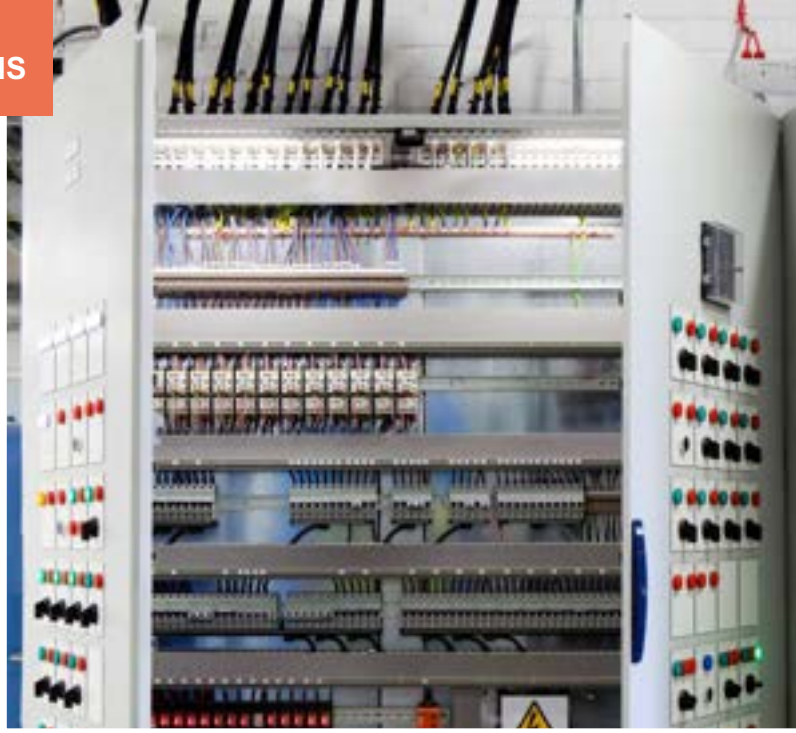
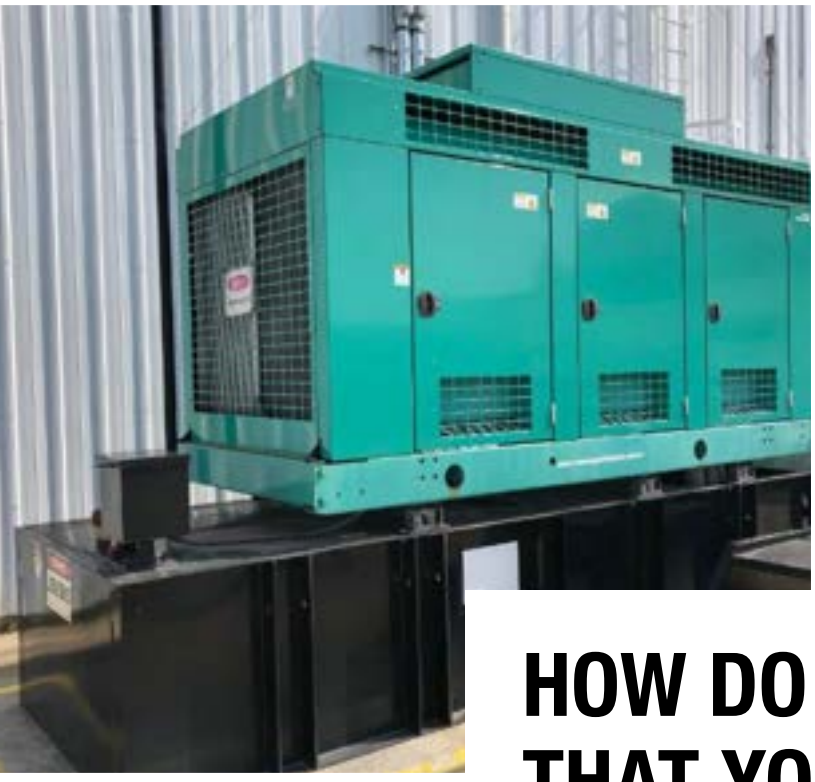
FIRE PROOFING

MICRO ENCLOSED SPACES

CEASEFIRE TUBE BASED SUPPRESSION SYSTEMS

CEASEFIRE **TUBE BASED SUPPRESSION SYSTEMS**





HOW DO YOU FIGHT FIRE THAT YOU CAN'T EVEN SEE

Every premises, big or small, whether residential, commercial, office or leisure space, has certain vulnerable spots that are always high on the fire risk. These are also often enclosed micro spaces such as electrical panels, MCB boxes, Fume Hoods, Server Racks, Generators or CNC machines that become the source of fire due to a short circuit resulting from faulty wiring, loose fittings, power fluctuation or overheating.

Fire fighting in such high risk spaces becomes challenging due to the fact that they are enclosed in nature and often situated in a remote location within the premises, making manual fire detection impossible, till it reaches a point when flames have already reached dangerous intensity levels.

What makes matters worse for anyone trying to extinguish fire in such spaces is that they are most often electrically charged and live, making the risk of electrocution high. On the other hand, availability of trained firefighters at the site with appropriate fire extinguishing equipment with the right extinguishing agent, is never guaranteed.

ANSWERING THE CHALLENGE

Fire-proofing such high risk enclosed spaces in a premises many times is equal to fire-proofing the entire premises. This is because fault lines on fire safety are plugged in the premises when such spaces are safeguarded.

Need of the hour is of specialised fire suppression systems that are one, automatic in nature as manually monitoring such spaces 24x7 is virtually impossible and two, the suppression system must be specifically designed to protect such high risk enclosed spaces.

THE NEED OF THE HOUR

The need for automatic fire detection and suppression in such spaces is important also because the fire needs to be quelled the very minute it is detected and needs to be extinguished while it is still small. Any delay in this can easily lead to fire spreading into surrounding areas in a premises taking the fire emergency to a whole new level.

Whereas the need for suppression systems to be designed specifically for such spaces is important because the systems need to arrest the unique characteristics of the fire risk present in these spaces. Whenever we depend on generic fire safety equipment available at the premises like fire extinguishers or total flooding for such hot-spot spaces, it is often a delayed response and the damage is already caused.

Also, what is the point in flooding the entire room or premises with hundred KGs of extinguishant (could be expensive clean agent gas in a total suppression system present at the site or high-collateral-damage-causing conventional agents like ABC powder or water) when all that was needed to be done was to extinguish flames in a small cabinet.

A GROUND-BREAKING FIREFIGHTING SOLUTION

Considering the need for automatic fire protection, Ceasefire presents an In-Panel Tube Based System for micro enclosed spaces, specifically designed to protect high risk enclosed spaces. This system is driven by a Heat Sensing Tube based fire detection and a mechanical and automatic fire suppression by a localised fire extinguishant available in a stored-pressure form.

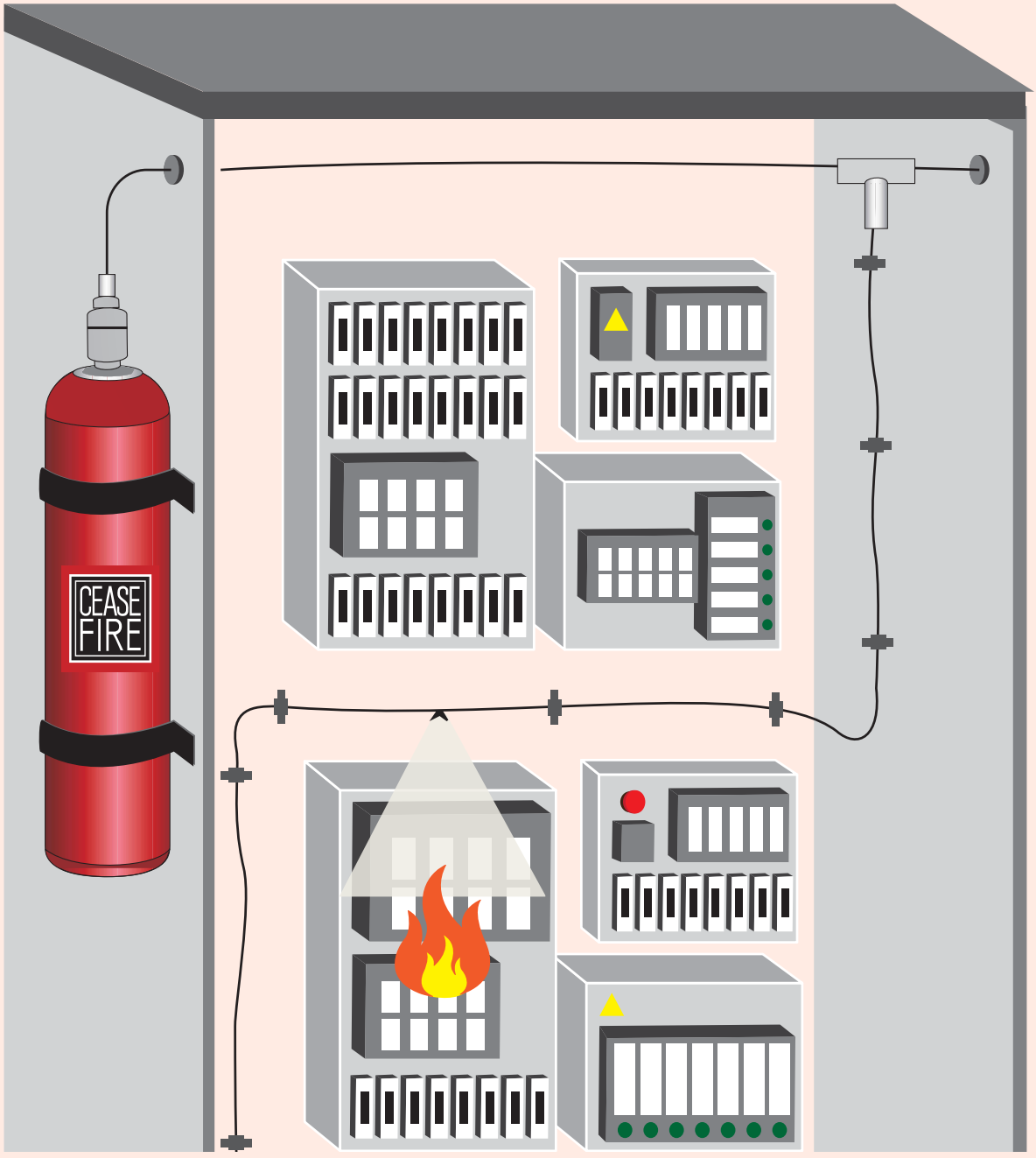
The system is designed specially to protect high risk enclosed spaces considering the complexed construction, shape and characteristics of such spaces such as electrical panels, MCB boxes, server racks, CNC machines, etc where the fire risk is randomly distributed inside these spaces and any point inside could become a source of fire due to the complex nature of wirings, integrated circuits, fuses and power connections present inside.

A signature component in Ceasefire's In-Panel Tube Based Systems is the specially designed heat-sensitive pneumatic polymer tube. In the event of a fire, the heat-sensitive tube detects an increase in temperature and bursts upon coming into contact with flames, activating the system automatically and extinguishing the fire at the source.

HOW THE SYSTEM WORKS?

This heat-sensitive pneumatic polymer tube is connected to an extinguishing agent container at one end, while the rest of it runs unobtrusively inside the micro space that needs to be fire protected, covering all high risk points inside the space. In the event of a fire, the flames come in contact with this heat-sensitive tubing and upon reaching a temperature level of 150° - 180°C, this tube bursts open and activates the system.

