Loktec

Providing ATM Protection since 2003

Fire Protection

ATM Fire Protection System

FP systems use the latest generation of our patented FPC solid compound that is the pinnacle of many years of research and development. When activated the FPC solid compound is transformed into a rapidly expanding extremely effective and efficient fire extinguishing condensed aerosol. The aerosol is propagated and evenly distributed in the enclosure under protection using the momentum generated during the transformation process. Unlike gaseous agents, the total flooding effect is achieved without increasing the pressure in the protected area/volume. Fire extinguishing is accomplished by the interruption of the chemical chain reactions occurring in the flame and not by the depletion of oxygen and/or cooling as suggested by the traditional triangle of fire.

Transformation Process

In a typical fire, there is intensive inter-reaction between atoms and fragments of unstable free radicals in the presence of oxygen. This continues until the burning fuel is depleted. FP extinguishes fire predominantly by inhibiting on a molecular level the chemical chain reactions present in combustion. On activation of the FP unit, the FPC compound within is transformed into a rapidly expanding fire extinguishing condensed aerosol consisting mainly of Potassium salt-based K2CO3, H2O (vapor), N2and CO2. The gas-type, 3-D, properties of the condensed aerosol facilitate its even and fast distribution in the protected volume as well as its flow into the natural convection currents of combustion. The solid particles of Potassium salts, which are of a few microns in size, are suspended in an inert gas that displays an extremely high surface to reaction mass ratio ? a fact that increases efficiency ? which results in fewer quantities of fire extinguishing agent required. When the condensed aerosol reaches and reacts with the flame, Potassium radicals (K*) are formed mainly from the disassociation of K2CO3. The K* s bind to other flame-free radicals (hydroxyls ? OH-) forming stable products such as KOH. This action extinguishes fire without depleting the ambient oxygen content. KOH reacts further in the presence of CO2and forms K2CO3. The solid particles of Potassium Carbonate (K2CO3) have a diameter of fewer than five microns and remain in suspension in the protected room/enclosure for at least 30 minutes, preventing further re-ignition of the fire.

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