

# ROTO-FIRE PAC

## EMERGENCY QUICK RESPONSE UNIT

www.fire.i-cat.co.za  
38 Amatole Road, N4 Gateway Industrial Park West  
Willow Park Manor Extension 65, Pretoria  
PostNet Suite #577, Private Bag x37,  
Lynwood Ridge, 0040

### TECHNICAL SPECIFICATIONS

Extinguishing Agent	Foam mist (water)
Extinguishing Agent Weight	17.7 kg
Pressurised Medium	Nitrogen
Charging Pressure	17 Bar
Operating Pressure	4 Bar
Stream Range	Up to 11 meters
Working Time	Up to 80 seconds
Working Temperature	5°C to 60°C
Sub Zero Unit Working Temperature	-40°C to 60°C
Total Weight	30 Kg

The **ROTO-FIRE-PAC** unit makes use of Water Mist Technology. This technology is currently the leading misting technology internationally, extinguishing class A, B and F fires by using Foam Mist as the agent. The unit creates a fine atomised mist, charged with kinetic energy to penetrate the heat radiation caused by a fire. The **ROTO-FIRE-PAC** ensures gradual cooling without causing thermal shock to equipment.

**'ROTO-FIRE-PAC IS AN EFFECTIVE QUICK RESPONSE UNIT.'**



**'unique features, easy to use and safe to use on Class A, B, C & F fire'**

### EFFECTIVE & SUSTAINABLE:

- Directional control of stream allows for fire suppression from any angle
- Increased safety for operators compared to other technologies
- Nozzle creates a mist "halo" that protects the firefighters from radiated heat and smoke
- A totally sustainable technology safe for people, property and the environment
- Compact, mobile and effortless to use
- Easy and economical to refill
- Gives the suppression capability of a traditional 1 000 litre system

### THE UNIQUE SUPPRESSION CAPABILITIES OF THE ROTO-FIRE-PAC:

- Flammable solid substances (eg. paper and wood)
- Plastics (eg. polystyrene PS and polypropylene PP)
- Light oil fractions (eg. heptane)
- Medium oil fractions (eg. heating oil)
- Heavy oil fractions (eg. mazute)
- Polar liquids (eg. ethanol)
- Edible oil (eg. grapeseed oil)

### EXTINGUISHING ELECTRICAL EQUIPMENT

The suppression agent causes no thermal shock to equipment. This means there is limited risk of damage to ceramic or other sensitive, costly components.



### APPLICATIONS:

- Mining Proto Teams
- High structures and conveyors difficult to reach places
- Fuel storage areas
- Underground and mining tunnels fire rescue services
- Used in conjunction and to compliment the I-CAT Blaze Buster

**'effective on A,B and F class fires with minimal collateral damage'**

# BLAZE BUSTER

## RAPID RESPONSE FOAM UNIT



The **BLAZE BUSTER** is a rapid response self-contained foam mist unit.

The **BLAZE BUSTER** consists of 4 x 230 litre self contained and pre-mixed foam cylinders. No external water or electrical supply is required to operate the unit.

The **BLAZE BUSTER** does not require any start-up time and is ready to suppress fires immediately.

The **BLAZE BUSTER** weighs approximately 1 ton and the unit can be fitted on a single or an extra-cab pickup or trailer.

The **BLAZE BUSTER** high-performance canon has a discharge range of approximately 30 metres. In addition, the unit is fitted with a retractable hose reel for easy reach.

### APPLICATIONS FOR THE FOLLOWING INDUSTRIES:

- Military
- Aviation
- Petroleum
- Industrial Manufacturing
- Mining Forestry and Agriculture
- Oil and Refinery



### "EASY TO OPERATE, VERSATILE AND EXTREMELY EFFECTIVE"

The BLAZE BUSTER can be rapidly ready for deployment after initial discharge. The cylinders of the unit can be refilled with water and a foam additive where-after it is repressurized with Nitrogen and ready for re-use within minutes.