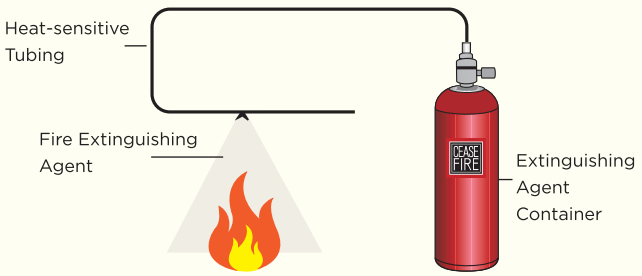
The technology makes this system entirely self-activated, and requires no human intervention once it has been installed. This makes it especially beneficial for high risk micro- environments that are vulnerable to fire and cannot be manually monitored 24x7.



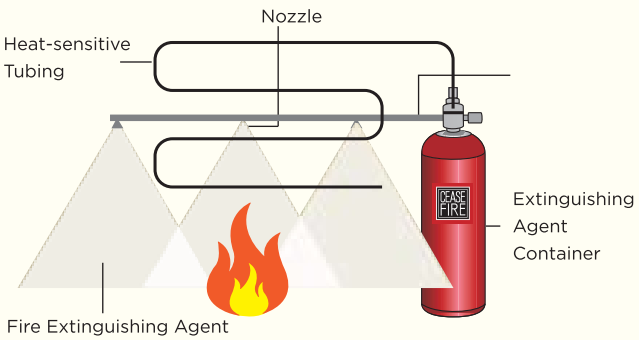
THE TWO PRIME SYSTEM

The system is available in two prime technologies and the choice of selection of the system variant depends upon the nature of the space that needs to be protected.

DIRECT SYSTEM

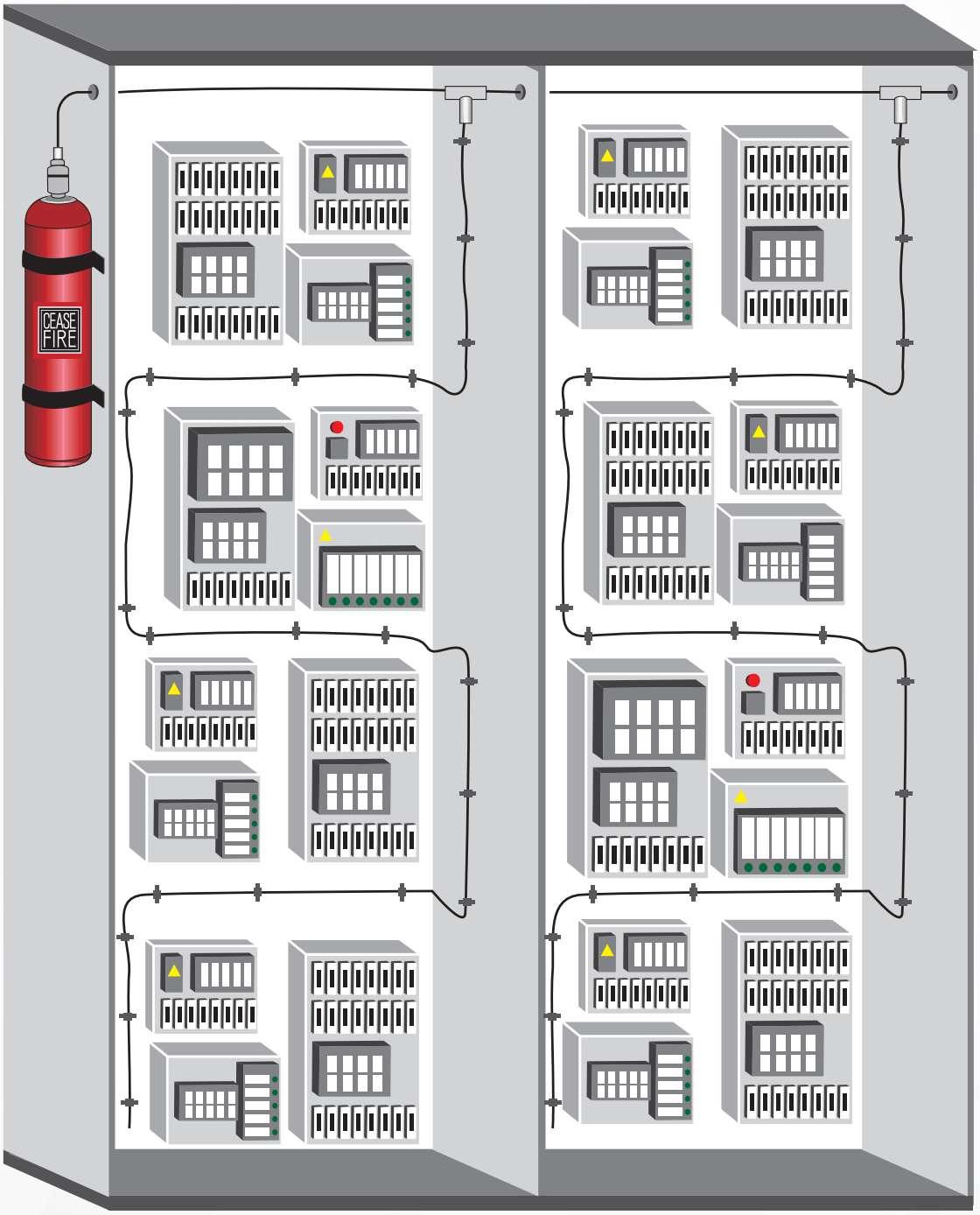


INDIRECT SYSTEM



1. THE DIRECT SYSTEM

In the Direct System the heat-sensitive tubing acts as an extinguishing agent delivery system. The tube bursts at the point where the fire is detected, forms a miniature nozzle and sprays the extinguishing agent. This system can run intricately and unobtrusively through Panels, MCBs, Gensets and electrical mains boxes that are often compartmentalised in nature, and is triggered instantly and automatically. This eliminates the need for human intervention and provides a swift and comprehensive solution. This is available in low-pressure and high-pressure systems.

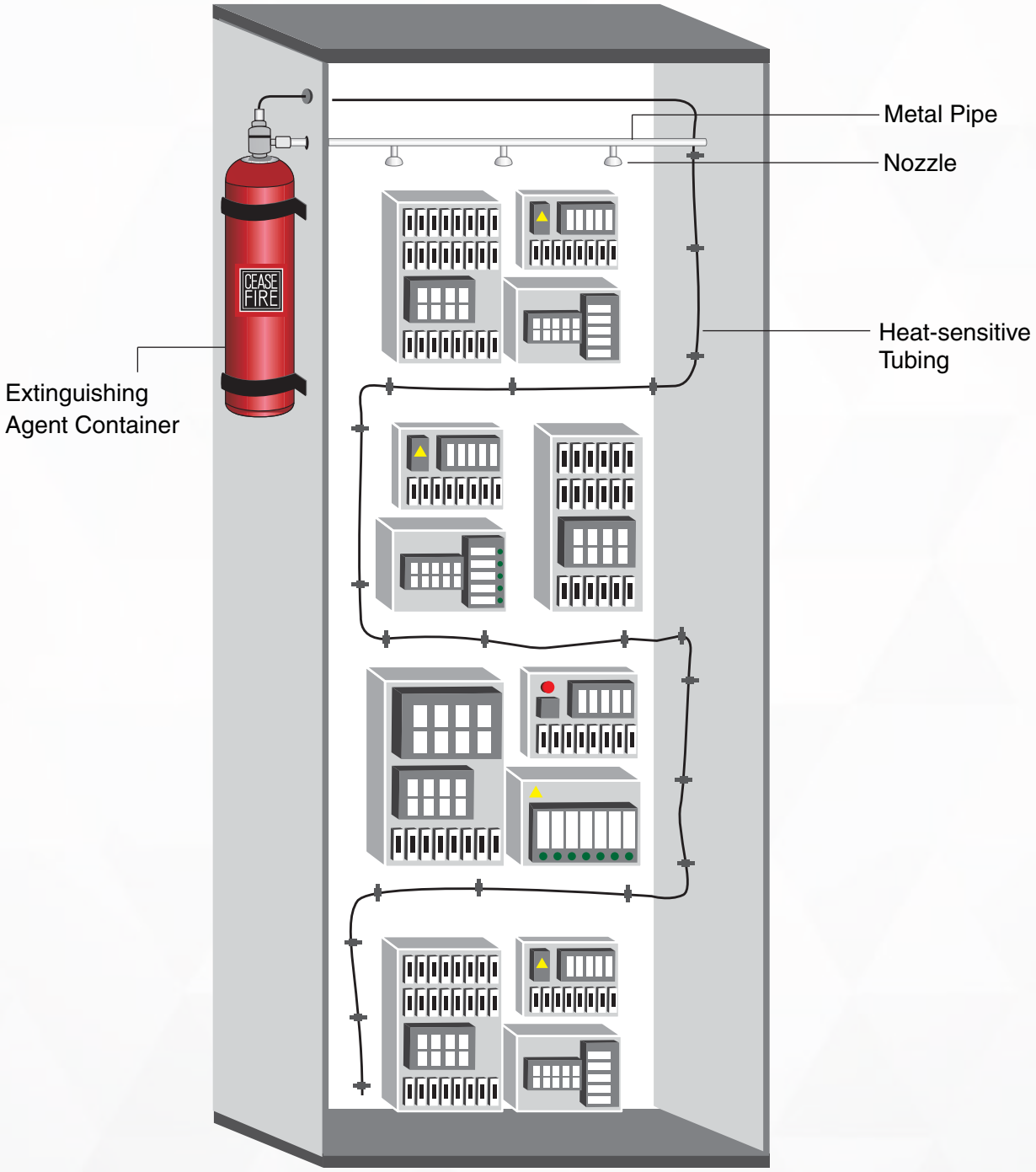


VARIANTS

	Fluoroketone (FK)	CO_2	ABC Dry Powder (MAP 90)	Foam (Fluorine Free)
Direct Low Pressure	NA	NA	1 kg	1 ltr
	NA	NA	2 kg	NA
	3 kg	NA	NA	3 ltr
	4 kg	NA	4 kg	NA
	6 kg	NA	NA	6 ltr
	9 kg	NA	NA	9 ltr
Direct High Pressure	NA	2 kg	NA	NA
	NA	5 kg	NA	NA

2. THE INDIRECT SYSTEM

In the Indirect system, the heat-sensitive tubing only acts as a detection device. The extinguishing agent is delivered through a steel conduit and sprayed across the entire area through strategically placed nozzles. This system configuration is ideal for spaces that are non-compartmentalised and total flooding in the entire cabinet / chamber is possible. For example, in a large electrical cabinet, where a voltage surge can short-circuit components at multiple locations and cause them to catch fire. This system variant too is available in both, low-pressure and high-pressure systems.



VARIANTS

	Fluoroketone (FK)	CO_2	ABC Dry Powder (MAP 90)	Foam (Fluorine Free)
Indirect Low Pressure	2 kg	NA	2 kg	2 ltr
	3 kg	NA	NA	3 ltr
	4 kg	NA	4 kg	NA
	6 kg	NA	6 kg	6 ltr
	9 kg	NA	9 kg	9 ltr
	NA	2 kg	NA	NA
Indirect High Pressure	NA	5 kg	NA	NA
	NA	22 kg	NA	NA

DIVERSE RANGE OF EXTINGUISHING AGENTS TO ADDRESS A VARIETY OF APPLICATIONS

Ceasefire's In-Panel Tube Based Suppression System offers flexibility of configuration not only in terms of the Direct and In-Direct System configuration, but also on the basis of wide variety of extinguishing agents like ABC MAP90 Powder, Fluoroketone (FK) and Foam (Fluorine Free) in Low-Pressure Technology, and CO_2 in High-Pressure Technology, making it possible for system designers to configure any type of a micro-environment suppression system to suit any kind of an application to address its unique fire risks.

