



**The greenest, waterless flooding
system known to man.**



FM-200® – TOTAL FLOODING SYSTEM



Offices, server rooms, data centres... any area where heavy-duty electronics, computers, etc, are stored tend to be prone to fire. Not only does the presence of electricity, equipment, wiring and complicated circuitry leave the area vulnerable to fire, an overload or system shutdown could cause an energy imbalance that results in a sudden blaze. Malfunctioning wiring or devices could emit sparks, which can start a fire depending on where they land. Adding to the danger, what happens if the fire is left undiscovered? In 2009, 1586* devastating industrial fires occurred in the country. With expensive electronics, irreplaceable data and state-of-the art facilities in question, who would want to take such a chance?

A fire in areas where electronics are present could not only spell a serious delay for your operations, it can also result in huge financial losses. And putting out the fire doesn't necessarily spell the end of your troubles either. The reality is, in a fire situation many fire suppression systems cause major damage, and even destroy the very things they are supposed to protect. The need of the hour is a system that works swiftly to contain the fire and extinguish it, ensuring minimal damage. Yet one that's kind on electronics.

That's where Ceasefire's FM-200®-based flooding system comes in.

Introducing Ceasefire FM-200® - a revolutionary firefighting system like no other. This automated flooding system is designed and equipped to initiate firefighting within seconds of the fire being detected. Specially created to safeguard valuable life and equipment, the Ceasefire FM-200® flooding system safeguards the entire area. What's more, since FM-200® is green in nature, this gas-based extinguishing agent ensures that the fire is put out without causing any collateral damage to the premises, expensive equipment and the Earth.