### TECHNICAL SPECIFICATIONS:

Extinguishing Agent:	Water + A foam additive
Working Pressure:	17 Bar
Propellant:	Air or Nitrogen
Working Temperature:	5°C - 60°C or -40°C - 60°C (sub zero unit)
Dimensions:	1,5 x 1,0 x 0,85 metres
Total Weight:	Approximately 989 kg
Hose Length:	18 metres
Foam Canon:	30 metre range





# CONVEYOR BELT FIRE SUPPRESSION SYSTEM

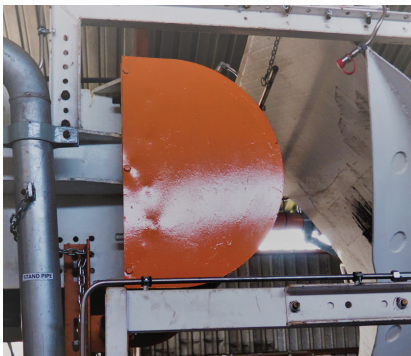
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The design of the system layout is based on different possible fire scenarios for conveyors. The design takes into account stationary, localised fires; moving belt fires as well as belt burn-through and breakage. The design aims to mitigate all the fire risks associated with these scenarios.

## SYSTEM OBJECTIVES:

- Conveyor protection
- Effective fire detection
- Effective fire suppression
- Equipment protection
- Reducing down-time and clean up after activation
- Easy installation and operation
- Assists in cost effectiveness



## OUR COMPLETE CONVEYOR BELT SUPPRESSION SOLUTION CONSISTS OF:

- Primary (Head, Tail and Take up/Tensioner Pulleys) **Minimum requirement for surface and underground conveyors**
- Secondary (Cooling Zone) **Recommended for underground conveyors**
- Redundancy (Zonal Protection) **Recommended for surface and underground conveyors**

The I-CAT Fire Solutions product range was designed to protect your valuable production and industry equipment such as transformers, hydraulic power packs, conveyor belts (high risk areas like tail, head and tensioner pulleys).

The I-CAT Fire Solutions' Localised Suppression System was designed to protect conveyor belts - high risk areas like tail, head and tensioner pulleys.

## Primary System

### Head, Tail and Take up/Tensioner Pulley

#### THE SYSTEM MAKES USE OF WATER MIST TECHNOLOGY:

This technology is currently the leading misting technology internationally. The system creates a fine atomised mist, charged with kinetic energy to penetrate the heat radiation caused by a fire. It leads to gradual cooling without causing thermal shock to the equipment. A foam additive is added to the system to prevent any B class fire from spreading when fuel lines or hydraulic lines rupture, causing equipment fires.

#### I-PROTECT HEAT SENSITIVE, LINEAR DETECTION TUBING:

Pneumatic, detection tubing is available in activation temperature ranges of 80°C - 110°C and 150°C- 180°C. When used in conjunction with I-CAT Localised Suppression System it offers a highly reliable detection and system activation methodology.

## Secondary System:

### Cooling Zone

Due to the fact that automatic fire suppression along the full length of the belt is not only unnecessary but also cost inefficient, I-CAT has developed the concept of cooling zones. Cooling zones are pre-determined zones along the length of the conveyor that consist of a flame or equivalent detector and a fixed installation of discharge nozzles feeding from fire suppression cylinders.

The purpose of a cooling zone is to suppress a moving fire on a conveyor belt and to cool the belt to a safe working temperature, below its reignition temperature, as it moves through the zone. The number of cooling zones required, the location of the zone as well as its length are dependent on a number of variables. Upon detection of a heat abnormality on a moving conveyor belt, a signal will open the solenoid valves feeding the cooling zone nozzles

## Redundancy System:

### Zonal Protection

This system comprises of detection that runs along the complete length of the conveyor belt and a number of specialized corridor nozzles designed to generate fine mist over a large area, covering the complete cross section of the mine corridor with fine mist.