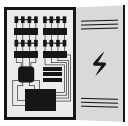
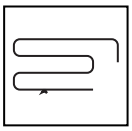
ABC Powder MAP 90

Foam (Fluorine Free)

Fluoroketone (FK)

CO_2

SYSTEM FEATURES

	**Classification** Fights Class A, B, C and Electrically started fires.
	**Application** Ideal for places where fires can break out in localised areas.
	**Self – Contained** Does not require any power supply and will function normally in the event of a power outage.
	**Wide Choice of Agents** The system comes in a host of extinguishing agents like ABC MAP90 Powder, Fluoroketone (FK), Foam (Fluorine Free) in Low Pressure and CO_2 in High Pressure technology, making the system highly versatile and applicable to a large number of spaces.
	**Instant Self-activation** Eliminating the need for human intervention, the system is in a perpetual state of readiness to combat a fire as soon as it breaks out.
	**Extended Reach** Flexible tubing extends protection to areas that are difficult to access and may not be able to accommodate any other means of detection.
	**Easy Installation** Simple design, and can be installed within a few hours, which means a significant reduction in labour costs and downtime
	**Rugged Design** Can withstand even harsh conditions where other types of detection systems might be rendered inadequate.
	**Certifications** BSI tested, LPCB, UL, PED and UKCA-PED certified

CONTROL PANEL

An In-Panel Fire Suppression System is a mechanical, pressurized system activated on the principle of pressure differential. By digitally monitoring these systems, one can ensure they are always ready to respond. In larger premises with scaled-up systems, it's even more essential to have the system in working condition.

Ceasefire's In-Panel Fire Suppression System comes equipped with a state-of-the-art Control Panel that monitors up to four-cylinder systems.

Plus, the provision allows monitoring of the status of each of these four system valves and pressure switches.

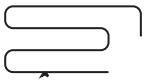
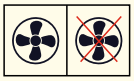
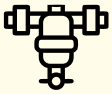
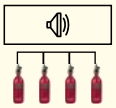
Ceasefire's Control Panels come equipped with a relay output that enables users to install additional Hooters (sound alarms) and Lamp Flashers (visual indicators) on the Detection Line.

They can be installed near the system anywhere, depending on the requirements of the premise or the user.

WHY CHOOSE CEASEFIRE **TUBE BASED DIRECT SYSTEMS?**

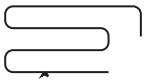
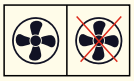
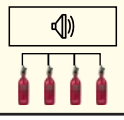
DIRECT LOW PRESSURE FLUOROKETONE (FK) BASED SYSTEM

Key Highlights

	UL listed, UV protected, Multi-layered, Modified Polyamide, Heat Sensing Tube for superior fire detection and longevity.
	Distinctive rupture characteristics of the tube creates a miniature nozzle-like discharge port, directly aiming the discharge towards the heat/fire source.
	LPCB Certified system under LPS1666 standard.
	LPCB Certified system for Forced and Natural Air Flow cabinet applications.
FK	Based on clean Fluoroketone gas (FK-5-1-12) as an extinguishing agent.
	TPED and Pi Mark certified valve.
CE 1128	Cylinders certified for PED approval by EU notified body.
	Integrated Ball Valve designed to minimise leakages.
	Reed switch to monitor the readiness status of the system.
	All connectors, sealings and fittings sourced from one OEM in EU for seamless integration and long-term trouble free operation.
	Pressure Gauge with Switch multitasks for both, visual monitoring and integration with third party devices.
	Response Panel with in-built hooter and flasher is capable of monitoring up to 4 cylinder systems.
	Back-lit LCD screen of the Response panel clearly displays the event / status of the system in low / no visibility conditions.
	Response panel with intelligent battery recharging system to cater to different battery types.

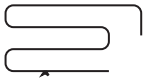
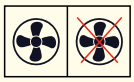
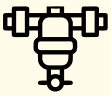
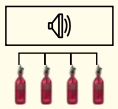
DIRECT LOW PRESSURE ABC POWDER AND FOAM (FLUORINE FREE) BASED SYSTEMS

Key Highlights

	UL listed, UV protected, Multi-layered, Modified Polyamide, Heat Sensing Tube for superior fire detection and longevity.
	Distinctive rupture characteristics of the tube creates a miniature nozzle-like discharge port, directly aiming the discharge towards the heat/fire source.
bsi. Tested	BSI tested system.
	BSI tested for Forced and Natural Air Flow cabinet applications.
	ABC Powder and Foam (Fluorine Free) as extinguishing agent options for a wide variety of applications.
CERTIFIED	TPED certified valve.
CE 1128	Cylinders certified for PED approval by EU notified body.
OEM	All connectors, sealings and fittings sourced from one OEM for seamless integration and long-term trouble free operation.
	Pressure Gauge with Switch multitasks for both, visual monitoring and integration with third party devices.
	Response Panel with in-built hooter and flasher is capable of monitoring up to 4 cylinder systems.
FIRE	Back-lit LCD screen of the Response panel clearly displays the event / status of the system in low/ no visibility conditions.
	Response panel with intelligent battery recharging system.

DIRECT HIGH PRESSURE CO_2 BASED SYSTEM

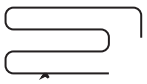
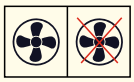
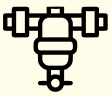
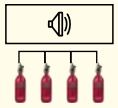
Key Highlights

	UL listed, UV protected, Multi-layered, Modified Polyamide, Heat Sensing Tube for superior fire detection and longevity.
	Distinctive rupture characteristics of the tube creates a miniature nozzle-like discharge port, directly aiming the discharge towards the heat/fire source.
bsi. Tested	BSI tested system.
	BSI tested for Forced and Natural Air Flow cabinet applications.
	Based on CO_2 as an extinguishing agent.
CERTIFIED	PESO and TPED certified valve.
CE 1128	Cylinders certified for PED approval by EU notified body.
	Integrated Ball Valve designed to minimise leakages.
	Reed switch to monitor the readiness status of the system.
OEM	All connectors, sealings and fittings sourced from one OEM for seamless integration and long-term trouble free operation.
	Pressure Gauge with Switch multitasks for both, visual monitoring and integration with third party devices.
	Response Panel with in-built hooter and flasher is capable of monitoring up to 4 cylinder systems.
FIRE	Back-lit LCD screen of the Response panel clearly displays the event / status of the system in low/ no visibility conditions.
	Response panel with intelligent battery recharging system to cater to different battery types.

WHY CHOOSE CEASEFIRE
TUBE BASED INDIRECT SYSTEMS?

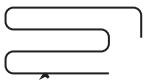
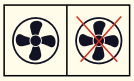
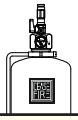
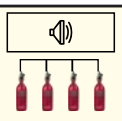
INDIRECT LOW PRESSURE FLUOROKETONE (FK) BASED SYSTEM

Key Highlights

	UL listed, UV protected, Multi-layered, Modified Polyamide, Heat Sensing Tube for superior fire detection and longevity.
	BSI tested system.
bsi. Tested	Agent discharge through specialised nozzles via separate discharge line.
	BSI tested for Forced and Natural Air Flow cabinet applications.
FK	Based on clean Fluoroketone gas (FK-5-1-12) as an extinguishing agent.
	TPED and Pi Mark certified valve.
CE 1128	Cylinders certified for PED approval by EU notified body.
	Integrated Ball Valve designed to minimise leakages.
	Reed switch to monitor the readiness status of the system.
	All connectors, sealings and fittings sourced from one OEM in EU for seamless integration and long-term trouble free operation.
	Pressure Gauge with Switch multitasks for both, visual monitoring and integration with third party devices.
	Response Panel with in-built hooter and flasher is capable of monitoring up to 4 cylinder systems.
	Back-lit LCD screen of the Response panel clearly displays the event / status of the system in low / no visibility conditions.
	Response panel with intelligent battery recharging system to cater to different battery types.

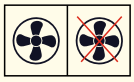
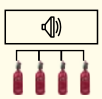
INDIRECT LOW PRESSURE ABC POWDER AND FOAM (FLUORINE FREE) BASED SYSTEMS

Key Highlights

	UL listed, UV protected, Multi-layered, Modified Polyamide, Heat Sensing Tube for superior fire detection and longevity.
	Agent discharge through specialised nozzles via separate discharge line.
bsi. Tested	BSI tested system.
	BSI tested for Forced and Natural Air Flow cabinet applications.
	ABC Powder and Foam (Fluorine Free) as extinguishing agent options for a wide variety of applications.
	TPED certified valve.
CE 1128	Cylinders certified for PED approval by EU notified body.
	All connectors, sealings and fittings sourced from one OEM for seamless integration and long-term trouble free operation.
	Pressure Gauge with Switch multitasks for both, visual monitoring and integration with third party devices.
	Response Panel with in-built hooter and flasher is capable of monitoring up to 4 cylinder systems.
	Back-lit LCD screen of the Response panel clearly displays the event / status of the system in low/ no visibility conditions.
	Response panel with intelligent battery recharging system.

INDIRECT HIGH PRESSURE CO_2 BASED SYSTEM

Key Highlights

	UL listed, UV protected, Multi-layered, Modified Polyamide, Heat Sensing Tube for superior fire detection and longevity.
	Agent discharge through specialised nozzles via separate discharge line.
bsi. Tested	BSI tested system.
	BSI tested for Forced and Natural Air Flow cabinet applications.
	Based on CO2 as an extinguishing agent.
CERTIFIED	TPED certified valve.
CE 1128	Cylinders certified for PED approval by EU notified body.
	Integrated Ball Valve designed to minimise leakages.
	Reed switch to monitor the readiness status of the system.
OEM	All connectors, sealings and fittings sourced from one OEM for seamless integration and long-term trouble free operation.
	Pressure Gauge with Switch multitasks for both, visual monitoring and integration with third party devices.
	Response Panel with in-built hooter and flasher is capable of monitoring up to 4 cylinder systems.
FIRE	Back-lit LCD screen of the Response panel clearly displays the event / status of the system in low/ no visibility conditions.
	Response panel with intelligent battery recharging system to cater to different battery types.

PRE-ENGINEERING THE INNOVATION

At Ceasefire, we not only understand the paramount significance of safeguarding high-risk micro-environments but also the complexities involved in acquiring such specialised systems for your premises. This is why we innovated and brought for our customers the In-Panel Fire Suppression Systems in a Pre-Engineered version. These systems are meticulously designed to offer instant, off-the-shelf, ready-to-deploy fire safety solutions for high-risk enclosed spaces.

Ceasefire's Pre-engineered Fire Suppression Systems are designed as pre-configured and pre-packaged solutions, incorporating standardised system components in their quick-to-install and ready-to-use form.

These systems have been optimised to streamline your fire protection processes, ensuring that we have a system version available to suit your specific requirements.

THE PRE-ENGINEERED ADVANTAGE

The biggest advantage of the Ceasefire's Pre-Engineered Suppression Systems is that it makes the specialised engineered fire suppression systems easily available to one and all.

