WESTSIDE
FIRE SERVICES
"CARING AND RESPONSIVE"

Fire Detection

Occupant Warning

Exit & Emergency Lighting

Fire Extinguishers

Fire Doors

Fire Hose Reels

Fire Hydrants

Fire Pumps

Gas Suppression

Sprinkler Systems

GAS SUPPRESSION

Gas Suppression

What Is Gas Suppression?

Gaseous Fire Suppression or Clean Agent fire suppression are terms to describe gases used to extinguish fires. Typically, gaseous agents work in one of two ways, the first is to inert the atmosphere reducing oxygen levels to a level that will no longer sustain combustion, the second is to react chemically with the fire absorbing heat and causing the chain reaction of combustion to break down.

Gas suppression systems are typically used to protect three dimensional enclosures containing high value assets that are vital for business continuity, and assets that cannot be protected by traditional sprinkler systems due to the potential for water damage. Typical system applications include telecommunication facilities, clean rooms, data processing centres and museums.

Why Do Buildings Have Gas Suppression?

The Building Code of Australia volume 1 parts E1.10 and E2.3 detail the mandatory requirements for special hazard systems.

Types Of Gas Suppression Agents

Gaseous fire suppression systems can be used on many different classes of fires, but typically are designed to suppress fires involving ordinary combustible materials, such as:

- Wood, paper, cloth, plastics, rubber and carbon based compounds (Class A).
- Flammable and combustible liquids and greases, such as petrol, oil, paint, thinners, kerosene, and alcohol (Class B).
- Flammable gases, such as LPG, butane, acetylene, hydrogen, natural gas and methane (Class C).
- Electrical fires, such as computers, switchboards and power-boards (Class E).

Types Of Gas Suppression Agents

PROINERT™
PROINERT™ is a clean agent fire extinguishing system using inert gas (IG55, IG541, IG100 or IG01) and is used in total flooding systems. It has become widely accepted as the best performing, most cost effective, and environmentally friendly inert gaseous suppression system, offering extended hold times and great flexibility in design.

It is unique in that it utilises a pressure regulating discharge valve which produces lower discharge pressures which also translates into lower costs all around, resulting in savings with pipe work, venting area and cylinder storage.

Novec 1230™
Novec 1230™ Fire Protection Fluid is a second generation clean agent gaseous suppression system. It is a chemical agent used primarily in total flooding systems and is the most environmentally benign of all the chemical agents.

It is truly a real breakthrough in clean agent technology, a liquid at room temperature, it looks, feels and acts like water allowing flexibility in recharge procedures.

FM200®
FM-200® (HFC-227ea) Clean Agent fire extinguishing systems are the most widely used of all the halocarbon gaseous agents, and is universally accepted as the best agent used to replace Halon 1301.

It is a chemical agent used primarily in total flooding systems and has been installed in over 200,000 systems worldwide.

Carbon Dioxide
Carbon dioxide (CO2) is a colourless, odourless, electrically non-conductive gas that is highly efficient. It can be used for local application and total flooding systems and is suited to a wide range of applications and hazards.

It has a high rate of expansion enabling rapid fire suppression and provides a heavy blanket of gas that reduces the oxygen level to a point where combustion cannot occur. CO2 is not approved for occupied spaces unless fitted with a safety interlock device to prevent the system from discharging when the enclosure is occupied.

CO2 can be used to protect applications such as generator sets, turbines, switch gear, flammable liquid baths, electrical enclosures and transformers.

Gas Suppression

Where Should Gas Suppression Be Located?

Like all fire protection systems, gas suppression systems should only be designed by experienced engineers.

Australian Standard AS1670.5 sets out the requirements for the design, installation and commissioning of special hazards detection, actuation and control systems comprising components complying with the requirements of the relevant product Standards itemized in AS 1670.1.

Total Flood Application Systems

Total flood systems are the most common type of gas fire suppression system. These systems are used to protect against fire hazards located within an enclosed space. Enclosed spaces must be reasonably gas-tight to allow the design concentration of extinguishing agent to form inside the protected space. The gas concentration needs to be maintained for a set period (called the hold or retention time) to make sure the fire does not re-ignite.

