



FIRE SOLUTIONS

CONVEYOR BELT

FIRE SUPPRESSION SYSTEM

PATENT NUMBER: 2020/01580



I-CAT's advanced conveyor belt system is designed for various fire scenarios on conveyors. The design considers stationary localised fires, moving belt fires, smoke generation 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.
- ❏ Efficient fire suppression.
- ❏ Equipment protection.
- ❏ Reducing downtime and cleanup after activation.
- ❏ Easy installation and operation.
- ❏ Cost-efficiency.



OUR COMPLETE CONVEYOR BELT SUPPRESSION SOLUTION CONSISTS OF:

- ❏ **PRIMARY:** (Head, Tail, Take-Up and Drive Sections). Minimum requirement for surface and underground conveyors.
- ❏ **SECONDARY:** (Suppression Zone) recommended for elevated, enclosed and underground conveyors.

I-CAT's Localised Suppression System is designed to protect conveyor belts – high risk areas like tail, head, take-up and drive sections. The comprehensive conveyor belt fire suppression system is patented, witnessed and tested by an international regulatory body.

THE SYSTEM MAKES USE OF WATER MIST TECHNOLOGY

I-CAT systems incorporate leading misting technology internationally. The system incorporates **AQUA COLLISION®** technology to create a fine atomised mist, charged with kinetic energy to penetrate the heat radiation caused by fire, it leads to gradual cooling without causing thermal shock to the equipment. A foam additive, **CLEAVOS AFFF® / FFF®** (Fluorine Free Foam), is added to the system to prevent class B fires from spreading.

PRIMARY SYSTEM // HEAD, TAIL, TAKEUP AND DRIVE SECTIONS

Primary suppression systems are fixed automatic suppression systems and are designed to protect high-risk areas on the conveyor belt. As a standard, primary suppression systems are installed for both surface and underground / tunnelled conveyors for risk areas such as drive motors, drum rollers, plummer blocks, belting and high friction points.

SECONDARY SYSTEM // SUPPRESSION ZONE

I-CAT has developed the patented concept of suppression zones. Stand-alone suppression zones are predetermined 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 suppression zone is to suppress a moving fire on a conveyor belt and to cool the belt to a safe operating temperature, below its re-ignition temperature, as it moves through the zone.

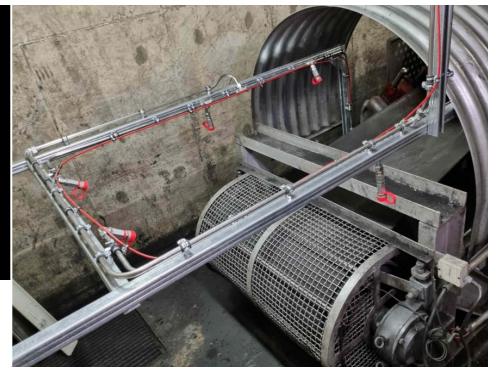
TERTIARY SYSTEM // SMOKE SCRUBBING

Part of I-CAT's patented conveyor suppression system includes a smoke scrubbing feature intended to contain smoke in confined or underground conveyors by filtering the environment of foreign particles using fine mist whilst allowing air to pass through the barrier, preventing smoke egress.

CONTINUOUS FLOW (OPTIONAL)

I-CAT's conveyor suppression system can be integrated to tie in with current or newly built reticulation, allowing for continuous flow. This system is proposed as an engineered alternative to the traditional water spray nozzle systems currently specified under NFPA 120 guidelines for fire protection of surface coal conveyors.

The system is specifically designed to enhance localised fire detection and suppression, targeting high-risk ignition zones on a typical coal conveyor system, such as head and tail pulleys, take-up areas, transfer points, and motors located on conveyors.



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TRANSFORMER

SUPPRESSION SYSTEM

THE I-CAT LOCALISED SUPPRESSION SYSTEM – DESIGNED TO SUPPRESS TRANSFORMERS AND ASSOCIATED INFRASTRUCTURE FIRES

THE SYSTEM USES WATER MIST WITH A FOAM ADDITIVE

I-CAT systems incorporate **AQUA COLLISION®** technology to create a fine atomised mist, charged with kinetic energy to penetrate the heat radiation caused by fire, it leads to gradual cooling without causing thermal shock to the equipment. A foam additive, **CLEAVOS AFFF® / FFF®** is added to the system to prevent any Hydrocarbon fires (Class B fire) from spreading in the event of main and conservator tank failure.