Designed to be compact, swift to set up, and tailored to provide fire protection in smaller enclosures, the pre-engineered version of the system makes it highly versatile to fireproof a wide variety of spaces such as electrical panels, server rack cabinets, engine compartments, CNC machines, wind turbines, and many more.

These pre-engineered systems consist of pre-fabricated components such as the pressurised heat sensing tube with a predefined length, pre-pressurised agent container, and a set number of pressure fittings.

Why Choose Pre-Engineered Systems?

Eases the process of purchase for the customer

The pre-engineered systems take away all the confusion involved in buying a specialised fire suppression system by making it easy for the customers to pick a system variant that is most suitable for them.

Saves time and effort

Buying a pre-engineered system that has clear specifications and pricing facilitates quick and seamless buying experience for customers by saving time and complexities involved in buying engineered systems.

Optimise your sales process

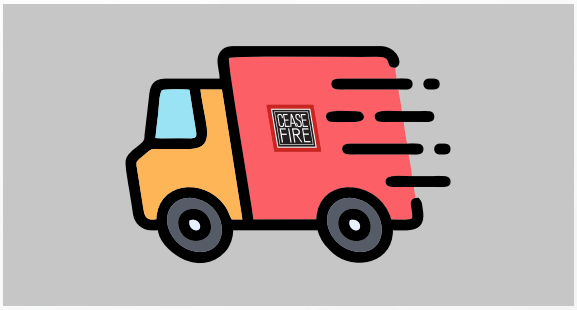
The pre-engineered range ensures a transparent and easy to comprehend pricing structure which aids in the clarity and predictability of transactions by cutting out many stages involved in the buying process otherwise.

Simple and Quick Installation

The Ceasefire Pre-Engineered In-Panel Fire Suppression System eliminates the necessity for extensive infrastructure. The system can be installed with minimum tools and in a time efficient manner.

Simplifies shipping

These pre-packed and pre-configured systems come in customised box packing for ease of transit.



THE SYSTEM VARIANTS

Ceasefire's pre-engineered systems not only prioritise simplicity but also offer versatility through their pre-designed options. These configurations are readily available for customers to choose a variant that suits their specific needs.

PRE-ENGINEERED FLUOROKETONE (FK) VARIANTS

Name	Description	Product Code	Packaging Box Dimension
CQRS-FK-1kg-Direct	Ceasefire Quick Response System (FK-5-1-12) Direct-1Kg -Pre Eng System with Sensor Tube (6mm)-3 mtr and EOL Plug-1 No.	**CF-000854A-K1**	**440 X 140 X 640 mm**
CQRS-FK-1kg-Direct	Ceasefire Quick Response System (FK-5-1-12) Direct-1Kg -Pre Eng System with Sensor Tube (6mm)-4 mtr and EOL Plug-1 No.	**CF-000854A-K2**	
CQRS-FK-1kg-Direct	Ceasefire Quick Response System (FK-5-1-12) Direct-1Kg -Pre Eng System with Sensor Tube (6mm)-5 mtr and EOL Plug-1 No.	**CF-000854A-K3**	
CQRS-FK-2kg-Direct	Ceasefire Quick Response System (FK-5-1-12) Direct-2Kg -Pre Eng System with Sensor Tube (6mm)-3 mtr and EOL Plug-1 No.	**CF-000792A-K1**	
CQRS-FK-2kg-Direct	Ceasefire Quick Response System (FK-5-1-12) Direct-2Kg -Pre Eng System with Sensor Tube (6mm)-4 mtr and EOL Plug-1 No.	**CF-000792A-K2**	
CQRS-FK-2kg-Direct	Ceasefire Quick Response System (FK-5-1-12) Direct-2Kg -Pre Eng System with Sensor Tube (6mm)-5 mtr and EOL Plug-1 No.	**CF-000792A-K3**	

Name	Description	Product Code	Packaging Box Dimension
CQRS-FK-3kg-Direct	Ceasefire Quick Response System (FK-5-1-12) Direct-3Kg- Pre Eng System with Sensor Tube (6mm)-3 mtr and EOL Plug-1 No.	**CF-000792B-K1**	**440 X 170 X 560 mm**
CQRS-FK-3kg-Direct	Ceasefire Quick Response System (FK-5-1-12) Direct-3Kg- Pre Eng System with Sensor Tube (6mm)-4 mtr and EOL Plug-1 No.	**CF-000792B-K2**	
CQRS-FK-3kg-Direct	Ceasefire Quick Response System (FK-5-1-12) Direct-3Kg- Pre Eng System with Sensor Tube (6mm)-5 mtr and EOL Plug-1 No.	**CF-000792B-K3**	
CQRS-FK-4kg-Direct	Ceasefire Quick Response System (FK-5-1-12) Direct-4Kg- Pre Eng System with Sensor Tube (6mm)-3 mtr and EOL Plug-1 No.	**CF-000792C-K1**	
CQRS-FK-4kg-Direct	Ceasefire Quick Response System (FK-5-1-12) Direct-4Kg- Pre Eng System with Sensor Tube (6mm)-4 mtr and EOL Plug-1 No.	**CF-000792C-K2**	
CQRS-FK-4kg-Direct	Ceasefire Quick Response System (FK-5-1-12) Direct-4Kg- Pre Eng System with Sensor Tube (6mm)-5 mtr and EOL Plug-1 No.	**CF-000792C-K3**	

PRE-ENGINEERED FOAM (FLUORINE FREE) VARIANTS

Name	Description	Product Code	Packaging Box Dimension
CQRS-FF Foam-1ltr-Direct	Ceasefire Quick Response System (FF Foam) Direct (Single outlet With 8mm Fitting) – 1Ltr-Pre Eng System with Sensor Tube (8mm)-3 mtr and EOL Adaptor (8mm)-1 No.	**CF-001368-K1**	**440 X 140 X 640 mm**
CQRS-FF Foam-1ltr-Direct	Ceasefire Quick Response System (FF Foam) Direct (Single outlet With 8mm Fitting) – 1Ltr-Pre Eng System with Sensor Tube (8mm)-4 mtr and EOL Adaptor (8mm)-1 No.	**CF-001368-K2**	
CQRS-FF Foam-1ltr-Direct	Ceasefire Quick Response System (FF Foam) Direct (Single outlet With 8mm Fitting) – 1Ltr-Pre Eng System with Sensor Tube (8mm)-5 mtr and EOL Adaptor (8mm)-1 No.	**CF-001368-K3**	
CQRS-FF Foam-3ltr-Direct	Ceasefire Quick Response System (FF Foam) Direct (Single outlet With 8mm Fitting) – 3Ltr-Pre Eng System with Sensor Tube (8mm)-3 mtr and EOL Adaptor (8mm)-1 No.	**CF-001383-K1**	**440 X 170 X 560 mm**
CQRS-FF Foam-3ltr-Direct	Ceasefire Quick Response System (FF Foam) Direct (Single outlet With 8mm Fitting) – 3Ltr-Pre Eng System with Sensor Tube(8mm)-4 mtr and EOL Adaptor (8mm)-1 No.	**CF-001383-K2**	
CQRS-FF Foam-3ltr-Direct	Ceasefire Quick Response System (FF Foam) Direct (Single outlet With 8mm Fitting) – 3Ltr-Pre Eng System with Sensor Tube (8mm)-5 mtr and EOL Adaptor (8mm)-1 No.	**CF-001383-K3**	
CQRS-FF Foam-6ltr-Direct	Ceasefire Quick Response System (FF Foam) Direct (Single outlet With 8mm Fitting) – 6Ltr-Pre Eng System with Sensor Tube (8mm)-3 mtr and EOL Adaptor (8mm)-1 No.	**CF-001384-K1**	**440 X 190 X 820 mm**
CQRS-FF Foam-6ltr-Direct	Ceasefire Quick Response System (FF Foam) Direct (Single outlet With 8mm Fitting) – 6Ltr-Pre Eng System with Sensor Tube(8mm)-4 mtr and EOL Adaptor (8mm)-1 No.	**CF-001384-K2**	
CQRS-FF Foam-6ltr-Direct	Ceasefire Quick Response System (FF Foam) Direct (Single outlet With 8mm Fitting) – 6Ltr-Pre Eng System with Sensor Tube (8mm)-5 mtr and EOL Adaptor (8mm)-1 No.	**CF-001384-K3**	

PRE-ENGINEERED ABC POWDER (MAP 90) VARIANTS

Name	Description	Product Code	Packaging Box Dimension
CQRS-MAP90-1kg-Direct	Ceasefire Quick Response System (MAP90) Direct (Single outlet With 8mm Fitting) – 1Kg-Pre Eng System with Sensor Tube (8mm)-3 mtr and EOL Adaptor (8mm)-1 No.	**CF-001364-K1**	**440 X 140 X 640 mm**
CQRS-MAP90-1kg-Direct	Ceasefire Quick Response System (MAP90) Direct (Single outlet With 8mm Fitting) – 1Kg-Pre Eng System with Sensor Tube (8mm)-4 mtr and EOL Adaptor (8mm)-1 No.	**CF-001364-K2**	
CQRS-MAP90-1kg-Direct	Ceasefire Quick Response System (MAP90) Direct (Single outlet With 8mm Fitting) – 1Kg-Pre Eng System with Sensor Tube (8mm)-5 mtr and EOL Adaptor (8mm)-1 No.	**CF-001364-K3**	
CQRS-MAP90-2kg-Direct	Ceasefire Quick Response System (MAP90) Direct (Single outlet With 8mm Fitting) – 2Kg-Pre Eng System with Sensor Tube (8mm)-3 mtr and EOL Adaptor (8mm)-1 No.	**CF-001365-K1**	
CQRS-MAP90-2kg-Direct	Ceasefire Quick Response System (MAP90) Direct (Single outlet With 8mm Fitting) – 2Kg-Pre Eng System with Sensor Tube (8mm)-4 mtr and EOL Adaptor (8mm)-1 No.	**CF-001365-K2**	
CQRS-MAP90-2kg-Direct	Ceasefire Quick Response System (MAP90) Direct (Single outlet With 8mm Fitting) – 2Kg-Pre Eng System with Sensor Tube (8mm)-5 mtr and EOL Adaptor (8mm)-1 No.	**CF-001365-K3**	
CQRS-MAP90-4kg-Direct	Ceasefire Quick Response System (MAP90) Direct (Single outlet With 8mm Fitting) – 4Kg-Pre Eng System with Sensor Tube (8mm)-3 mtr and EOL Adaptor (8mm)-1 No.	**CF-001511-K1**	**440 X 170 X 560 mm**
CQRS-MAP90-4kg-Direct	Ceasefire Quick Response System (MAP90) Direct (Single outlet With 8mm Fitting) – 4Kg-Pre Eng System with Sensor Tube (8mm)-4 mtr and EOL Adaptor (8mm)-1 No.	**CF-001511-K2**	
CQRS-MAP90-4kg-Direct	Ceasefire Quick Response System (MAP90) Direct (Single outlet With 8mm Fitting) – 4Kg-Pre Eng System with Sensor Tube (8mm)-5 mtr and EOL Adaptor (8mm)-1 No.	**CF-001511-K3**	