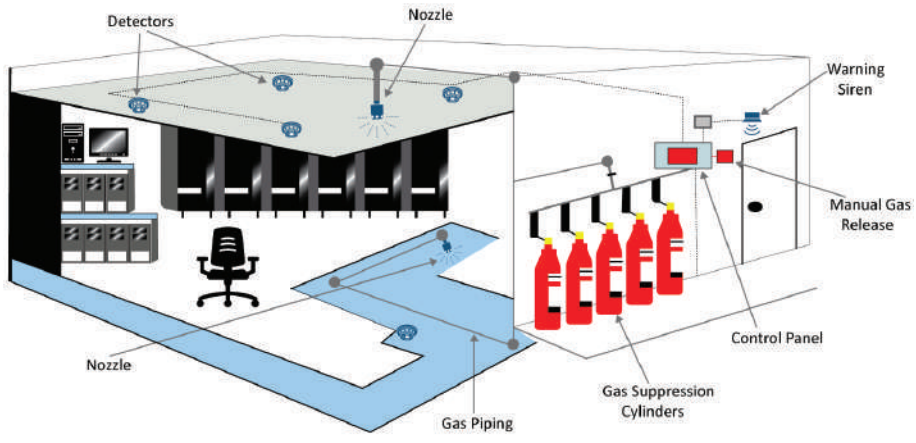
Local Application Systems

A local application system is designed to protect a specific piece of equipment, in isolated, unenclosed hazards by applying gaseous extinguishing agent directly onto the fire using strategically positioned nozzles.

How Do I Operate A Gas Suppression System?

Gas suppression systems commonly include three key elements: notification devices, control panel and smoke detectors. The smoke detectors are the first line of defence and activate the control panel when smoke is detected. The control panel then activates the notification devices and releases the agent from a bank of cylinders through the piping to the nozzles.

Occupants will see and hear the active notification devices and know that the fire suppression agent will release soon. If the occupants observe a fire before the smoke detectors activate, they can release the gas via a manual control station.



Maintenance, Inspection & Testing

Western Australia's building legislation requires owners of Class 2 to Class 9 buildings (which includes residential apartments) to ensure the building's firefighting services and equipment are maintained. This is to ensure that safety systems remain capable of performing to a standard not less than they were originally required and commissioned to achieve.

There is a financial penalty for noncompliance with the building legislation.

The Building Commission considers the adoption of Australian Standard AS1851-2012 Routine service of fire protection systems and equipment as good practice and a means for owners to ensure fire safety measures are serviced at regular frequencies to demonstrate suitable operation, and rectified or repaired if necessary to meet their regulatory obligation on maintenance.

AS1851 requires special hazard systems to be inspected every month. There are additional inspection and test checklists required to be undertaken six monthly, yearly and ten yearly.

ROUTINE SERVICE FREQUENCIES	Monthly	Three Monthly	Six Monthly	Yearly	Five Yearly	Ten Yearly	Twenty Five Yearly	Thirty Yearly
Fire Detection	✓		✓	✓	✓			
Occupant Warning	✓			✓	✓			
Exit & Emergency Lighting			✓	✓				
Fire Extinguishers			✓	✓	✓			
Fire Doors		✓ Horizontal Sliding Doors	✓	✓				
Fire Hose Reels			✓	✓				
Fire Hydrants	✓ Where Pumpsets Fitted		✓	✓	✓			
Fire Pumps	✓		✓	✓	✓			
Gas Suppression	✓		✓	✓		✓		
Sprinkler Systems	✓		✓	✓	✓	✓	✓	✓

Design

We design solutions, tailored to your building.

Installation

Our installation teams are focused on delivering on time and on budget projects.

Service & Maintenance

We offer regular servicing and maintenance to ensure that your systems are working at their optimum level.

Emergency Call Out

The Emergency Call Out Service ensures that you are covered 24 hours, 7 days a week for fault and emergency.

Fire Safety Training

We deliver training courses to ensure your team has the knowledge to act competently during an emergency.

FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia

National Fire Industry Association Member

neca Member

NO EXCUSES TOWARDS ZERO HARM

FREE advice and site inspections.
Contact us now for assistance with your next project or to learn more about our solutions.

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