I-CAT's Localised Suppression Systems incorporate nozzles that were tested in accordance with UL711 guidelines. The systems are proven safe against conductivity on electrical apparatus and can be used on electrical equipment up to 100 kV.



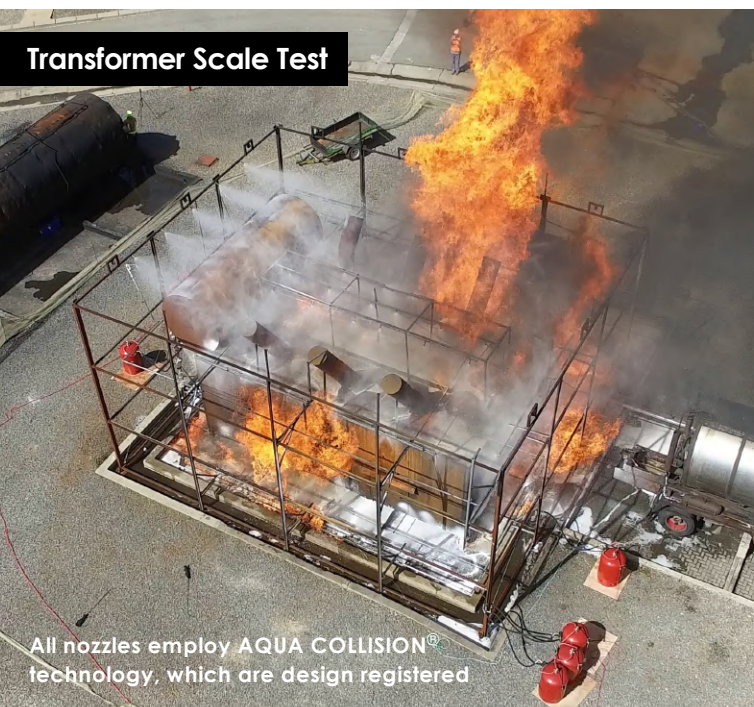
SYSTEM OBJECTIVES

- ❖ Effective fire detection and suppression.
- ❖ Reducing downtime and cleanup after discharge with non-invasive suppression agents.
- ❖ Considers the environment.
- ❖ Easy installation and operation.
- ❖ Cost effective maintenance.

SYSTEM PROPERTIES

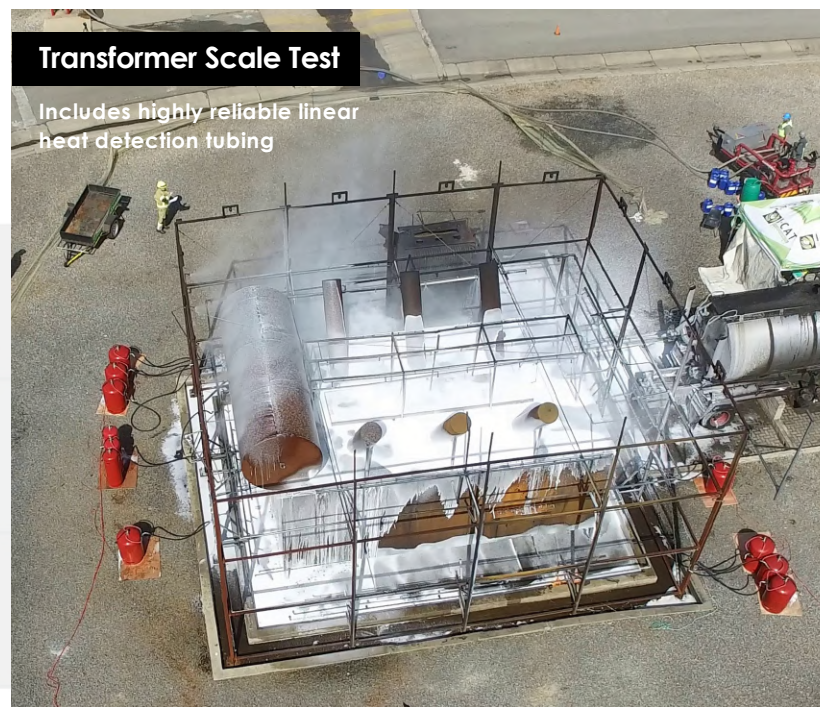
- ❖ The system is available as:
 - ❖ Automatic and manual activation and suppression.
- ❖ Operating temperatures -40°C to 60°C.
- ❖ Seamless integration with third party detection and fire alarm systems.
- ❖ Designed in accordance with NFPA 750 guidelines.