PRE-ENGINEERED CO_2 VARIANTS

Name	Description	Product Code	Packaging Box Dimension
CQRS-CO_2-2kg-Direct	Ceasefire Quick Response System Co2 Direct - 2Kg- Pre Eng System with Sensor Tube (6mm)- 3 mtr and EOL Plug-1 No.	**CF-000079-K1**	**440 X 140 X 640 mm**
CQRS-CO_2-2kg-Direct	Ceasefire Quick Response System Co2 Direct - 2Kg- Pre Eng System with Sensor Tube (6mm)- 4 mtr and EOL Plug-1 No.	**CF-000079-K2**	
CQRS-CO_2-2kg-Direct	Ceasefire Quick Response System Co2 Direct - 2Kg- Pre Eng System with Sensor Tube (6mm)- 5 mtr and EOL Plug-1 No.	**CF-000079-K3**	
CQRS-CO_2-5kg-Direct	Ceasefire Quick Response System Co2 Direct - 5Kg- Pre Eng System with Sensor Tube (6mm)- 3 mtr and EOL Plug-1 No.	**CF-001288-K1**	**440 X 190 X 820 mm**
CQRS-CO_2-5kg-Direct	Ceasefire Quick Response System Co2 Direct - 5Kg- Pre Eng System with Sensor Tube (6mm)- 4 mtr and EOL Plug-1 No.	**CF-001288-K2**	
CQRS-CO_2-5kg-Direct	Ceasefire Quick Response System Co2 Direct - 5Kg- Pre Eng System with Sensor Tube (6mm)- 5 mtr and EOL Plug-1 No.	**CF-001288-K3**	

APPLICATIONS OF THE SYSTEMS

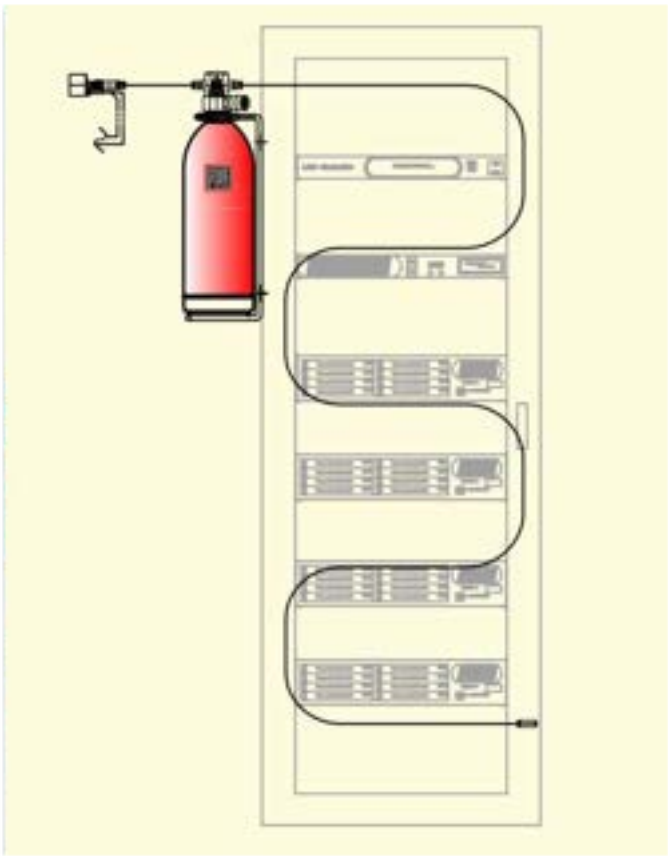
NETWORKING RACKS

The Fire Risk

Generally used for the storage of routers, patch panels, switches and a wide variety of networking equipment and networking accessories, networking racks do not generate the same amount of heat as that housed inside a server rack. But poor ventilation, electrical issues, improper installation, or overheating may lead to a fire situation, causing business downtime and loss of data. This makes it essential to install an In-Panel Tube Based System in server rooms to detect and suppress fires automatically.

Ceasefire Recommends

System Variants		Agents
Direct System	Low Pressure	Fluoroketone (FK)
Indirect System	Low Pressure	Fluoroketone (FK)



"In 2021, there were over 1,000 data centre fires, with an average cost of $1 million each. About 20% of these fires were caused by networking racks." - UK's Health and Safety Executive (HSE)

WIND TURBINES

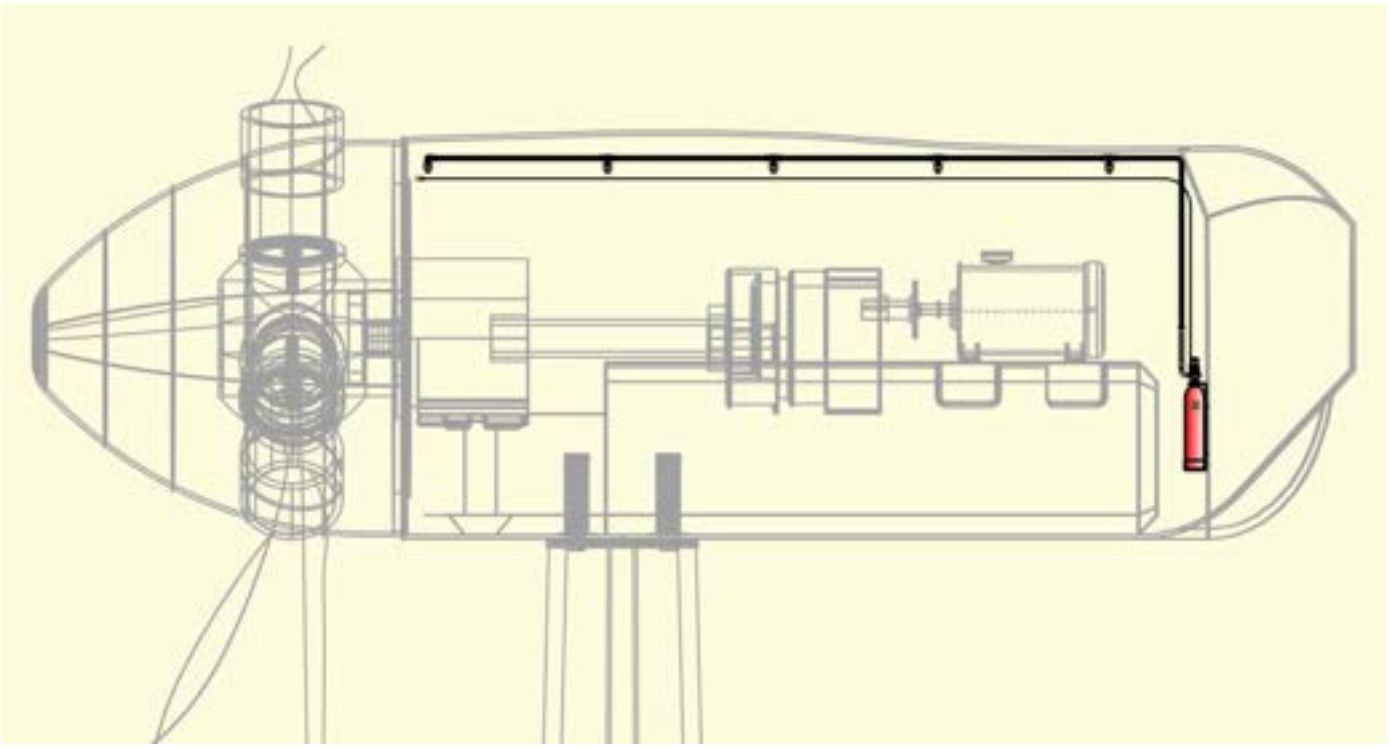
The Fire Risk

Discover the future of wind turbine safety. Wind turbines are advanced systems that harness natural wind energy, converting it into vital power. However, their significant capital investment demands prolonged functionality for economic viability. Fire emerges as a prime cause of downtime, fuelled by moving turbine parts and lightning strikes. Once ignited, the chances of dousing the blaze are low due to the extreme height & the remote locations they are present in. Therefore, a conventional suppression system might not help when it comes to suppressing the fire risk that these remote machineries carry.

Ceasefire Recommends

System Variants		Agents
Direct System	Low Pressure	Fluoroketone (FK)
	High Pressure	CO_2
Indirect System	Low Pressure	Fluoroketone (FK)
	High Pressure	CO_2

According to a Renewable Energy study, the most common cause of wind turbine fires is electrical failure, accounting for 40% of reported fires. Other causes included lightning strikes, mechanical failure, and human error.



ELECTRICAL PANELS

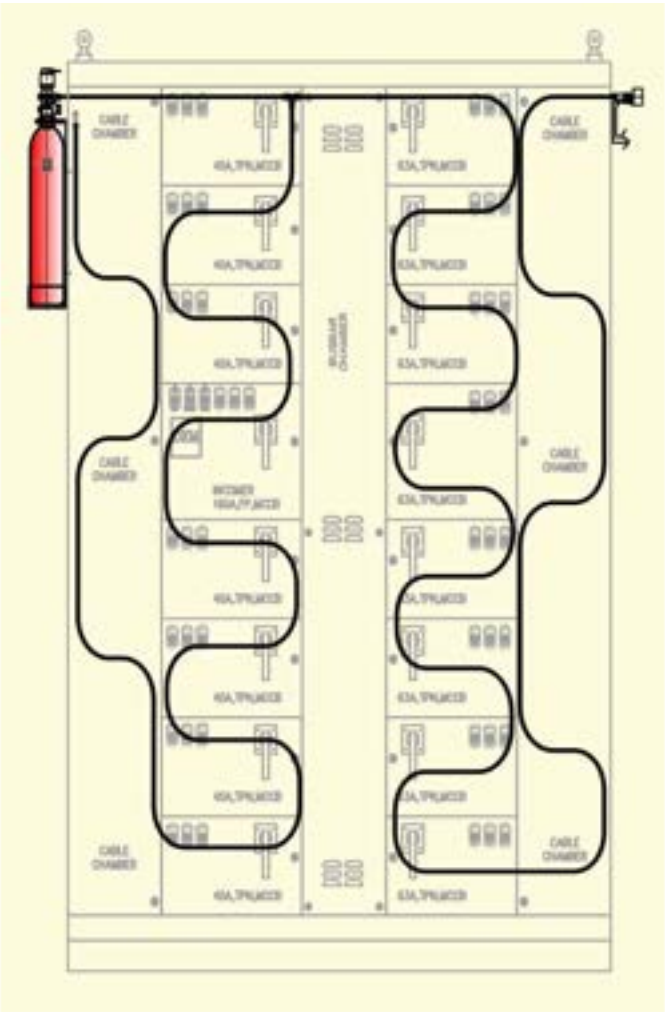
The Fire Risk

Short circuit in electrical panels is often the leading cause of fatal fires in buildings. Safeguarding these highly vulnerable risk points mean safeguarding the entire premises. Ceasefire's specialised fire systems are designed considering how dangerous it gets to arrest fires in these electrically charged spaces and how manual firefighting is often never an option when it comes to dousing fire in electrical panels.

Ceasefire Recommends

System Variants		Agents
Direct System (For electrical panel with multiple compartments)	Low Pressure	Fluoroketone (FK)
	High Pressure	CO_2
Indirect System (For electrical panel with limited compartments)	Low Pressure	Fluoroketone (FK)
	High Pressure	CO_2

A study found that electrical panel fires were involved in 10% of all reported structure fires, resulting in an estimated $1.4 billion in direct property damage per year.



