

SANTA ROSA FIRE DEPARTMENT FIRE PREVENTION BUREAU STANDARD

July 1, 2010



CO2 EXTINGUISHING SYSTEM

PURPOSE

This standard outlines the general requirements for the Specialized Fire Suppression System Carbon Dioxide. This Standard is prepared for the use and guidance of those charged with the purchasing, designing, installing, testing, inspecting, approving, listing, operating, or maintaining of these types of unique systems, in order that such equipment will function as intended throughout its life.

The following information contained in this standard is provided for typical instances and may not address all circumstances. Additional requirements may apply based upon the scope of work. Omissions from these Guidelines do not relieve anyone of their responsibility to complete their project in a good and workmanlike manner.

Allow at least 10 working days for the review of submitted plans. Please call the Fire Department Fire and Life Safety Review Division at 543-4351 for additional information.

CODE REFERENCES

NFPA 12 Carbon Dioxide
Santa Rosa City Code, Chapter 18-44
Title 19 California Code of Regulations

PERMIT(S) REQUIRED

- Fixed Fire Extinguishing System
- Fire Alarm Permit (new system or modification permit may be required based on scope of work)

Categories and fee amounts are found at: <http://ci.santa-rosa.ca.us/doclib/Documents/IB%20018.pdf>

ATTACHMENTS

- 1) Plan Review Checklist
- 2) Inspection Checklist

REQUIRED INSPECTIONS

Inspections shall be scheduled a minimum of 48 hours in advance. Directions for scheduling are found at: <http://ci.santa-rosa.ca.us/news/Pages/AutomatedFireInspectionRequestSystem.aspx>

PLAN REQUIREMENTS

- Plans for a Specialized Fire Suppression Systems shall be prepared under the supervision of a person fully experienced and qualified in the design of these types of systems.
- Plans and calculations shall be submitted for approval to the Fire Department before the installation begins.
- The plans shall contain sufficient detail to enable to evaluate the hazard or hazards and evaluate the effectiveness of the system.

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- The plan details shall include the following:
 1. Materials involved in the protected hazards
 2. Location of the hazards.
 3. Enclosure or limits and isolation of the hazards
 4. Surrounding area that could affect the protected hazards.
- The details of the system shall include the following:
 1. Information and calculations on the amount of agent used to protect the hazards.
 2. Location and flow rate of each nozzle, including equivalent orifice size.
 3. Location, size, and equivalent lengths of pipe, fittings and hose.
 4. Location and size of the agent tank(s).
 5. Details of piping size, reductions (reducing couplings or bushings) and orientations of tees shall be clearly indicated.
 6. Information shall be submitted pertaining to the location and function of the detection devices, operating devices, auxiliary equipment, and electrical circuitry, if used.
 7. Only listed and approved equipment and devices shall be used in the system.

INSPECTIONS

- A visual inspection of the installed system and hazard shall be conducted.
- The piping, operational equipment and discharge nozzles shall be inspected for proper size and location.
- The configuration of the hazard shall be compared to the original hazard specification.
- A check of labeling of devices for proper designations and instructions shall be preformed.
- Nameplate data on the storage containers shall be compared to specifications.
- Any and all signage required shall be in place.

OPERATIONAL TESTS

The discharge of carbon dioxide in fire-extinguishing concentration creates serious hazards to personnel, such as suffocation and reduced visibility during and after discharge period. All personnel shall be removed from the testing area prior to activation of the system.

A nondestructive operational test on all devices is necessary for the functioning of the system, including the testing of the detection and actuation devices shall be conducted.

FULL DISCHARGE TEST

A full discharge test shall be preformed on carbon dioxide systems.

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ACCEPTANCE OF THE SYSTEM

Upon completion and acceptance of the system and the discharge test, the system shall be placed in service and the system tagged and sealed.

The system owner shall maintain an instruction and maintenance manual that includes a full sequence of operation, and a full set of system drawings and calculations shall be maintained in a protective enclosure.