Transformer Scale Test



All nozzles employ AQUA COLLISION[®] technology, which are design registered

Transformer Scale Test



Includes highly reliable linear heat detection tubing

Water mist as a suppression agent is effective in displacing oxygen through its rapid expansion by combating 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 water 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. The system has been tested on scale fires according to NFPA 750: Standard on Water Mist Fire Protection Systems.

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, detection tubing repair and system pressurisation with nitrogen or air. All systems can be reinstated on site and be placed back into service within minutes.

VEHICLE SUPPRESSION SYSTEM

THE SYSTEM INCORPORATES WATER MIST TECHNOLOGY

I-CAT systems incorporate leading international misting technology. The system incorporates **AQUA COLLISION®** technology to create fine atomised mist, charged with kinetic energy to penetrate the heat radiation caused by fire, it leads to gradual cooling without causing thermal shock to equipment. A foam additive, **CLEAVOS AFFE® / FFF®** is added to the system to prevent class B fires from spreading when fuel or hydraulic lines rupture, causing equipment fires.

SYSTEM OBJECTIVES

- ❑ Effective fire detection.
- ❑ Efficient fire suppression.
- ❑ Equipment fire suppression.
- ❑ In-situ reinstatement.
- ❑ Easy installation and operation.
- ❑ Cost effectiveness.

***'protecting your high value
assets against fire risk'***



PRINCIPLES OF OPERATION

Self-contained suppression agent cylinders are mounted on a vehicle, combined with a piping network and nozzles directed at high-risk components, focusing specifically on engine compartments. The system is designed to detect and suppress fires automatically using linear heat detection tubing that is designed to detect fires without the need for electrical infrastructure. The unit can be activated by means of a manual activation switch located at the operator in the cabin. A low-pressure switch is pre-supplied, allowing cutout features for the engine and fuel supply systems. The switch can be integrated with the vehicle's Canbus / Modbus for monitoring.

TRUSTWORTHY

All I-CAT Vehicle Suppression Systems have been designed according to South African, Swedish, Australian and American standards and conform to very rigorous design constraints and protocols. The valve used is patented locally and internationally.



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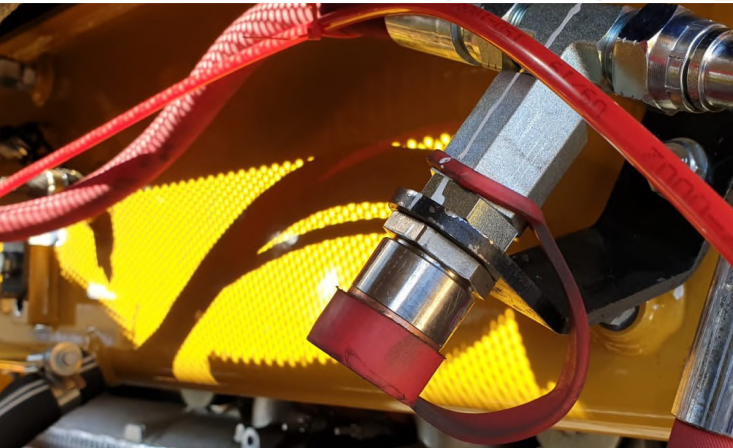
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'no re-ignition after the fire was extinguished'

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 water mist prevents thermal shock and poses no threat to hot surface equipment that may crack or damage through rapid cooling. The system has Class A and B extinguishing capabilities, thus making the need for dual medium extinguishing design unnecessary.



SYSTEM PROPERTIES

- ❏ Manual or automatic detection.
- ❏ An optional vehicle fire panel is available for alarm-, monitoring-, control and integration features.
- ❏ Operating temperatures between -40°C to 60°C, dependent on application.
- ❏ Third party detection systems can be integrated with the system.
- ❏ In-cabin suppression for operator protection.