SERVER RACKS

The Fire Risk

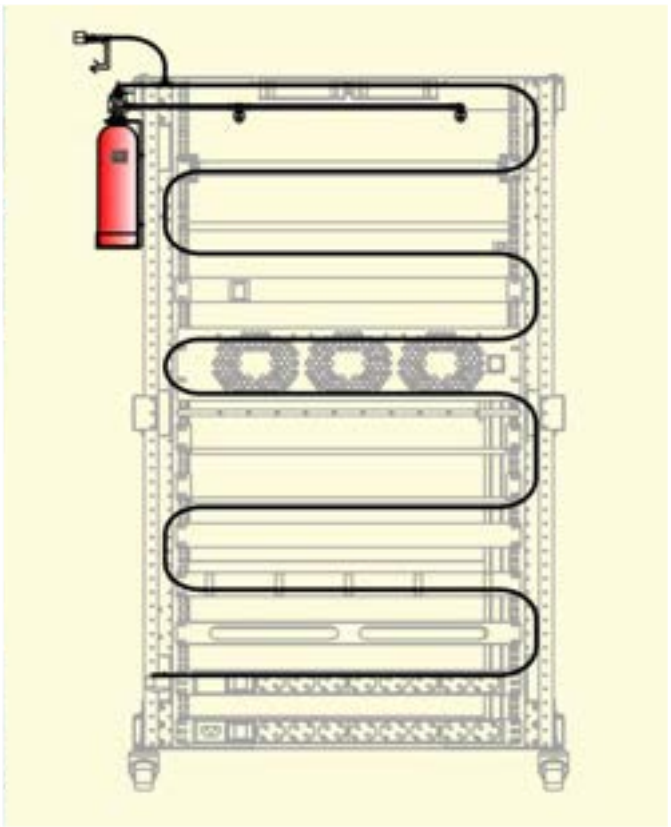
At Ceasefire, we understand the critical role that server racks play in storing invaluable business data and facilitating seamless operations within your organisation. However, it's important to acknowledge the inherent risks associated with server racks, particularly when it comes to fire hazards.

One of the key challenges in mitigating these risks is that server rooms often operate without continuous human presence, which means that potential fires could go undetected until it's too late.

Ceasefire Recommends

System Variants			Agents
(For server racks up to 4U)	**Direct System**	Low Pressure	Fluoroketone (FK)
		High Pressure	CO_2
	Indirect System	High Pressure	CO_2
(For server racks above 4U)	**Direct System**	High Pressure	CO_2
	Indirect System	Low Pressure	Fluoroketone (FK)
		High Pressure	CO_2

A study published in the journal Fire Technology found that electrical distribution equipment was involved in 32% of all server room fires, and that electrical failures or malfunctions were the leading cause of these fires.



CNC MACHINES

The Fire Risk

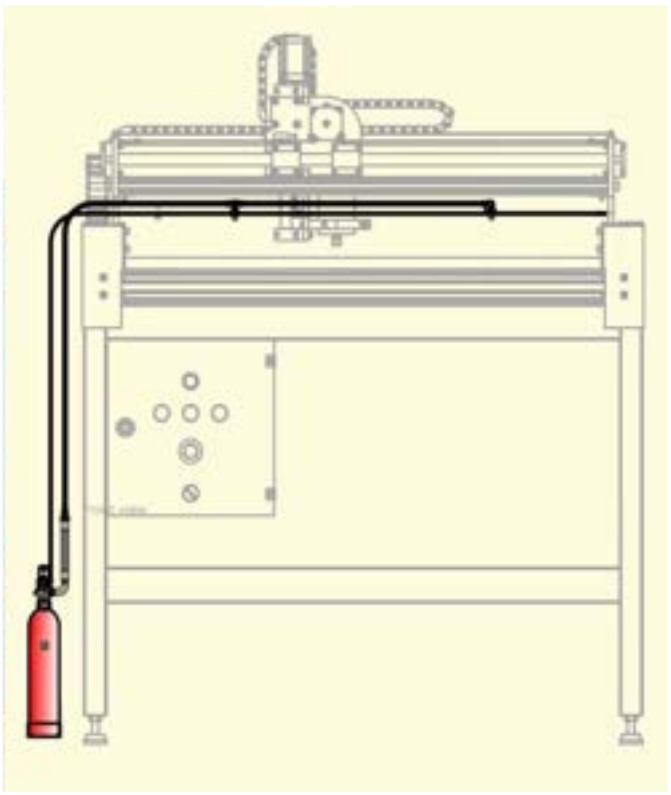
From the exquisite wonders of technology, CNC Machines bring to the fore an effortless way of performing complex day to day operations at manufacturing units. While these highly advanced machines render numerous benefits to the industry, they also possess a significantly high risk of fire.

CNC machines carry out repetitive robotic movements and use flammable oils, lubricants, and other metalworking fluids at high speeds and temperatures, this creates extreme levels of friction and heat that can eventually lead to a flash fire. Since these machines operate in automatic mode, they do not require human intervention 24 hours a day, which makes the situation even more alarming.

Ceasefire Recommends

System Variants		Agents
Direct System	Low Pressure	Foam (Fluorine Free)
	Low Pressure	Fluoroketone (FK)
	High Pressure	CO_2
Indirect System	Low Pressure	Foam (Fluorine Free)
	Low Pressure	Fluoroketone (FK)
	High Pressure	CO_2

A study between 1995 and 2014 states that there an average of 30 fires per year were reported involving CNC machines. - National Fire Protection Association (NFPA)



HEAVY & LIGHT VEHICLE ENGINES

The Fire Risk

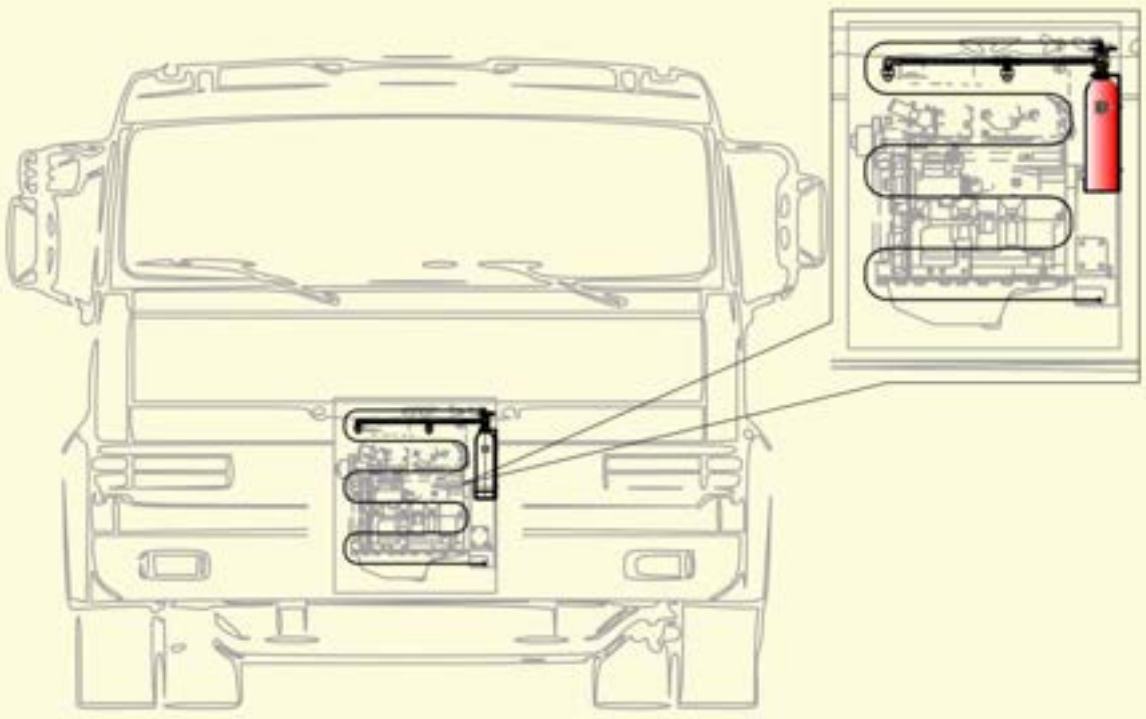
Vehicle fires are not new to us. We've witnessed them every now & then. While these vehicle engines convert fuel into motion and make our lives & commute easy, they also possess a major threat of catching fire. With the presence of a lot of frictional components, flammable liquids and complex electric wiring, fire is one of the most common hazards in vehicle engines.

With engines being located mostly outside the passenger area, detection of fire becomes even more critical and so does the suppression. A fire prevention system that can automatically detect any signs of fire & mitigate the risk in such small enclosed spaces is what these engines require.

Ceasefire Recommends

System Variants		Agents
Direct System	Low Pressure	ABC Powder MAP 90
Indirect System	Low Pressure	Foam (Fluorine Free)
	Low Pressure	ABC Powder MAP 90

A report by the National Highway Traffic Safety Administration (NHTSA) found that passenger cars accounted for the majority of highway vehicle fires, at 58%. Light trucks and vans accounted for 19% of fires, and heavy trucks and buses accounted for 8%.



GENSETS

The Fire Risk

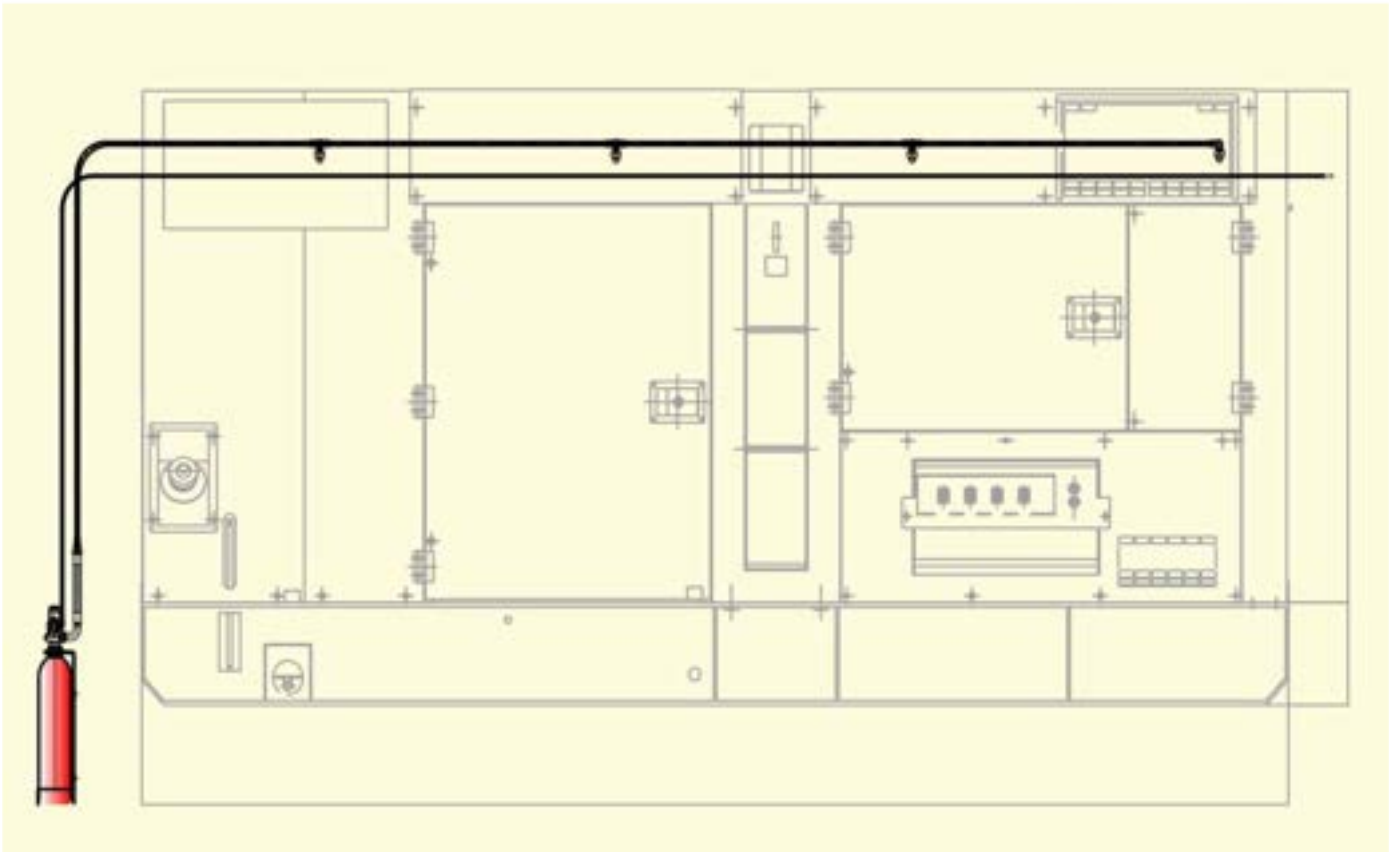
Generators convert mechanical or chemical energy into electricity by capturing the power of motion. With high speed moving engine parts combined with fuel, alternators, wiring and exhaust system there is an ever-present risk of overheating leading to fires. The very design of the canopy of these modern-day generators makes detection of fire an even bigger challenge as the canopy completely keeps the generator enclosed and away from our visual sight.