*National Crime Records Bureau 2010

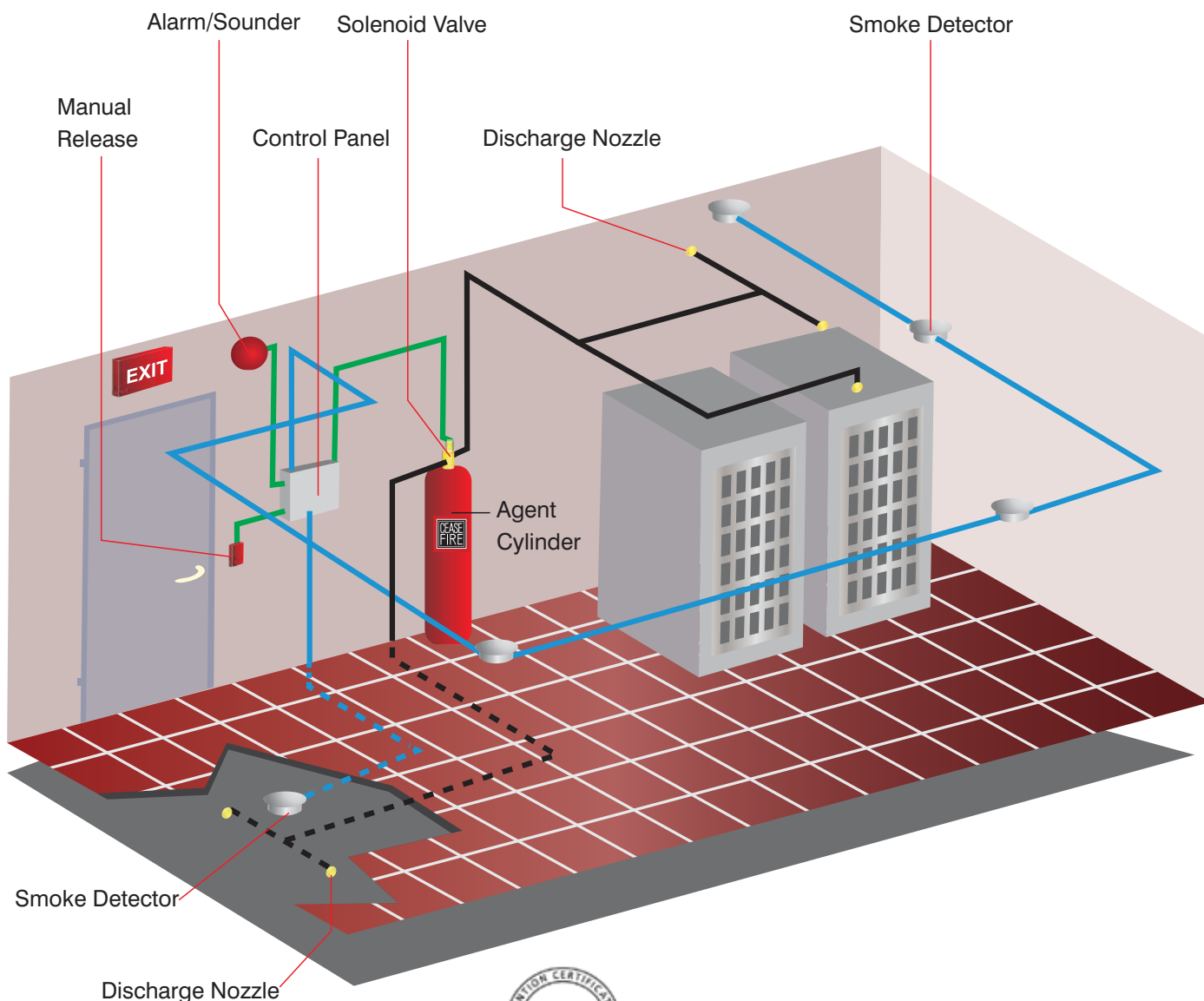
INTRODUCING FM-200®

FM-200® (HFC 227ea, known chemically as Heptafluoropropane), is a colourless, odourless gas that is liquefied under pressure for storage.

It is thermally and chemically stable, but without the extremely long atmospheric lifetimes associated with other proposed Halon replacements. FM-200® has been specially created to suppress fire by reaching extinguishing levels in seconds, reducing the oxygen supply to below

combustion levels and stopping ordinary, electrical, and flammable liquid fires before they can cause significant damage. That's the fastest fire protection available, period! This also means less damage, less downtime and an extra margin of safety.

Not only does FM-200® put out fires in a very short period of time, it leaves no residue or oily deposits on delicate electronic equipment, and can be removed from the protected space by ventilation.



CERTIFIED BY LPCB FOR LPS 1230 STANDARD

CEASEFIRE FM-200®

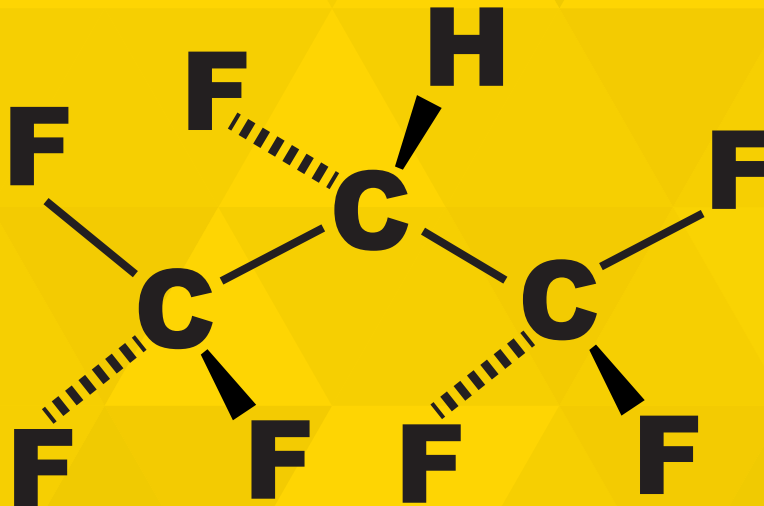
Ceasefire, a market leader in fire safety manufactures its state-of-the-art FM-200® flooding system in a FPC compliant facility. The USP of FM-200® is its extensive coverage. This self-activated system uses advanced technology to achieve maximum extinguishing efficiency.