#### THE CORE FUNCTIONS OF THE CONVEYOR FIRE SUPPRESSION SYSTEM INCLUDE:

- Fire suppression
- Containment and cooling
- Minimizing structural damage to equipment
- Limited health and safety risks for workers during fire emergencies
- Minimal maintenance through the use of an automated self-cleaning filter

The nozzles act as a barrier and aid with smoke scrubbing, shielding the workers from excessive heat and toxic fumes. Once the linear heat detection cable detects a fire, a signal is sent to the control unit which in turn activates the solenoid valves of the two nearest corridor nozzles.



# VEHICLE SUPPRESSION SYSTEM

## THE SYSTEM MAKES USE OF WATER MIST TECHNOLOGY

This technology is currently the leading misting technology internationally. The system creates a fine atomised mist, charged with kinetic energy to penetrate the heat radiation caused by a fire. It leads to gradual cooling without causing thermal shock to the equipment. A foam additive is added to the system to prevent any class B fire from spreading when fuel lines or hydraulic lines rupture, causing equipment fires.

### SYSTEM OBJECTIVES:

- Vehicle operator protection
- Effective fire detection
- Effective fire suppression
- Equipment protection
- Reducing down-time and clean up after activation
- Considering the environment with system activation
- Easy installation and operation
- Assists in cost effectiveness

### VEHICLE OPERATOR IN CAB PROTECTION:

Vehicle Suppression Systems can be installed with a water mist in cab protection system aimed at protecting human life in case of a vehicle fire.

### I-PROTECT HEAT SENSITIVE, LINEAR DETECTION TUBING:

Pneumatic, detection tubing is available in activation temperature ranges of 80°C - 110°C and 150°C - 180°C. When used in conjunction with the I-CAT Vehicle Suppression System, it offers a highly reliable detection and system activation methodology.



### "no re-ignition after the fire was extinguished"

The use of foam mist as a fire suppression medium supersedes its competitors in the market. Through its gradual cooling properties, it controls the risk of re-ignition and the spread of a potentially devastating fire. The foam mist prevents thermal shock and poses no threat to hot surface equipment that may crack or damage through rapid cooling. The systems

### SYSTEM PROPERTIES:

- The system is available as:
  - Automatic activation and suppression
  - Manual activation and suppression
- The system can be connected to any fire alarm system
- Operating temperatures: - 40°C - 60°C
- Any type of fire detection can be used with the system
- Optional extras:
  - VSS detection and activation panel



### APPLICATION:

- Shovels
- Excavators
- Graders
- Haulage trucks
- Pumps and valves
- Wheel Arches Protection
- Charge cars
- Crawlers
- Front end loader
- TLB's
- Dump trucks
- Forklifts
- Drill Rigs
- Vehicle hydraulics



### SYSTEM MAINTENANCE:

The water and/or foam mist system is designed to improve and save on maintenance costs. Once a system has been activated, it will require a foaming agent refill, antibacterial tablet, detection tubing repair and system pressurization with nitrogen or compressed air. All I-CAT Systems can be re-instated on site within minutes.

# TRANSFORMER SUPPRESSION SYSTEM

THE I-CAT FIRE SOLUTIONS LOCAL SUPPRESSION SYSTEM (LSS) WAS DESIGNED TO PROTECT TRANSFORMERS AND ASSOCIATED INFRASTRUCTURE.

## THE SYSTEM MAKES USE OF WATER MIST

This technology is currently the leading misting technology internationally. The system creates a fine atomised mist, charged with kinetic energy to penetrate the heat radiation caused by a fire. It leads to gradual cooling without causing thermal shock to the equipment. A foam additive is added to the system to prevent any class B fire from spreading when fuel lines or hydraulic lines rupture, causing equipment fires.

## I-PROTECT HEAT SENSITIVE, LINEAR DETECTION TUBING:

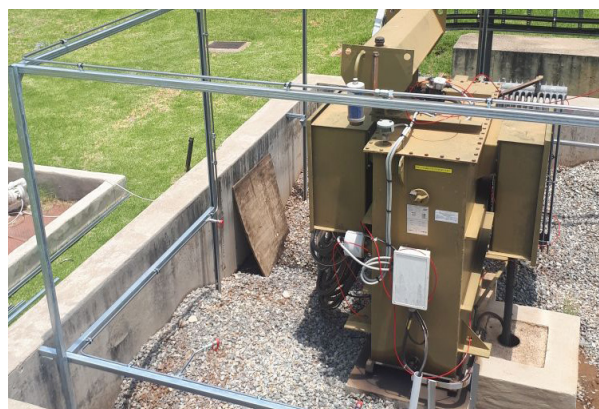
Pneumatic, detection tubing is available in activation temperature ranges of 80°C - 110°C and 150°C - 180°C. When used in conjunction with I-CAT Transformer Local Suppression System it offers a highly reliable detection and system activation methodology.

### SYSTEM OBJECTIVES:

- Effective fire detection
- Effective fire suppression
- Reducing down-time and clean-up up after activation
- Considering the environment
- Easy installation and operation
- Cost effective maintenance

### SYSTEM PROPERTIES:

- The system is available as:
  - Automatic activation and suppression
  - Manual activation and suppression
- The system can be connected to any fire alarm system
- Operating temperatures: - 40°C - 60°C
- Any type of fire detection can be used with the system



Foam mist as a suppression agent is effective in displacing oxygen through its rapid expansion by coming into contact with the radiated heat from a fire, forming an inert environment. Through its gradual cooling properties, it controls the risk of re-ignition and the spread of a potentially devastating fire. The foam mist prevents thermal shock and poses no threat to hot surface equipment that may crack or damage through rapid cooling. The systems have a Class A, B and C classification.

## USE AND BENEFITS

The **TRANSFORMER LSS** is designed to improve and save on maintenance costs. Once a system has been activated, it will require a foaming agent and water refill, antibacterial tablet, detection tubing repair and system pressurization with nitrogen. All systems can be pressure tested on site and be placed back into service within minutes.

*I-PROTECT detection tubing offers a highly reliable detection system*



# BUS SUPPRESSION SYSTEM

## THE BUS SUPPRESSION SYSTEM MAKES USE OF WATER MIST TECHNOLOGY

This technology is currently the leading misting technology internationally, effectively suppressing classes A, B, C and F of fires by using Foam Mist as the agent. The system creates a fine atomised mist, charged with kinetic energy to penetrate the heat radiation caused by a fire. It leads to gradual cooling without causing thermal shock to the equipment. A foam additive is added to the system to prevent any class B fire from spreading when fuel or hydraulic lines rupture, causing hydrocarbon fires.

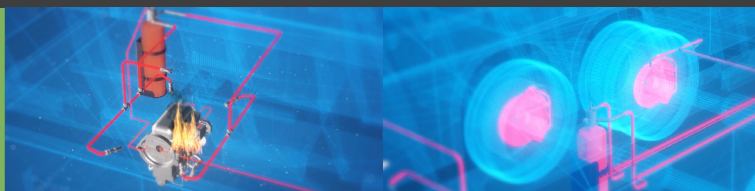
### SYSTEM OBJECTIVES

- Protecting the operator
- No additional thermal shock damage to the equipment due to the activation of the fire system
- Reducing down-time and clean up after activation
- Low maintenance cost
- Easy operation and installation

### SYSTEM PROPERTIES:

- The system is available in two options:
  - Automatic activation and suppression
  - Manual activation and suppression
- The system can be connected to any fire alarm system
- Operating temperatures: -40°C to 60°C
- Any type of fire detection can be used with the system
- Optional extras:
  - VSS detection and activation panel

The use of foam mist as a fire suppression medium supersedes its competitors in the market. Through its gradual cooling properties, it controls the risk of re-ignition and the spread of a potentially devastating fire. The foam mist prevents thermal shock and poses no threat to hot surface equipment that may crack or damage through rapid cooling. The systems have class A, B, C and F classification, thus making the need for dual medium extinguishing design unnecessary.