This is the reason generators need an exclusive fire suppression system that is one, automatic in nature and two, is designed exclusively to address the unique risk of generator fires.

Ceasefire Recommends

System Variants		Agents
Direct System	Low Pressure	ABC Powder MAP 90
Indirect System	Low Pressure	Foam (Fluorine Free)
	Low Pressure	ABC Powder MAP 90
	Low Pressure	Fluoroketone (FK)
	High Pressure	CO_2

The NFPA report found that the majority of genset fires occurred in residential settings, accounting for 65% of all genset fires.



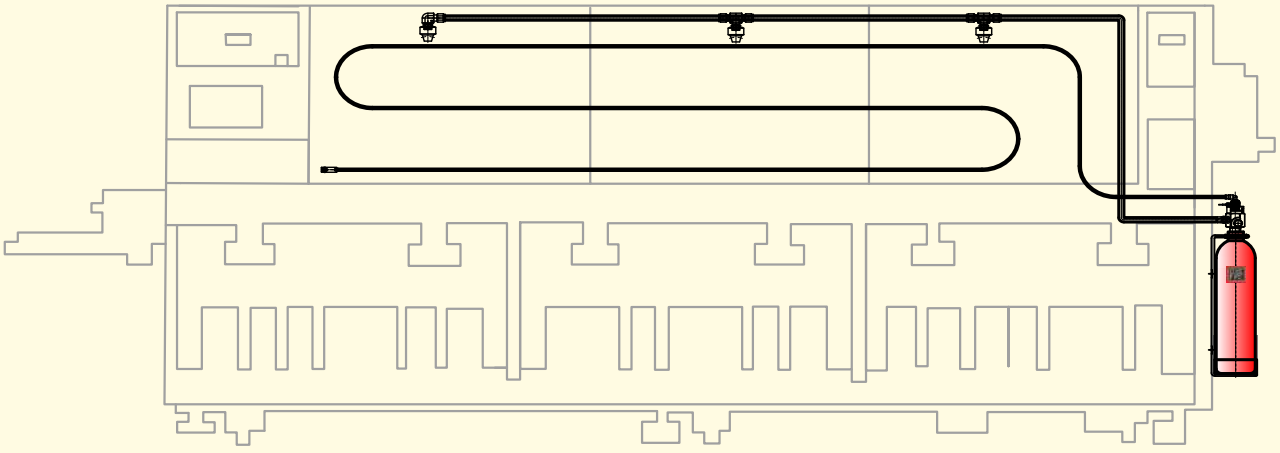
WAVE SOLDER MACHINES

The Fire Risk

The chance of a fire occurring in a wave solder machine can be relatively high due to the presence of flammable materials such as solder and flux, as well as the high temperatures generated during operation. Wave solder machines utilise molten metal to solder components onto printed circuit boards, which can generate a significant amount of heat and pose a risk of ignition if not properly maintained. Installing fire prevention measures like an automatic fire suppression system is recommended to ensure fire safety of the machine. Installing fire prevention measures like an automatic fire suppression system is recommended to ensure fire safety of the machine.

Ceasefire Recommends

System Variants		Agents
Indirect System	Low Pressure	Fluoroketone (FK)
	High Pressure	CO_2



The Regulatory Reform (Fire Safety) Order 2005 requires manufacturing businesses to take reasonable steps to reduce the risk of fire and to ensure that people can safely escape in the event of a fire.

DUST COLLECTION MACHINES

The Fire Risk

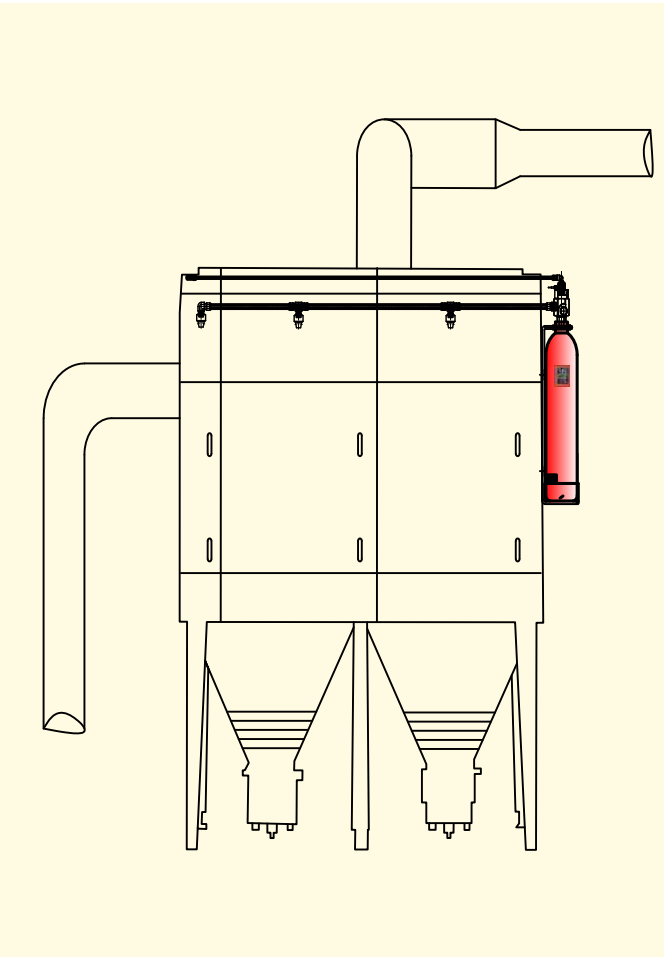
From metalworking and woodworking to food processing, dust collectors constantly pull combustible dust off the floor. This dust, along with the filter material themselves, is a continuous source of fuel for the fire triangle. This means there is a constant source of replenished oxygen circulating through the dust collector. In metalworking processes, such as welding, grinding, or cutting, sparks can get swept up into the dust collector and ask as fuel to ignite a fire. Friction from processes can build up heat, which could build up enough to reach the flashpoint of the fuel within the collector.

With a Tube based suppression system installed inside the Dust Collector Machine, the system will release a suppression agent at the source of the fire, before you realise a fire has started.

Ceasefire Recommends

System Variants		Agents
Indirect System	Low Pressure	Foam (Fluorine Free)
	Low Pressure	ABC Powder MAP 90
	High Pressure	CO_2

According to the National Fire Protection Association (NFPA), there were an estimated 1,380 fires in dust collection systems and equipment between 2010 and 2014 in the United States.



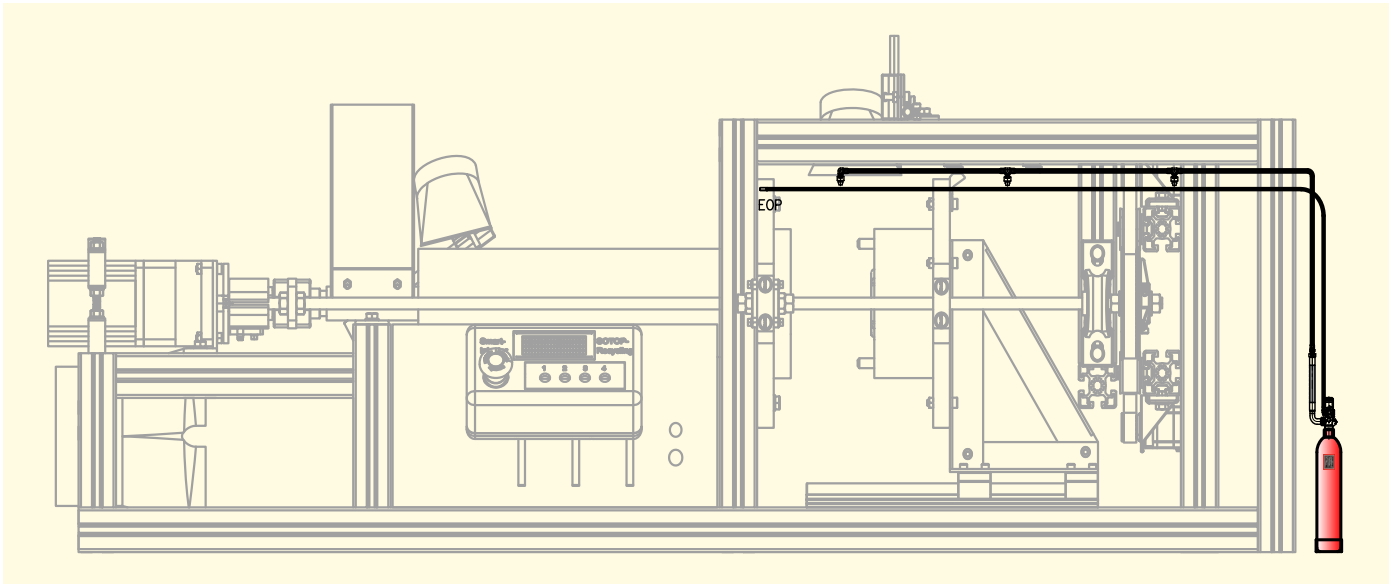
INJECTION MOULDING MACHINES

The Fire Risk

There are many reasons that can ignite a fire in the injection moulding machine including electrical faults, overheating due to blocked ventilation or insufficient cooling, and ignition of residual plastic or other materials inside the machine. Since these machines are working at high pressure, high speed, and high temperature, it is essential to ensure that the machine is used in a properly ventilated area.

