

IG55 by Concept

Inert Gas Fire Suppression System



Agent

IG55 agent is a mixture of two naturally occurring gases: nitrogen and argon. As **IG55** agent is derived from gases present in the earth's atmosphere, it exhibits no ozone depleting potential, does not contribute to global warming, nor does it contribute unique chemical species with extended atmospheric lifetimes. Because **IG55** agent is composed of atmospheric gases, it does not pose the problems of toxicity associated with the chemically derived Halon alternative agents.

Application

The **IG55** Fire Suppression System, supplied by **Concept** Fire Suppression Ltd is an engineered system utilising a fixed nozzle agent distribution network. The system is designed and installed in accordance with ISO14520-14 or the National Fire Protection Association (NFPA) Standard 2001. When properly designed, the **IG55** system will extinguish surface burning fire in Class A, B, and C hazards by lowering the oxygen content below the level that supports combustion. **IG55** agent is used at design concentrations between 40% and 50%. The system can be actuated by detection and control equipment for automatic system operation along with providing local and remote manual operation as needed. Accessories are used to provide alarms, ventilation control, door closures, or other auxiliary shutdown or functions. When **IG55** agent is discharged into a room, it introduces the proper mixture of gases that will allow a person to breathe in a reduced oxygen atmosphere.

Basic Use – The **IG55** system is particularly useful for suppressing fires in hazards where an electrically non-conductive medium is essential or desirable; where clean-up of other agents present a problem; or where the hazard is normally occupied and requires a non-toxic agent. The following are typical hazards protected by **IG55** systems:

- Computer rooms
- Document store
- Tape storage
- Telecommunication/Switchgear
- Vaults
- Process equipment
- All normally occupied or unoccupied electronic areas where equipment is either very sensitive or irreplaceable

Features

Composition and Materials – The basic system consists of extinguishing agent stored in high strength alloy steel cylinders. Various types of actuators, either manual or automatic, are available for release of the agent into the hazard area. The agent is distributed and discharged into the hazard area through a network of piping and nozzles. Each nozzle is drilled with a fixed orifice designed to deliver a uniform discharge to the protected area. On hazards where two or more cylinders are needed, a pipe manifold assembly is employed. The cylinder(s) is connected to the distribution piping or the manifold by means of a flexible discharge bend and check valve assembly.

Additional equipment includes – Control panels, releasing devices, remote manual pull stations, corner pulleys, door closures, pressure trips, bells and alarms, and pneumatic switches. All or some are required when designing a total system.

IG55 Agent – **IG55** agent is a mixture of two inerting (oxygen diluting) gases: 50% nitrogen and 50% argon. **IG55** gas extinguishes fire by lowering the oxygen content below the level that supports combustion. When **IG55** agent is discharged into a room, it introduces the proper mixture of gases that still allow a person to breathe in a reduced oxygen atmosphere. It actually enhances the body's ability to assimilate oxygen. The normal atmosphere in a room contains 21% oxygen. If the oxygen content is reduced below 15%, most ordinary combustibles will cease to burn. **IG55**

agent will reduce the oxygen content to approximately 12.5%.

Cylinders – The cylinders are constructed, tested, and CE marked.

Cylinder Assembly – The cylinder assembly is of steel construction with a red standard finish. Four sizes are available 10L, 67L, 80L, 140L, the most widely used being the 80L. Each cylinder is equipped with a valve either standard or self regulating depending upon the manufacturer.

Electric Actuator – Electric actuation of an agent cylinder is accomplished by an electric actuator. In auxiliary or override applications, a manual lever actuator can be installed on top of the actuator.

Detection System – The **Concept** Fire Suppression Ltd Control System is used where an automatic electronic control system is required to actuate the **IG55** system. This control system is used to control a single fixed fire suppression or alarm system based on inputs received from fire detection devices. The detection circuits can be configured using coincidence or independent inputs. The control system is designed to BS5839 or BS6266.

Nozzles – Nozzles are designed to direct the discharge of **IG55** agent using the stored pressure from the cylinders. Nozzles are available in 360° discharge patterns from 15mm to 40mm. The system design specifies the nozzle and orifice size to be used for proper flow rate and distribution pattern. The nozzle selection depends on the hazard and location to be protected.

Make **Concept** Fire Suppression Ltd with **IG55** part of your fire protection plan.

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Smoke Detectors

Smoke detectors arranged so that two detectors from two zones are require before the gas is discharged.



Discharge Nozzles

From 15, 20, 25 and 40mm discharge nozzles ensure the gas agent is discharged throughout the room and voids.



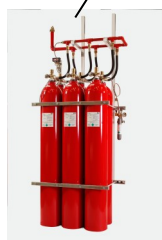
Optional VESDA Detection

For increased levels of detection VESDA is utilised to give early warning of a fire.



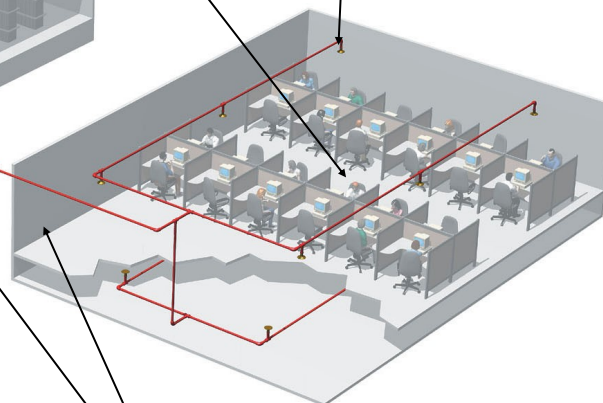
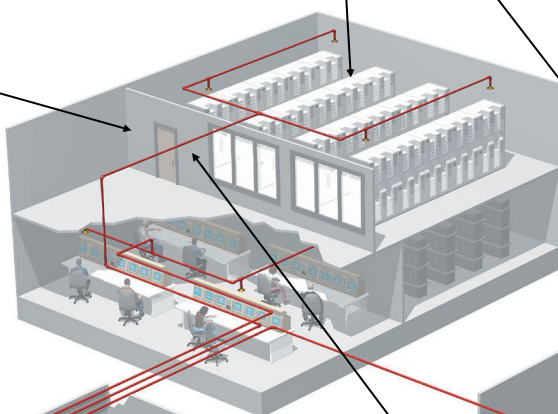
Selector Valves

25, 40, 50 and 80mm Selector Valves available for multi-risk applications.



Cylinders

10, 67, 80 and 147L agent cylinders at 200bar and 300 bar.



Control Panel

3 to 8 zone control panels controlling 1 to 4 areas.



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