Here's how it works. When the detectors sense a rise in temperature above normal levels, particles of smoke or a change in the quality of air, they alert the Control Panel. The Control Panel, in turn, activates the System. Once activated, the impulse triggers a high-pressure solenoid valve that releases the FM-200® gas from the cylinders to the nozzle via a flexible piping network. At the same time, a hooter goes off, warning personnel to clear the area while the extinguishing agent is dispersed in the room. 80% of FM-200®'s firefighting effectiveness is achieved through heat absorption and 20% through direct chemical means (action of the fluorine radical on the chain reaction of a flame). Harnessing the latest in cutting-edge firefighting technology, this system has been designed for commercial enterprises and industries. This system requires no monitoring whatsoever, activating instantly in the event of a fire.

The FM-200® flooding system can be manually activated too. As soon as a fire is detected, the system is actuated and large quantities of extinguishing agent are released through wide-range nozzles that give the agent more reach. This effectively 'floods' the area, reducing the concentration of oxygen in the air and efficiently putting out the fire. Being self-activated, the system offers protection from fire 24X7, whether anyone's around or not.

FM-200® – THE APPROVED OPTION

The Montreal Protocol provided the phase out and phase down of all Ozone depleting substances such as Halon (phased out) and HCFC (being phased out). These are being replaced with options such as FE 36™, which works on B & C fires and FM-200®, which is effective against A, B, C, F and electrically started fires. Not only is FM-200® the approved extinguishing agent, it's also the most effective one!



THE COMPLETE SYSTEM

The FM-200® flooding system is designed to conform to IES 15519, the National Fire Protection Association (NFPA) 2001, ISO/PF 20885 and **LPCB FOR LPS 1230** standard. The System comprises various components that come together to create an unbeatable suppression system.



Agent Tank

An essential component of the system, these high-pressure tanks are available in 8 container configurations, namely 22, 34, 55, 70, 80, 100, 125 and 150 litres. Depending upon the requirement, single or multiple containers are installed. All containers are available with a range of manifolds - creating a common outlet for the extinguishing agent to escape from multiple cylinders.

Valves and Actuation Line

The Ceasefire FM-200® system's valves have a maximum working pressure of 150 bar valve seat Ø 42mm. Since it's already integrated, no additional pneumatic actuator is required. Manual, pneumatic as well as electrical activations are available. Each valve comes with a pneumatic option and a master and slave.



Nozzles

The extinguishing agent is dispersed through brass discharge nozzles. These nozzles are designed by the Ceasefire Design Cell after surveying the area. From the size of the nozzle orifices, to the dispensing technique – single cut or cross cut – the nozzles are created specially for your requirements. The nozzles are available in various sizes, from 20mm to 50mm.



Pipes and Fittings

High-quality pipes harness atomisation technology. This pressurises the system, making it a part of the detection mechanism as well as ensuring the extinguishing agent is discharged quickly to the nozzles through the network of pipes.

Detection Devices

Depending upon the requirements of the area being protected, the system integrates different types of detectors, such as smoke detectors, heat detectors, linear heat detectors and aspirating detectors. In addition, an audible alarm alerts personnel in the area to the danger.



The FM-200® Control Panel

Designed and manufactured to the highest standards in a quality-controlled environment, the FM-200® control panel offers outstanding value and performance. With three detection zones, the extinguishing agent's release can be activated from any combination of detection zones. The panel contains a large LED display to enable easy configuration and control. The countdown timer is duplicated on up to seven remote status units to provide local indication of the FM-200® system's status. With all the electronics mounted on a single, easily removable, steel plate, the panel is both robust and easy to install.

BENEFITS OF THE CEASEFIRE FM-200® FLOODING SYSTEM:



Classification

Works on class A, B, C fires and fires involving electrically-charged devices. Effective on a wide range of flammable and combustible materials.



Electronics-Friendly

Shown to be electrically non-conductive and is safe for electrically charged equipment, it is kinder on electronics than the majority of extinguishing agents available in the market.



Ozone, Environment-Friendly

Being a clean-agent, this is an eco-friendly alternative to chemical and water-based extinguishing systems. The extinguishing agent already exists as a gas in the Earth's atmosphere and is one of the by-products of combustion, it does not harm the Earth's stratospheric ozone layer. Its atmospheric lifetime is minimal.