Ceasefire Recommends

System Variants		Agents
Indirect System	Low Pressure	Foam (Fluorine Free)
	High Pressure	CO_2



Overheating is responsible for about 70% of all injection moulding machine fires. - NFPA

FUME CABINETS

The Fire Risk

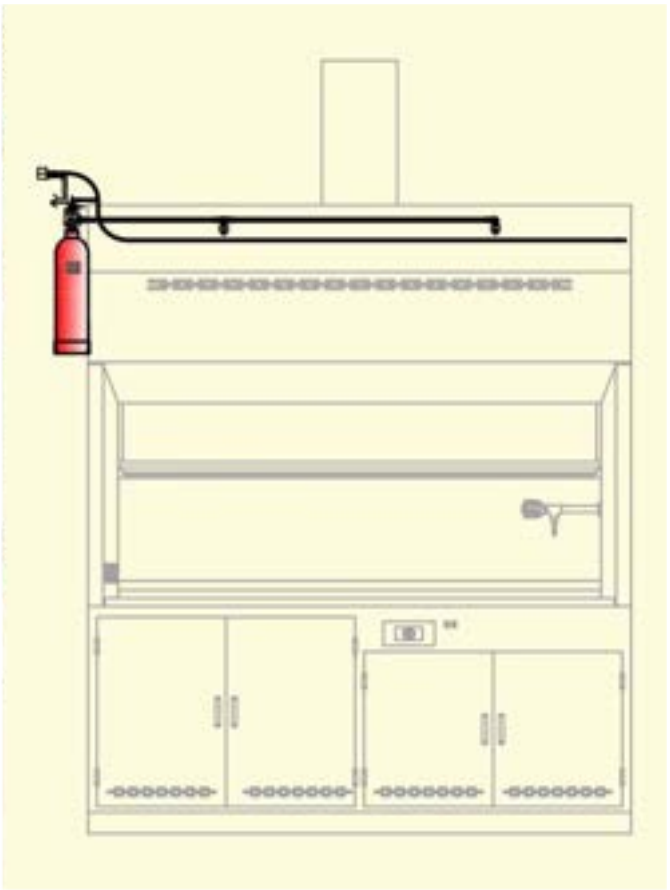
Fume cabinets play a crucial role in the functioning of laboratories, shielding researchers from unsafe fumes and risky substances. While their main purpose is to provide a shield against harmful elements, they paradoxically possess a susceptibility to catching fire.

The primary factor is the accumulation of flammable chemicals and vapours within them.

When subjected to heat, sparks, or other ignition sources, these concentrations can swiftly combust, resulting in a fire outbreak. Moreover, fires that initiate externally to the cabinet, perhaps due to a nearby chemical spill or explosion, can also contribute to fires in fume cabinets.

Ceasefire Recommends

System Variants		Agents
Direct System	Low Pressure	ABC Powder MAP 90
Indirect System	Low Pressure	Fluoroketone (FK)
	High Pressure	CO_2



The most common cause of fires at fume cabinets is electrical failure. This can be caused by a variety of factors, including faulty wiring, short circuits, and overheating. - UK's Health and Safety Executive (HSE)

TRANSFORMERS

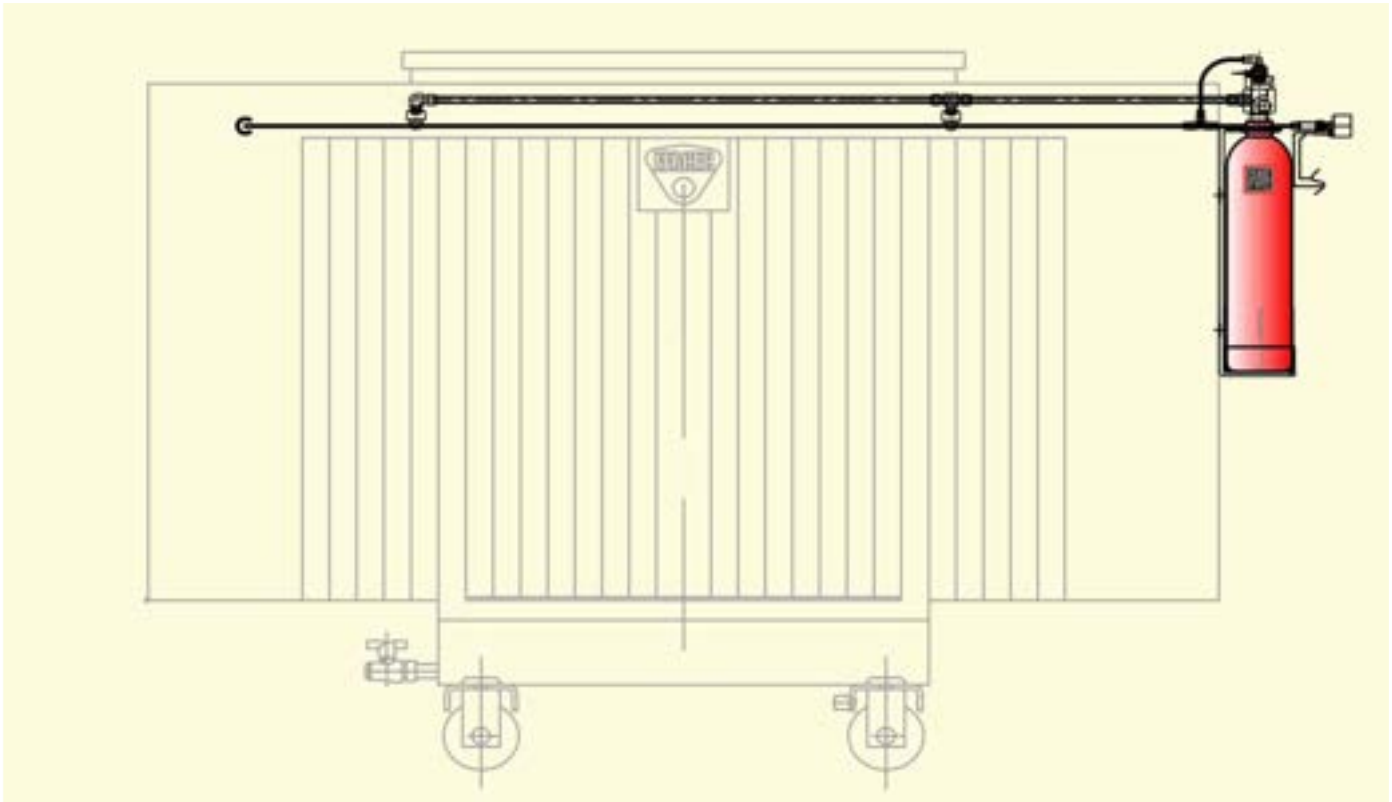
The Fire Risk

Transformers are electrical devices that are designed to transfer energy from one circuit to another through electromagnetic induction. However, they generate heat during operation, which can cause insulation materials to degrade over time, leading to a breakdown of the transformer and the possibility of fire. They are also vulnerable to external factors such as lightning strikes, power surges, and overloading, which can increase the risk of fire. Environmental conditions, such as high temperatures, moisture, and corrosive substances, can also affect transformer performance and increase the likelihood of fire.

Ceasefire Recommends

System Variants		Agents
Direct System	Low Pressure	ABC Powder MAP 90
Indirect System	Low Pressure	Fluoroketone (FK)
	High Pressure	CO_2

According to a report by the National Fire Protection Association (NFPA), U.S. fire departments responded to an average of 9,720 transformer fires per year. These fires resulted in an average of 13 civilian deaths, 70 civilian injuries, and $308 million in direct property damage annually.



MOTOR BOATS

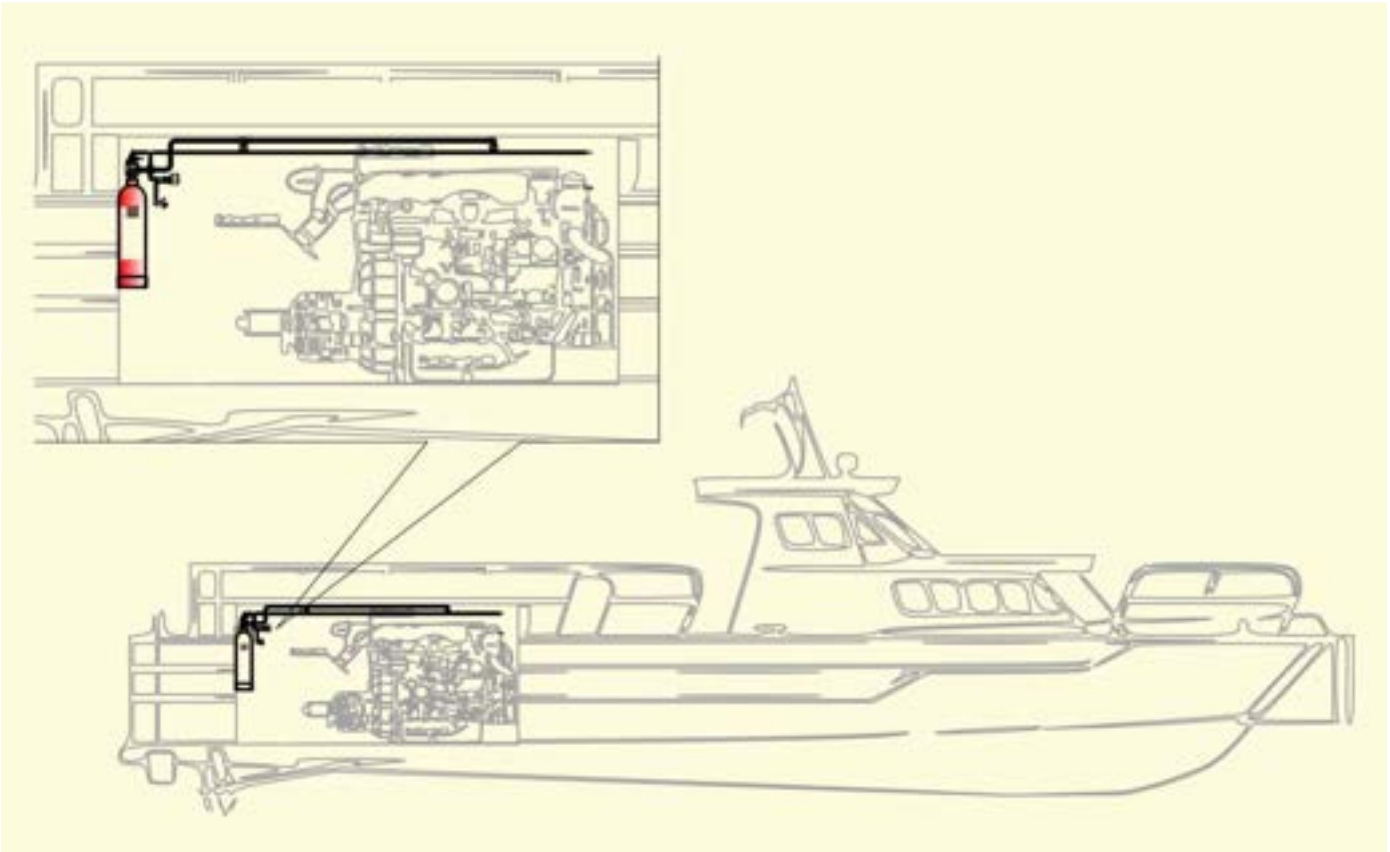
The Fire Risk

Boats have several potential ignition sources that can increase the risk of fire, including engines, fuel systems, electrical systems, and cooking equipment. Older boats may be more prone to electrical issues, which can lead to fires, while boats with gasoline-powered engines may be more susceptible to fuel leaks and fires.

Ceasefire Recommends

System Variants		Agents
Direct System	Low Pressure	ABC Powder MAP 90
Indirect System	Low Pressure	ABC Powder MAP 90
	Low Pressure	Foam (Fluorine Free)
	Low Pressure	Fluoroketone (FK)

The National Fire Protection Association (NFPA) reports that there is an average of 4,500 reported recreational boating fires per year in the US. These fires resulted in an average of 81 injuries, 62 fatalities, and $54 million in property damage annually



CEASEFIRE DESIGN CELL

A flagship offering from Ceasefire for its trade partners comes in the form of Ceasefire Design Cell that aids in creating customised system designs for every premises a Ceasefire fire fighting system is installed at. The cell comprises of design professionals and experts with extensive experience and knowledge in designing fire systems for a diverse range of spaces and applications.

Ceasefire Industries UK Limited
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