APPLICATIONS

- ❏ Shovels.
- ❏ Dump trucks.
- ❏ Excavators.
- ❏ Forklifts.
- ❏ Graders
- ❏ Drill rigs.
- ❏ Haulage trucks.
- ❏ Vehicle hydraulics.
- ❏ Pumps and valves.
- ❏ Armoured vehicles.
- ❏ Charge cars.
- ❏ Crawlers.
- ❏ Front end loaders.
- ❏ TLB's

**ALL NOZZLES EMPLOY *AQUA COLLISION®* TECHNOLOGY
WHICH IS DESIGN REGISTERED**

SYSTEM MAINTENANCE

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

'protecting your high value equipment against fire risk'

PROTECTS THE FOLLOWING

- ❏ Conveyor belts (tail pulley, head and tensioner).
- ❏ Transformers.
- ❏ Hydraulic packs.
- ❏ Fuel storage tanks.
- ❏ Oven burners.
- ❏ Wind turbines.
- ❏ Pumps.
- ❏ Lube rooms.
- ❏ Compressors.
- ❏ Generators.
- ❏ Electric motors (and more).



ADVANTAGES

- ❏ Effective fire detection.
- ❏ Reducing downtime and cleanup after activation.
- ❏ Considering the environment.
- ❏ Easy installation and operation.
- ❏ Cost effective maintenance.
- ❏ Stand-alone systems.
- ❏ Any stationary or fixed high value equipment.



'I-CAT'S LOCALISED SUPPRESSION SYSTEMS INCORPORATES NOZZLES THAT WAS TESTED IN ACCORDANCE WITH UL711 GUIDELINES'

The I-CAT Fire Solutions' Localised Suppression System (LSS) was designed to protect your valuable production and industry equipment such as transformers, generators, 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 Water Mist with foam additive 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.

LINEAR HEAT DETECTION TUBING

The specialised pneumatic tubing will detect a fire at elevated temperatures. The pneumatic tubing offers a highly reliable detection and system activation methodology.

I-CAT's Localised Suppression Systems incorporates nozzles that was tested in accordance with UL711 guidelines. The systems are proven safe against conductivity on electrical apparatus and can be used on electrical equipment up to 100 kV.

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 water 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.



THE I-PROTECT® LOW PRESSURE AUTOMATIC FIRE SUPPRESSION SYSTEM WILL ENSURE

- ❖ No collateral 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 and localized applications.



AUTOMATIC DETECTION AND SUPPRESSION SYSTEM BACKGROUND

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 enclosures or rooms containing electrical equipment.

CLEAVOS 1230® ZERO OZONE DEPLETION POTENTIAL GAS (ODP)

CLEAVOS 1230® fire protection agent fluid is a non-flammable, 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).

LINEAR HEAT DETECTION TUBING

The specialised pneumatic tubing will detect a fire at elevated temperatures. When used in conjunction with I-CAT's I-PROTECT® Systems, it offers a highly reliable detection and system activation methodology.



NO COLLATERAL PROPERTY DAMAGE

The I-PROTECT® low pressure automatic fire suppression system is a direct, quick response system. The system consists of linear heat detection tubing, pressurised with an 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
1 kg	Up to 1 m ³
2 kg	Up to 2 m ³
5 kg	Up to 5 m ³



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Apart from localised suppression, the system sizes are also calculated for enclosure total flooding, ensuring the possibility for secondary fires are eliminated.

The I-PROTECT® low pressure automatic fire suppression system consists of a cylinder, detection tube and accessories kit. The systems have been tested in international laboratories and have passed all tests in accordance with LPCB (Loss Prevention Standard LPS1666). Certificate available on request.

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:

- ❑ MCC's & server racks.
- ❑ UPS racks.
- ❑ Electrical distribution boards.
- ❑ PLC's
- ❑ Switchgear.
- ❑ Any enclosure containing high value electrical equipment.

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

- ❑ Linear heat detection tubing available as UL listed components on request.

ROTO-FIRE-PAC®

EMERGENCY QUICK RESPONSE UNIT

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

TECHNICAL SPECIFICATION

Extinguishant	Water + Foaming Agent	
Foaming Agent	CLEAVOS AFFF® 1% (Aqueous Film Forming Foam) or 3F (Fluorine Free Foam)	
Propellant	Nitrogen or Air	
Available Cylinder Sizes	2 x 10.3 Lt Stainless Steel Cylinders	
Operating Pressure at 25°C	1 700 kPa	
Operating Temperature	Standard Unit	5°C to 60°C
	Sub-Zero Unit	-40°C to 60°C
Range	Stream Mode	Mist Mode
Distance	10 – 12 m	7 m
Operating Time	30 seconds	42 seconds

The ROTO-FIRE-PAC® unit incorporates *Water Mist Technology*. This technology is currently at the forefront of fire suppression innovations internationally, extinguishing class A, B, C and F fires by utilising a foam or other pre-approved suppression agent. The unit creates a fine atomized mist, charged with kinetic energy to penetrate the seat of a fire and eliminate heat radiation. The ROTO-FIRE-PAC® ensures gradual cooling without causing thermal shock to equipment and assets, thereby limiting damage.