### SYSTEM MAINTENANCE:

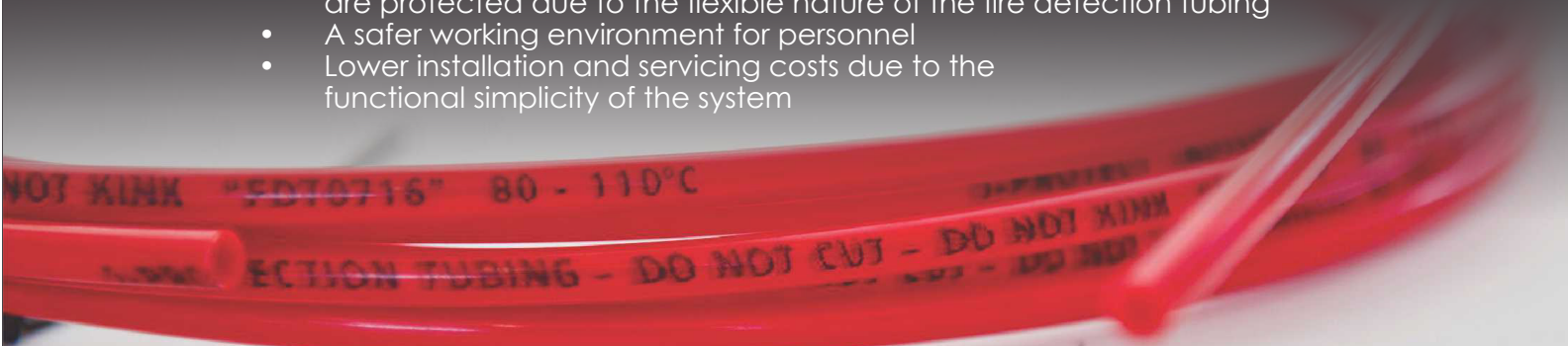
The water and/or foam mist system is designed to improve and save on maintenance costs. Once a system has been activated, it will require a foaming agent refill, antibacterial tablet, detection tubing repair and system pressurization with nitrogen or compressed air. All I-CAT Systems can be re-instated on site within minutes.



## 'I-PROTECT SYSTEMS ARE SUPPLIED IN CONVENIENT, READY TO INSTALL CYLINDER AND TUBE KITS'

The **I-PROTECT** low pressure automatic fire suppression system will ensure:

- Minimal to no property damage
- High system reliability due to the pure pneumatic functionality and independence from a power source
- A decrease in the number of false alarms
- High risk components in constricted/confined spaces are protected due to the flexible nature of the fire detection tubing
- A safer working environment for personnel
- Lower installation and servicing costs due to the functional simplicity of the system



## AUTOMATIC DETECTION AND SUPPRESSION SYSTEM

### BACKGROUND

Electrical malfunction and auto-ignition exposed to heat are known to be two of the most common causes of fires. The most significant aspect of preventing electrical fires or combustion fires in confined spaces, is early detection.

**I-PROTECT** was designed to mitigate the risk of injuries and fatalities, but also to minimise equipment damage as far as reasonably practical. **I-PROTECT** is an ideal solution for restricted, small enclosures or rooms containing electrical equipment.

### CLEAVOS 1230

Cleavos 1230 fire protection agent fluid is a nonflammable non-hazardous, clear, colourless liquid with low odour. Cleavos 1230 is an environmentally friendly agent which does not contribute to ozone depletion. It has an atmospheric lifetime of approximately 5 days and a Global Warming Potential (GWP) of 1 (IPCC 2001 method). CLEAVOS 1230 is also safe for humans.

