRUCTION WORKPLACE

Because construction workers are often in close proximity to Diesel engines, sometimes in enclosed spaces, they are at particular risk from harm caused by Diesel exhaust. It is estimated that hundreds die of lung cancer in the UK each year due to Diesel exhaust exposure from working in the construction industry. Diesel exhaust is covered by the COSHH regulations and the HSE offers advice on mitigating the risks of exposure to Diesel exhaust fumes, including the retrofitting of a DPF. The EU has decided to set a limit to the amount of Diesel particulate allowed in the workplace and this will soon become law. Employers have a duty to protect their workers from harm and Diesel particulate has been highlighted by EU and UK regulators, NGOs, and trade unions as a potential hazard in the construction industry.

BISAF DPFs DESIGNED SPECIFICALLY FOR CONSTRUCTION MACHINES

BISAF has developed a retrofit particulate filter to virtually eliminate the DPM emissions from smaller construction machines that, because of their size, are often used in confined spaces. Emissions legislation for small construction machines is not as tight as it is for the larger machines, resulting in particulate emissions many times higher. Even the Stage V legislation for construction machines, to be introduced in 2019, will not result in filters on these machines.

BISAF was also looking for a solution for the rental industry as many of these smaller machines are hired for specific jobs, some of which will require filters and some that will not. The filter that we have developed is called “The Particulator[®]” and uses OEM filter technology for almost complete removal of DPM. It also has a convenient electrical heating system that regenerates the filter in 30 minutes and can be fitted and removed from a machine in minutes.

BISAF is also the UK agent for Johnson Matthey’s range of retrofit Diesel Particulate filters for larger construction machinery. Johnson Matthey is a world leader in this DPF technology, supplying many of the car, truck and machine manufacturers around the world. They have been supplying retrofit filters for construction machines for 25 years and have developed a full range of sizes and regeneration types to be able to retrofit any engine in any non-road mobile machinery application.