Applus⁺



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ROTO-FIRE-PAC® IS AN EFFECTIVE QUICK RESPONSE UNIT



UNIQUE FEATURES, EASY TO USE AND EFFECTIVE ON CLASS A, B, C AND F FIRES

THE UNIQUE SUPPRESSION CAPABILITIES OF THE ROTO-FIRE-PAC®

- ❏ Flammable solid substances (e.g. paper and wood).
- ❏ Plastics (e.g. polystyrene and polypropylene).
- ❏ Oil fractions (e.g. diesel, heptane, HFO, mazut).
- ❏ Rubber (e.g. conveyor belts and tyres)
- ❏ Polar liquids (e.g. ethanol, methanol and alcohol).
- ❏ Edible oil (e.g. cooking oil).

EFFECTIVE & SUSTAINABLE

- ❏ Dual functions on the nozzle allow for either jet or mist modes.
- ❏ Increased safety compared to traditional firefighting technologies.
- ❏ Mist mode creates a "halo" that protects firefighters from radiated heat.
- ❏ Jet mode allows the user to suppress fires from a safe distance.
- ❏ Sustainable technology, safe for people, property and the environment.
- ❏ Compact, mobile and user friendly.
- ❏ Simple and affordable to refill.

The ROTO-FIRE-PAC® unit was tested according to UL711 guidelines and are proven safe against conductivity on electrical apparatus up to 100 kV.

APPLICATIONS

- ❏ Mining Proto Teams.
- ❏ Conveyors, tyres etc.
- ❏ Fuel Storage areas.
- ❏ Underground and mining tunnels, fire rescue services, etc.
- ❏ Used in conjunction with and to compliment the I-CAT Blaze Buster® as effective quick response systems.



BLAZE BUSTER®

RAPID RESPONSE FOAM UNIT

TECHNICAL SPECIFICATIONS

The BLAZE BUSTER® unit was tested in accordance with UL711 guidelines and proven safe against conductivity on electrical apparatus up to 100 kV.

SPECIFICATION	VALUE		
Extinguishant	Water + Foaming Agent / Surfactant		
Foaming Agent	CLEAVOS AFFF® 1% (Aqueous Film Forming Foam) or FFF (Fluorine Free Foam)		
Propellant	Nitrogen or Compressed Air		
Operating Pressure at 25°C	1 700 kPa		
Operating Temperature	Standard Unit	5°C to 60°C	
	Sub-Zero Unit	-40°C to 60°C	
Total Weight (Filled)	1 085 kg		
Effective Range	Canon	BB Gun (Mist)	BB Gun (Stream)
	Up to 45 m	6 m	Up to 18 m
Min Effective Operating Time	80 – 90 seconds		

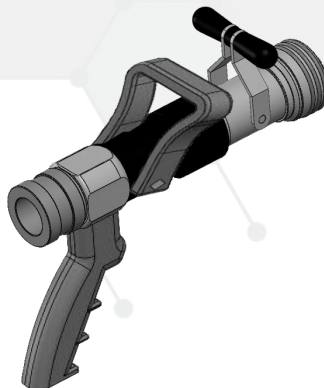
The **BLAZE BUSTER®** is a rapid response, self-contained water mist unit, capable of extinguishing class A, B, C and F fires.

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

The **BLAZE BUSTER®** does not require any startup time and is ready to suppress fires immediately.

The **BLAZE BUSTER®** can be supplied as a skid unit, fitted onto a single or extra cab pickup or pre-installed on a customised trailer.

The **BLAZE BUSTER®** has a high-performance cannon with a discharge range of up to 45 metres. In addition, the unit is fitted with a retractable hose reel and firefighting gun for easy reach.



APPLICATIONS & USES

- 🔦 Military.
- 🔦 Aviation (airports & airfields).
- 🔦 Petroleum Storage.
- 🔦 High Rise Structures.
- 🔦 Industry & Manufacturing.
- 🔦 Mining.
- 🔦 Forestry, Agriculture.
- 🔦 Oil & Fuel Refineries.
- 🔦 Residential Estates.



EASY TO OPERATE, VERSATILE AND EXTREMELY EFFECTIVE

The **BLAZE BUSTER®** is easy to refill and can be reinstated in a short period after discharge. The cylinders are refilled with water and a foam additive, pressurised with nitrogen or compressed air and ready for use within minutes.



'EXTINGUISHING CLASS A, B, C AND F FIRES

with minimal to no damage'

EXTINGUISHING LIVE ELECTRICAL EQUIPMENT

- ❏ Water Mist Technology extinguishes live electrical equipment with no risk of electrocution to firefighters under the correct operating conditions.
- ❏ 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 heat radiation and smoke.
- ❏ A totally sustainable technology: Completely safe to 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, as it causes no irritation or burns.

I-CAT's water and foam mist extinguishers have been tested in accordance with UL711 guidelines and are proven safe against conductivity on electrical apparatus and can be used on electrical equipment up to 100kV.

ADVANTAGES OF FIREFIGHTING MIST

HIGH FIREFIGHTING EFFECTIVENESS

In traditional extinguishers 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 Water Mist Extinguishers create a mist that evaporates from surfaces up to 100% depending on the dispersion degree.

EXTRA SAFETY

The mist creates an ideal barrier against thermal radiation.

POST FIRE DAMAGE REDUCTION

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

- ❖ Flooding of the equipment with water.
- ❖ Contamination with active chemical extinguishing powder.

I-CAT's Water Mist Technology has a high degree of dispersion which almost 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 up of water and / or inorganic salt solutions.

Water mist extinguishers are safe to use in enclosed areas, as opposed to powder extinguishers that can cause suffocation when discharged in an enclosed environment.



FIRE SPRINKLER SYSTEM

I-CAT Fire Solutions is Your Trusted Partner in Fire Safety Compliance to SANS, ASIB, NFPA, and FM Standards

TAILORED FIRE SPRINKLER SYSTEMS

I-CAT delivers advanced sprinkler solutions to protect your property, combining technology and compliance for all environments.

- ❏ **Wet Pipe:** Delivers the quickest fire response in heated environments such as offices and schools, minimising damage, and downtime.
- ❏ **Dry Pipe:** Designed for areas like cold room warehouses, preventing water from entering pipes until activation to avoid freezing.
- ❏ **Pre-Action:** Offers dual-activation, safeguarding for sensitive areas such as server rooms, reducing the risk of accidental water discharge.
- ❏ **Deluge:** Provides an instant, high-volume water flow for high-risk areas like chemical plants and fuel storage facilities.
- ❏ **ESFR (Early Suppression Fast Response):** Rapidly suppresses fires in high-stacked warehouse storage, aiding in safeguarding inventory and operations.

HYDRANT AND STANDPIPE SYSTEMS RELIABLE FIRE-FIGHTING ACCESS ACROSS YOUR FACILITY:

- ❏ **Fire Hydrants:** Positioned to meet codes for emergency response.
- ❏ **Hose Reels & Standpipes:** Class I-III solutions for multi-level buildings.
- ❏ **Ring Main Networks:** Custom pipelines for consistent water supply.

EXPERT DESIGN

Our AutoCAD and hydraulic modelling ensure efficient, compliant designs (tree, loop, or grid) tailored to your needs.



WATER STORAGE AND PUMPS DEPENDABLE SYSTEMS FOR FIRE PROTECTION

- ❏ **Prefabricated Tanks:** Compliant with SANS, ASIB, NFPA, and FM standards.
- ❏ **Fire Pumps:** Electric and diesel, sized for your site with redundancy.
- ❏ **Specialized Solutions:** Containerized or vertical turbine pumps for high-risk settings.

