

CO2 ROOM FLOODING SYSTEM



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A CO₂ Room Flooding System is a fixed fire suppression system designed to extinguish fires by releasing carbon dioxide gas into an enclosed room or protected area. The discharged CO₂ rapidly reduces oxygen concentration and suppresses combustion without leaving residue.

A CO₂ total flooding system protects an entire enclosed space by discharging a calculated quantity of carbon dioxide gas to achieve a fire-extinguishing concentration throughout the room.

WORKING PRINCIPLE

The system works on the principle of oxygen displacement and partial cooling.

Operation Process

1. Fire detected by:
 - Smoke detector
 - Heat detector
 - Flame detector
 - Manual release station
2. Control panel activates alarm and time delay.
3. CO₂ cylinders open automatically or manually.
4. CO₂ gas flows through piping and nozzles.
5. Gas floods the protected room.
6. Oxygen level drops below combustion requirement.
7. Fire extinguishes rapidly.

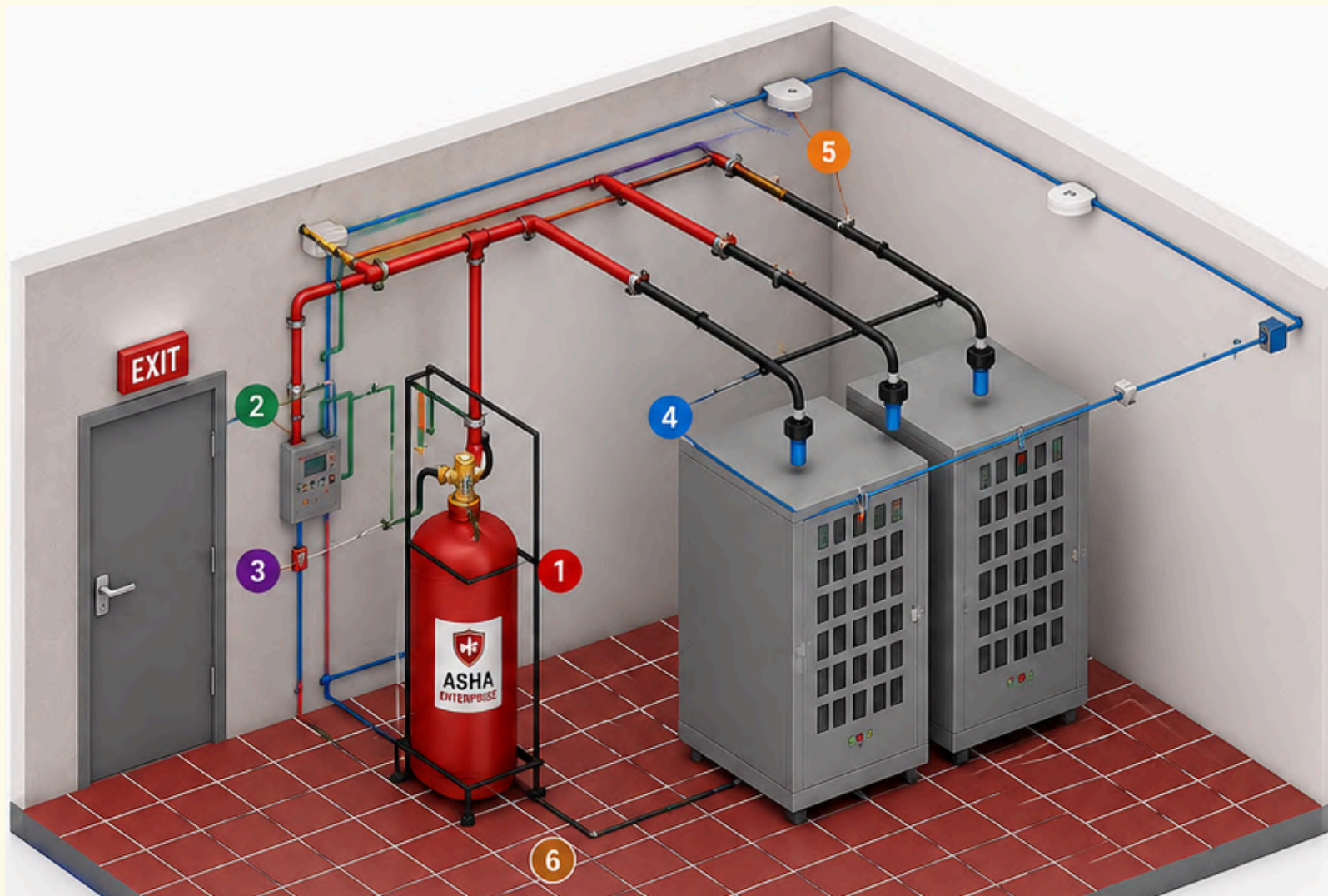
ADVANTAGES

- Fast fire suppression
- No water damage
- No residue after discharge
- Electrically non-conductive
- Suitable for sensitive equipment
- Deep penetration into hazard area
- Low maintenance

APPLICATION

- Electrical rooms
- Server rooms
- Engine rooms
- Control rooms
- Dip tanks
- Printing machines
- Industrial equipment

CO₂ FIRE SUPPRESSION SYSTEM – WORKING DIAGRAM



This image shows a CO₂ Fire Suppression System used for protecting server rooms, electrical panels, control rooms, and industrial areas from fire.

Main Components in the Image

1. Agent Cylinder

- Stores CO₂ gas under high pressure.
- Releases the extinguishing agent during fire conditions.

2. Control Panel

- Monitors the entire fire suppression system.
- Receives signals from smoke or heat detectors.
- Activates alarms and releases CO₂ automatically.

3. Manual Release Station

- Allows manual activation of the system during emergency situations.

4. Detection System

- Smoke or heat detectors identify fire at an early stage.
- Sends signal to the control panel.

5. Discharge Nozzles

- Installed above protected equipment.
- Evenly discharge CO₂ gas into the protected area.

6. Piping Network

- Connects cylinders to discharge nozzles.
- Carries CO₂ agent throughout the system.

Working Process

Step 1 – Fire Detection

Smoke or heat detectors sense fire and send a signal to the control panel.

Step 2 – Alarm Activation

The control panel activates audible and visual alarms to warn personnel.

Step 3 – CO₂ Release

The cylinder valve opens automatically or manually.

Step 4 – Gas Discharge

CO₂ flows through the piping and discharges through nozzles.

Step 5 – Fire Suppression

CO₂ reduces oxygen concentration and quickly extinguishes the fire without damaging electrical equipment.

KEY FEATURES

- Fast fire detection and suppression
- Safe for electrical and electronic equipment
- No residue after discharge
- Automatic and manual operation
- Reliable protection for critical areas



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