



## **Information regarding fogging system for reducing temperature in the Exhaust system**

### **Introduction**

This system is a fogging system for cooling of the air for KEX exhaust Hoods through the exhaust ducting

### **Site requirements**

Our understanding of the above site requirements is as follows:

The site has a need to reduce the air temperature prior to the exhaust fan as well as mitigate stray embers

The air temperature from the KEX Hood entering the ducting is required to be reduced by approximately 30°C.

The Zone Fogging system will be installed in the KEX Hood to combine with the heated air and operate to deliver the required temperature reduction.

This information is based on the installation of fogging into the ductwork as described as follows

### **Fogging system**

The Fogging system pressurises water to 1000psi, through uniquely designed nozzles. This produces minute fog-like water droplet particles that evaporate into the atmosphere. This has the effect of reducing the temperature of the surrounding air by between 7 and 10 degrees (the cooling effect is far greater where very high temperatures and low humidity prevail).

Similarly, this water fog encapsulates any dust particles and makes them too heavy to remain airborne resulting in them falling to the ground. Independent tests have confirmed that Fogging is highly effective in reducing airborne dust. Results have shown that particles sized at 10 microns are reduced by 69.23% and those sized at 2.5 microns, reduced by 74.5%.

The Fogging system can be adapted to become an effective delivery system for an odour control product. This product is introduced into the system's water supply and released into the atmosphere, through the fogging mechanism. By using this method a very significant percentage of odour can also be eliminated.

The Fogging system is modular in format and has been, as each client's application requirements differ in size and complexity, designed to accommodate this.

### **System Design**

The fogging setup will operate off mains water supply. The mains will feed an interface box c/w solenoid zone. There may be a requirement for a pressure reduction valve prior to this equipment depending on the mains water pressure.

The Zone will operate by a temperature sensor which will be fixed in the ductwork just prior to the exhaust fan. This Novus controller will be set to trigger the fog providing the air temperature is above the set point. The Novus controller will then directly activate the solenoid valve for this Zone as required. Once the fan stops and the air temperature decreases then so will the need for the fog to operate.

The system can be placed either behind or in front of the filters, the consideration being cleaning and aesthetics



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### **Fogging System components**

Stainless Steel Interface Box  
Interface Control Box  
High Pressure Solenoid Valve  
Filter Housing Assembly c/w Pressure Gauges  
Novus Controller  
Nozzles (QTY to be confirmed)  
Tees, Elbows and connectors (QTY to be confirmed)  
3/8" High Pressure Nylon Tubing (QTY to be confirmed)  
Various clamps, spring clips for fixing tubing and fittings

### **Exclusions**

Water Testing (mains water OK).  
Water supply to fogging system. 15mm FBSP ball valve required.  
Pressure Reduction Valve may be required.  
Single phase power supply to the interface box.  
Electrical connections on site. Clipsal Model CLI-56C310 socket required.  
Additional water filtration & pumping equipment before the fogging system if required.  
Any brackets/structural work required on site to install the Fogging system.  
Water treatment apart from sediment filtration

### **Assumptions**

That single-phase power is available for use so that the Fogging system can operate.  
That the installation personnel be given the appropriate safety induction training so that they can operate independently on-site.  
That the site electrician be on call throughout the installation process so that matters concerning his area of responsibility may be worked through in a timely fashion.  
That the available personnel carry out any additional plumbing or construction work if required.

### **Example Images**