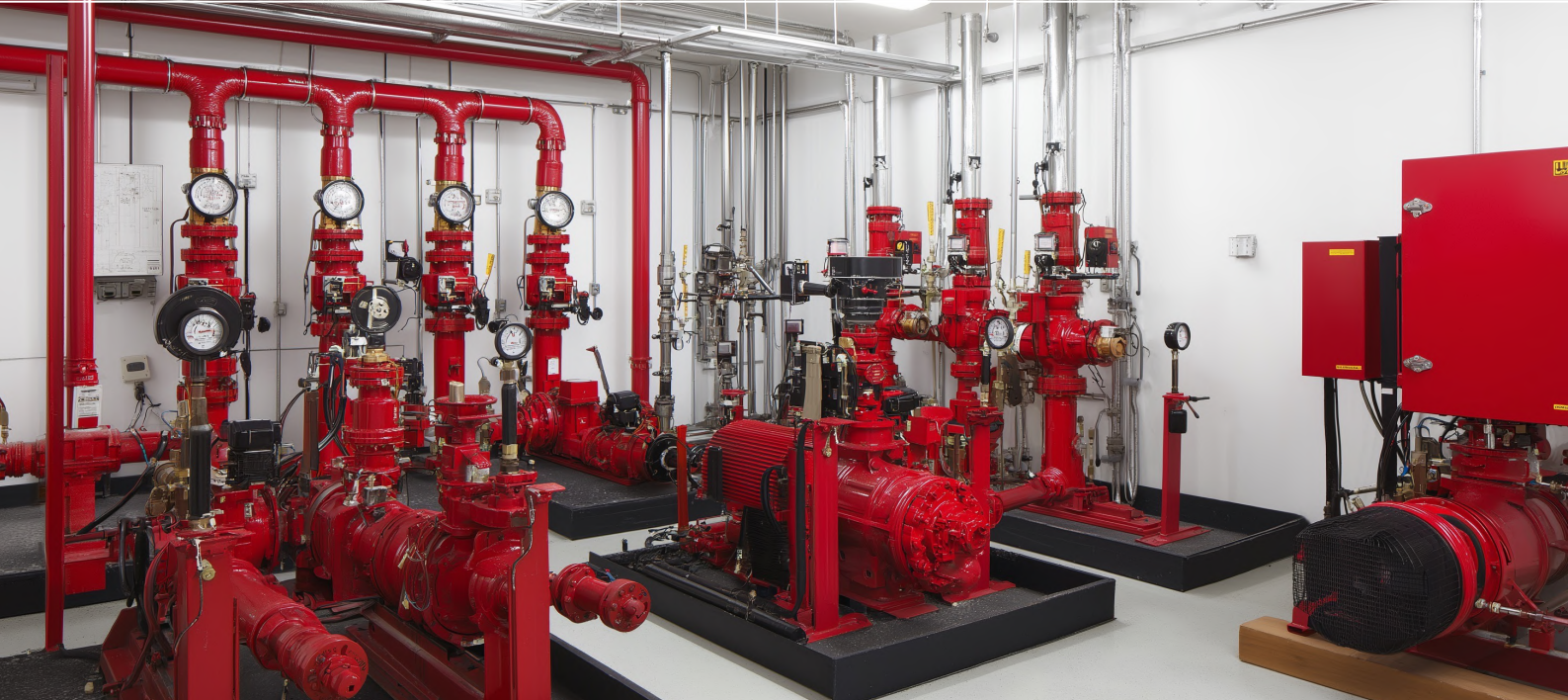
"GIVING YOU PEACE OF MIND WHERE YOU NEED IT MOST"

FULL-SERVICE FIRE PROTECTION END-TO-END SERVICES ENSURE READINESS

- ❏ **Design & Approvals:** Compliant engineering for seamless regulatory approval.
- ❏ **Installation:** Certified, high-quality setups by competent teams.
- ❏ **Training & Commissioning:** System testing and staff training.

MAINTENANCE PROGRAMS KEEP SYSTEMS RELIABLE WITH

- ❏ **Regular Inspections:** Ensure compliance and performance.
- ❏ **Certified Testing:** Rigorous tests by trained technicians.



I - FLOOD

TOTAL FLOODING - CLEAN AGENT SYSTEM

PROTECT YOUR DATA CENTRES, SERVER ROOMS, AND ELECTRICAL INFRASTRUCTURE

Safeguard your mission-critical environments with our state-of-the-art **Total Flooding Clean Agent Systems**. Designed for rapid, residue-free fire suppression, these systems ensure the safety of your data centres, server rooms, and electrical infrastructure without compromising equipment or operations.

WHY CHOOSE OUR CLEAN AGENT SYSTEMS?

- Residue-Free Protection:** Clean agents leave no residue, preserving sensitive electronics and equipment.
- Environmentally Friendly:** Uses eco-conscious agents like Cleavos 200® or Cleavos 1230® zero ozone depletion potential gas (ODP). Safe for occupied spaces.
- Precision Design:** Tailored to protect high-value assets in data centres, server rooms, and electrical rooms.
- Compliance & Safety:** Meets NFPA 2001 standards for clean agent fire suppression systems.