Superior To Other Gas Agents

FM-200® is superior to other gas-based extinguishing agents that have lower boiling points and tend to be corrosive.



High-value Risk Protection

Suitable for protection on a range of high-value risks as it virtually eliminates damage to high-tech equipment, artwork and other delicate and sensitive objects.



No Clean-up Required After Discharge

After a discharge, the extinguishing agent can be removed by simple ventilation.



24-hour Protection

Automatic detection and actuation controls ensure fire protection is always 'on'.



Multiple Triggers

The system can be triggered either by the manual actuation system or through the automatic detection system.



Unobtrusive Design

Flexible piping configurations allow for a streamlined design and convenient installation that will not interfere with office workflow.



Speedy Deployment, Minimal Downtime

Deploys quickly, reaching extinguishing levels in 10 seconds or less, stopping ordinary combustible, electrical, and flammable liquid fires before they cause significant damage. When a fire is extinguished this quickly, it means less damage, lower repair costs, and an extra margin of safety for people. It also means less downtime and disruption of business.



Lower Storage Requirements

In applications where space is at a premium, FM-200® fire suppression systems are the superior choice. Stored in cylinders as a liquid and pressurised with nitrogen, FM-200® systems take up to seven times less storage space than any system based on CO₂ and inert gases.



Highly Effective

Not only does FM-200® work in 10 seconds, it prevents re-ignition by rapidly cooling down temperatures in the surrounding area.



Highly Reliable

A fully assembled and 100% tested mechanical control head ensures reliable operation. A pressure gauge on the steel cylinders marks the gas levels so maintenance staff can replenish it whenever required. Protective chrome nozzle covers keep nozzles free from contamination and blockages by grease or other by-products that could inhibit the proper discharge of the extinguishing agent.



Globally Utilised

FM-200® is the only globally accepted flooding system gas and is in use in over one hundred thousand applications, in more than 70 countries.



Residue-Free

Being a clean agent, it won't leave behind oily residue, particulate or corrosive material.



Highly Adaptable

Existing Halon/CO₂ control systems can easily be adapted for use with FM-200®.



Highly Flexible

Available in a variety of sizes that can be customised as per the application. Its flexible configuration and design can easily accommodate changes to the layout or expansion of the area.

HFC 227EA FLOODING SYSTEM IS AVAILABLE IN ENGINEERED & PRE-ENGINEERED VARIANTS:

The Pre-engineered system is available in eight variants:

System name	Enclosure Volume	
	Minimum	Maximum
CF - HFC 227ea Flooding System - M - V1	20 m ³	28 m ³
CF - HFC 227ea Flooding System - M - V2	28.1 m ³	40 m ³
CF - HFC 227ea Flooding System - M - V3	40.1 m ³	47 m ³
CF - HFC 227ea Flooding System - M - V4	47.1 m ³	60 m ³
CF - HFC 227ea Flooding System - M - V5	60.1 m ³	80 m ³
CF - HFC 227ea Flooding System - M - V6	80.1 m ³	90 m ³
CF - HFC 227ea Flooding System - M - V7	90.1 m ³	105 m ³
CF - HFC 227ea Flooding System - M - V8	105.1 m ³	120 m ³



APPLICATION AREAS FOR FM-200® SYSTEM

It is an ideal fire safety solution for applications such as:

- Offices
- Server Rooms
- Data Centres
- Call Centres
- Theatres
- Warehouses
- Storage Areas
- Underground Parking Lots
- Air Traffic Management Centres
- Telecommunication Centres
- Electric Utilities
- Financial Networks
- Medical Equipment
- Museums and Libraries
- Marine Vessels
- Switch Gear Rooms
- Automotive Factories
- Battery Rooms
- Computer Rooms
- Medical Facilities
- High-density/High-value Areas
- Laboratories
- Military Facilities
- Archive Stores
- Delicate Electrical Equipment
- Petroleum Storage
- Cell Sites
- Industrial Control Rooms
- Transportation
- Flammable Liquid Storage
- Machinery Spaces



CEASEFIRE DESIGN CELL:

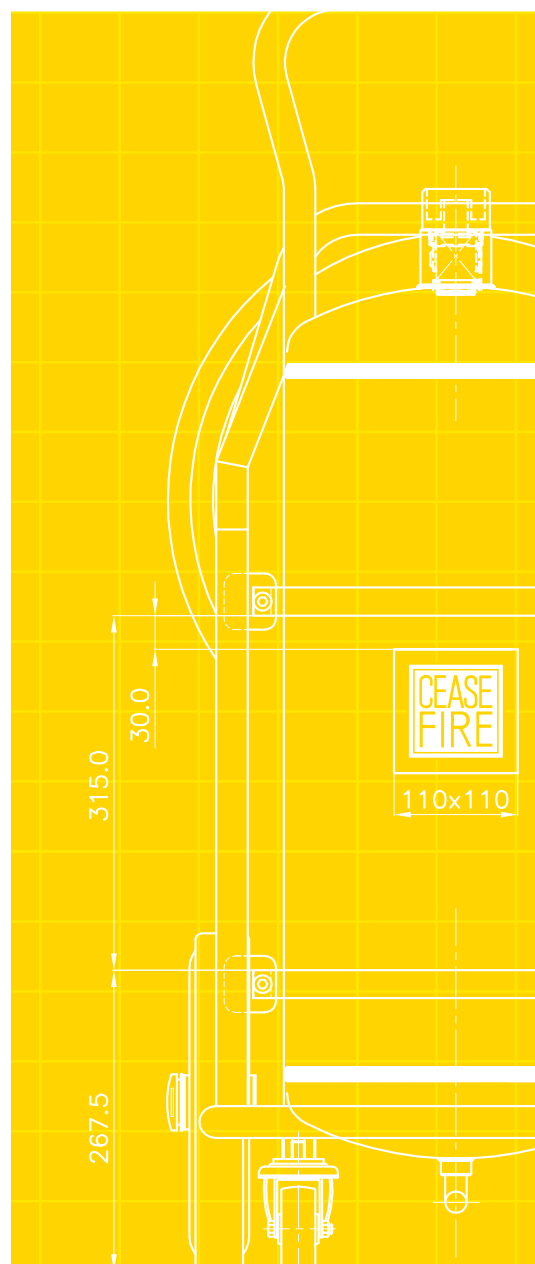
No two premises are alike. By offering the most flexible system configurations in the industry, Ceasefire provides the most efficient protection for facilities. Believing that the most effective fire solutions are the ones that are customised according to the unique characteristics of the area being protected, Ceasefire has established the Ceasefire Design Cell (CDC).

Functioning as the single touch point for all fire safety needs, CDC is manned by fire experts and managers with years of experience in fire safety under their belts. As a part of Ceasefire's 360 degree protection solution, the Ceasefire Technical Survey team visits your facility and conducts a detailed study to understand its vulnerabilities and requirements. They survey the premises and work out requirements and the number of Wheeled Watermist Based System required based on fire threats in the room.

Once it has been finalised, Ceasefire's expert Installation Team oversee installation and testing. The Ceasefire Team also trains you and your staff to use the fire safety system.

Benefits:

- An exhaustive planning process, executed by engineers with years of experience.
- State-of-the-art solutions and products in association with world leaders.
- Design and installation of your System overseen by professionals, ensuring delivery of a high quality, reliable system.



CEASEFIRE NOW

360° lifesaving fire and safety solutions. More than 3,000 new customers a month. A product sold every 61 seconds. A life saved every 5 minutes. Presence in over 300 cities and towns. Backed by a team of more than 2,000. 400 lifesaving products – from green fire extinguishers that can tackle any kind of fire to first of its kind automatic fire extinguisher to more advanced independent suppression systems – Ceasefire has it all. We're equipped and ready to protect your premises.

Download the Ceasefire app.



Ceasefire Industries Private Limited
Plot No. 4, Second Floor, Sector - 135,
Noida - Greater Noida Expressway,
Noida - 201 301, Uttar Pradesh (India)
t +91 120 7154114 f +91 120 7154115

Call our Free Hotline :
1800 120 3473 / +91 9540 666 666
or call +91 120 4223473

www.ceasefire.in

Follow us on:

