



FIXED EXTINGUISHING SYSTEM  
with CARBON DIOXIDE  
EXTINGUISHING AGENT

LOW  
PRESSURE

FIRE  
PROTECTION

## SAFETY FOR EQUIPMENT



The rapid and effective response of the extinguishing system is key for minimizing the damage caused by a fire in any space, especially in spaces housing very expensive equipment or machinery. Protection of equipment in many organizations is critical to ensure the safety and continuity of the business.

**CO<sub>2</sub> as an extinguishing agent has proven effective for a variety of hazards over several decades.**

The low-pressure CO<sub>2</sub> system is suitable for cases where large spaces need to be protected, where different agent discharges are required, where many hazards need to be protected and where the volume of agent to be stored is too large.



## LOW PRESSURE

Low-pressure CO<sub>2</sub> equipment is used to protect very large enclosures which require a lot of agent. It is the most cost-effective solution for covering large rooms where there is no staff present. It can be discharged numerous times and is highly recommended when there are several fires sources that can spread the fire.

The equipment adapts to both total flooding and local application systems. For agent storage, we have large tanks that retain the agent in a liquid state at a temperature of -20 °C and 20 bar pressure.

A single tank can store from 1 to 60 tons of CO<sub>2</sub>.

# RELEASE METHOD

## TOTAL FLOODING

Protects the entire contents of a room. Used in enclosures which need to be as leak-tight as possible. The idea is to flood the room containing the hazard and reach the required CO<sub>2</sub> concentration in 60 seconds. The hazard must be contained in a permanent enclosure for the concentration to be effective for the required period.

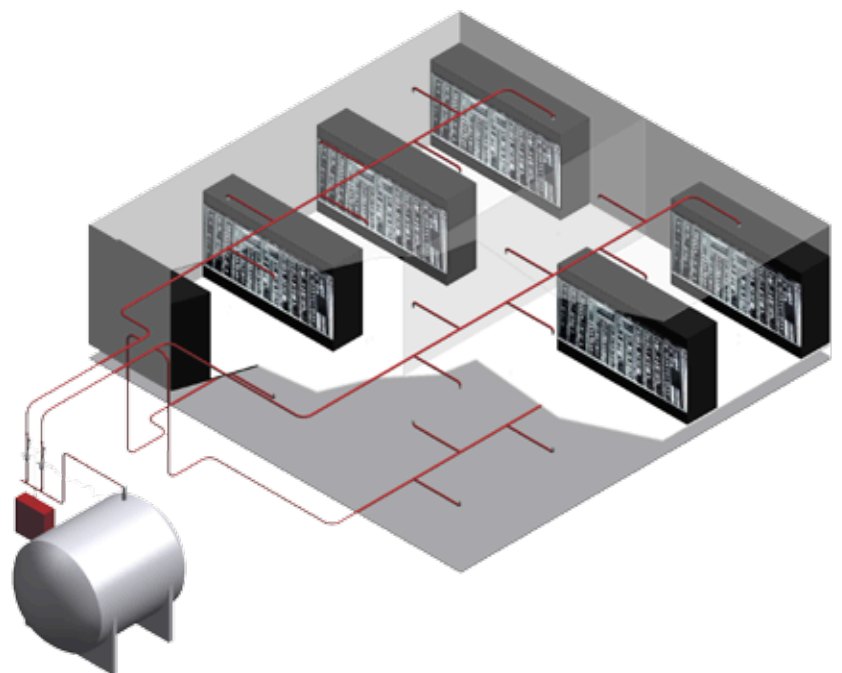
Small openings are allowed, provided the surface area does not exceed the limits specified in the standards.

## EXTENDED DISCHARGE

When the protected space is not leak-tight enough and this situation cannot be addressed, low-pressure CO<sub>2</sub> equipment can discharge for the time needed to maintain required concentration.

The discharge rate is normally lower at this stage, once most of the agent is discharged.

*The typical arrangement of this equipment is as follows: low-pressure tank, pipework and application nozzles.*



## LOCAL APPLICATION

System for protecting objects regardless of the enclosure that houses them. The main extinguishing method in the case of local application is cooling. The agent is therefore applied directly, quickly and massively over the protected object. The discharges are performed within 30 seconds, with more agent and greater pipe diameters to allow increased flow of CO<sub>2</sub>. The idea is to cover all surfaces that need to be protected through strategic nozzle placement. The safety of the enclosure should be increased by protecting adjacent areas at risk of being reached by the flames.

When the autoignition point of the material at risk of combustion is below its boiling point, as is the case with oils and waxes, discharge time may be increased for the purpose of cooling the material.

## MULTIPLE PROTECTION

The protection mechanism can be designed with selector valves to act in multiple areas. These components distribute the flow to the area at risk when fire alarm sounds.

The agent quantities must always be calculated for the worst cases requiring the maximum amount of gas.

SIEX-CO<sub>2</sub><sup>TM</sup> LP is well suited for protecting multiple areas thanks to its large CO<sub>2</sub> storage capabilities. One single installation can be sufficient to provide a complete solution for an entire complex.

## EXTINGUISHING AGENT RELEASE PRINCIPLES

CO<sub>2</sub> works by **SUFFOCATION**, by removing oxygen from the atmosphere and thus causing the rapid extinguishing of the fire.

This principle is complemented by its **COOLING** function. Fire propagation is slowed thanks to its power of penetrating burning materials and drastically lowering its ignition temperature.



# BENEFITS OF THE SYSTEM

## SAFE FOR EQUIPMENT

Its chemical composition does not react with electrical or electronic components, so there is no risk of corrosion or damage to equipment. It is also perfectly suited for the protection of all types of systems as it is **completely clean and does not generate residue** after discharge.

## VERSATILE APPLICATION

Its great extinguishing power in both **total and local applications** makes it the perfect option for a wide range of applications. The range of situations in which it is effective exceeds any other fixed extinguishing system.

## EASY INSTALLATION AND MAINTENANCE

Since the agent can be stored in low-pressure tanks, there are no cylinders to need maintenance or re-stamping. Refilling is as simple as installation, because there is no need for high-pressure piping.

## FLEXIBLE STORAGE OPTIONS

Agent amounts are set according to hazard needs. Likewise, the problem of the large tank volume is solved since it can be installed both inside and outside the enclosure.

## BENEFITS OF CO<sub>2</sub>

*HARMLESS FOR THE OZONE LAYER ■ DOES NOT CONDUCT ELECTRICITY*

*AVAILABLE WORLDWIDE ■ LOW COST EXTINGUISHING AGENT*

*CLEAN, LEAVES NO RESIDUE*

# APPLICATIONS

- *MOTOR INDUSTRY*
- *ELECTRIC PLANTS*
- *FINAL ASSAMBLY LINES*
- *STEEL INDUSTRY*
- *CARBON INDUSTRY*
- *FLAMABLE LIQUIDS STORED*
- *CEMENTS PLANTS*
- *SILOS*

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