KEY APPLICATIONS

- Data Centres:** Protect critical servers and IT infrastructure from fire-related disruptions.
- Server Rooms:** Ensure uptime with fast, effective fire suppression that won't harm sensitive equipment.
- Electrical Infrastructure:** Safeguard control rooms, switchgear, and other vital electrical systems.



A total flooding fire suppression system is an advanced fire protection system that rapidly fills an entire enclosed space with a fire-extinguishing agent to extinguish or contain a fire. It's a type of fixed fire suppression system, designed for areas where a fire could quickly spread, like server rooms or engine rooms.

HOW IT WORKS

1. **Detection:** Advanced sensors detect fire or smoke in seconds.
2. **Activation:** The system releases a clean agent gas, uniformly flooding the protected area.
3. **Suppression:** The agent extinguishes the fire by interrupting the combustion process without water or residue.
4. **Recovery:** Post-suppression, the area is safe for immediate re-entry, with no cleanup required.



BENEFITS TO YOUR BUSINESS

- 🔧 **Minimized Downtime:** Quick suppression and no residue mean faster recovery.
- 🔧 **Equipment Longevity:** Non-corrosive agents protect valuable hardware.
- 🔧 **Scalable Solutions:** Systems customized to fit spaces of any size or complexity.
- 🔧 **Peace of Mind:** 24/7 protection for your critical infrastructure.



Total flooding systems are used to protect high-value assets, business processes, and people by rapidly extinguishing or containing fires in enclosed spaces. These systems are particularly useful in areas with multiple electrical and electronic devices, such as server rooms, where the risk of fire is high due to the concentration of potential ignition sources.

“Mitigating Risk. Protecting Investment. Pioneering Safety.”

THE CRITICAL FIRE RISKS IN SOLAR INSTALLATIONS

Our system is engineered to address the most common fire risks, as identified by leading international authorities (NFPA, ISE, UL, IEA, SAPVIA):

- 1. Improper Installation & Workmanship:** The #1 cause. Faulty MC4 connectors, incorrect torque, and poor cable management create high-resistance points that overheat.
- 2. Inverter/Charger Failure:** A potential ignition source for electrical fires.
- 3. BESS Failure (External Trigger):** Overcharging, external shorts, or overheating causing a battery incident.
- 4. BESS Failure (Internal Origin):** A rare but severe internal cell short circuit.

OUR PATENTED PHILOSOPHY IS SIMPLE

Detect Early, Isolate Instantly, Suppress Effectively.

RISK	I-CAT MITIGATION STRATEGY
All Electrical Risks (Faulty Connectors, Cabling, Enclosures)	Instant DC Isolation: DC isolation devices, isolate a number or all string, cutting power at the source, eliminating electrocution risk and stopping the fire's energy supply. Targeted Suppression: Our I-Protect® DLP gas systems in all enclosures (combiner boxes, inverters, etc.) suppresses fires at their origin.
Cable & Panel Fires	Early Detection: Linear Heat Detection Cables (LHDC) in all cable trays and under solar panels provide the earliest possible warning of overheating or flame ignition.
Battery (BESS) Fires	Comprehensive Protection: A dedicated Clean Agent Gas or Water Mist Total Flooding system protects the battery room, controlling the most challenging fires.
All Risks	Unified Intelligence: All detection and isolation devices are interlinked through a central Fire Alarm Control Panel and or IoT devices, providing real-time alerts and enabling manual override for ultimate safety and control.



I-CAT. DON'T JUST DETECT DANGER. NEUTRALIZE IT!

OUR WORKING PHILOSOPHY: INTEGRATED PROTECTION

The I-CAT System is a holistic ecosystem designed to work in unison:

1. **ISOLATE:** De-energize the DC side instantly with automatic and manual string isolation, ensuring firefighter safety.
2. **DETECT:** Identify thermal events at the very beginning with Linear Heat Detection cables in high-risk zones (cable trays, under panels).
3. **SUPPRESS:** Deploy the correct suppressant directly onto the fire source, low-pressure gas in enclosures, total flooding in battery rooms.
4. **ALERT:** Notify personnel immediately via connected IoT and fire alarm systems for rapid response.



Contact us Today for a safer Tomorrow.

I-CAT IS A



ISO
9001:2015
MANAGEMENT
SYSTEM

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'change that doesn't cost the earth'

ENVIRONMENTAL SOLUTIONS IN



FIRE



DUST



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