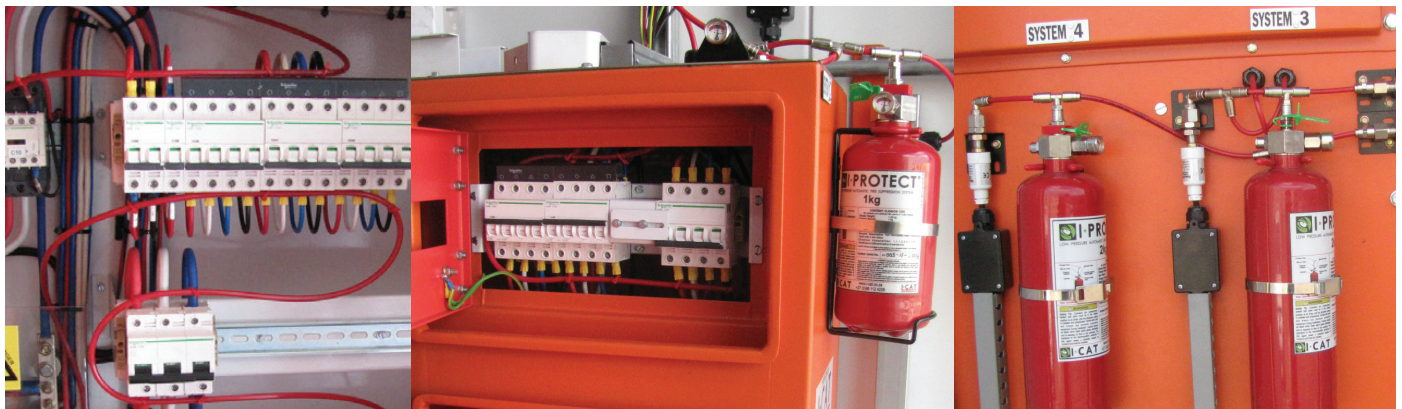
### I-PROTECT HEAT SENSITIVE, LINEAR DETECTION TUBING:

Pneumatic, detection tubing is available in activation temperature ranges of 80°C - 110°C and 150°C - 180°C. When used in conjunction with I-CAT **I-PROTECT** Systems, it offers a highly reliable detection and system activation methodology.



## ***'Minimal to no collateral property damage'***

The **I-PROTECT** low pressure automatic fire suppression system is a direct, quick response system. The system consists of fire detection tubing, pressurised with a fire extinguishing agent from a fire suppression cylinder. The tubing ruptures when exposed to specific elevated temperatures and then suppresses the source of the fire almost immediately. The suppression agent is delivered through the ruptured tube at the source of generated heat.



SYSTEM	COVERAGE
1kg	Up to 1 m <sup>3</sup>
2kg	Up to 2 m <sup>3</sup>
5kg	Up to 5 m <sup>3</sup>

The **I-PROTECT** low pressure automatic fire suppression system consists of a cylinder, detection tube and accessories kit.

### **CYLINDER KIT INCLUDES THE FOLLOWING MAIN COMPONENTS:**

- Supply unit (fire extinguisher cylinder with syphon tube)
- CLEAVOS 1230 fire suppression agent
- I-PROTECT cylinder head adaptor
- Pressure relief valve
- Pressure indicator
- Cylinder bracket
- Low pressure switch
- Associated fittings

### **APPLICATIONS**

Typical applications of the **I-PROTECT** system include, but are not limited to the following:

- Server racks and rooms
- UPS racks
- Battery charging bays
- Electrical distribution boards
- PLC's
- Generators and distributor enclosures
- Switchgear
- Any enclosure containing high-value electrical and electronic equipment

### **THE SYSTEM IS AVAILABLE IN CAPACITIES OF 1KG, 2KG AND 5KG KITS AND INCLUDE THE FOLLOWING MAIN COMPONENTS:**

- **I-PROTECT** linear fire detection tubing
- Associated pneumatic fittings

# FOAM AND WATER MIST EXTINGUISHERS

**'EXTINGUISHES CLASS A, B, C AND F FIRE TYPES  
of fire with minimal collateral damage'**

## EXTINGUISHING LIVE ELECTRICAL EQUIPMENT

- Water Mist Technology extinguishes live electrical equipment with no risk of electrocution to firefighters
- Water Mist Technology causes no thermal shock to equipment. This means there's no risk of damage to ceramic or other sensitive and costly elements

## EFFECTIVE & SUSTAINABLE:

- Directional control of stream allows for fire extinguishing from any angle
- Increased safety for system operators as compared to other technologies
- Nozzle creates a mist "halo" that protects the first responder from radiated heat and smoke
- A totally sustainable technology: Completely safe for people, property and the environment
- The key extinguishing agent is water or water with a foam additive



## 'CONVENIENT OPTION OF FOAM OR WATER MIST EXTINGUISHERS'

The ideal screening characteristics of the mist technology are beneficial not only for firefighters, but also for other people involved in a fire as the mist protects against flames, smoke and thermal radiation. Water Mist Technology protects against asphyxiation, as the mist contains oxygen. Smoke very often poses a much bigger threat to people than the fire itself especially in case of fires inside buildings. Water Mist Technology can extinguish fire on people since the mist is an ideal neutralizing extinguishing agent, that causes no irritation, or burns.

## ADVANTAGES OF FIREFIGHTING MIST

### HIGH FIREFIGHTING EFFECTIVENESS

Only about 5% of water directed at the fire is used to effectively suppress the fire. The remaining 95% floods the surroundings, causing post-fire damages. I-CAT Foam extinguishers create a mist that evaporates from surfaces at 100%, depending on the dispersion degree.

### EXTRA SAFETY:

The mist creates an ideal barrier for thermal radiation.

### POST-FIRE DAMAGE REDUCTION:

About 80% of damages resulting from a fire are not caused directly by the flames, but rather by the extinguishing action:

- Flooding of equipment with water
- Contamination with foam or active chemical extinguishing powder.

I-CAT's mist technology has a high degree of dispersion which fully evaporates in the fire environment and causes minimal to no damage to equipment.

### LOW WATER USAGE WITH MIST OF <100 MICRONS:

The extinguishing unit generates mist with droplet sizes of between 50 and 100 microns. With droplet sizes below 100 microns, Water Mist Technology uses exponentially less water than conventional water jets.

### SAFE FOR PEOPLE AND THE ENVIRONMENT:

When Water Mist technology is used, people and the environment do not come into contact with any chemically active substances except a mist made of water or inorganic salt solutions.





# LOCALISED SUPPRESSION SYSTEM

## PROTECTS THE FOLLOWING:

- Conveyor belts (tail pulley, head, tensioner)
- Transformers
- Hydraulic packs
- Fuel storage tanks
- Substations
- Oven burners
- Wind turbines
- Pump parts
- Lube Rooms
- Compressors
- Generators
- Electric motors and more

## SYSTEM OBJECTIVES:

- Effective fire detection
- Effective fire suppression
- Reducing down-time and clean-up after activation
- Considering the environment
- Easy installation and operation
- Cost effective maintenance



The I-CAT Fire Solutions' Localised Suppression System (LSS) was designed to protect your valuable production and industry equipment such as transformers, hydraulic power packs, conveyor belts (high risk areas like tail, head and tensioner pulleys) and fuel storage tanks against fire.

## THE SYSTEM MAKES USE OF WATER MIST TECHNOLOGY

This technology is currently the leading misting technology internationally extinguishing all classes of fires by using Foam Mist as the agent. The system creates a fine atomised mist, charged with kinetic energy to penetrate the heat radiation caused by a fire. It leads to gradual cooling without causing thermal shock to the equipment. A foam additive is added to the system to prevent any class B fire from spreading when fuel lines or hydraulic lines rupture, causing equipment fires.

## I-PROTECT HEAT SENSITIVE, LINEAR DETECTION TUBING:

Pneumatic, detection tubing is available in activation temperature ranges of 80°C - 110°C and 150°C - 180°C. When used in conjunction with I-CAT Local Suppression System it offers a highly reliable detection and system activation methodology.

**'I-CAT LOCALISED SUPPRESSION SYSTEMS CAN ALSO BE CHARGED WITH WATER TO FIT SPECIFIC OPERATIONAL REQUIREMENTS'**

## SYSTEM MAINTENANCE:

The water and/or foam mist system is designed to improve and save on maintenance costs. Once a system has been activated, it will require a foaming agent refill, antibacterial tablet, detection tubing repair and system pressurization with nitrogen or compressed air. All I-CAT Systems can be re-instated on site within minutes.

