

FARA Standard for Smoke Emitting Devices



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Definitions

1. **Smoke Emitting Device:** A machine specifically constructed to be triggered/activated by an intruder detection system that, when activated, produces a dense smoke, fog or vapor to reduce visibility in the protected area.
2. **Smoke Emitting Device Activation:** Any intentional or accidental production of smoke, fog or vapor by a smoke emitting device.
3. **Smoke Emitting Device Site:** A single fixed premises or location served by a smoke emitting device or devices. Each unit, if served by a separate smoke emitting device in a multi-unit building or complex, shall be considered a separate smoke emitting device site.

All smoke emitting devices shall:

1. be designed and constructed as security products. NOTE: Smoke generating devices from other industries, e.g. theatrical and chemical foggers should NOT be sold or offered for sale as smoke security devices.
2. enclose all material parts/components of the smoke generating device within a secure, tamper protected outer case. Fundamental to this are the electronic control system, the fluid and the battery back-up protection.
3. protect the discharge nozzle to prevent accidental touching and any risk of burning.
4. be controlled by electronic controls fitted with self-monitoring facilities.
5. incorporate a method for regulating the production of smoke once the machine has been activated. This should limit the maximum operational time of the machine from an alarm activation even if the alarm is not deactivated before the operational period has finished. NOTE: A method of regulating the smoke density, by sensor, timer or other means, while the system is active should also be considered.
6. be activated by a failsafe signal that is not activated upon a failure of power to the device to guard against false activations.
7. include electromagnetic and radio frequency signal filtering as part of the control electronics.
8. fully monitor the heating unit of the machine for overheating to prevent the risk of fire, and under heating to prevent the production of wet fog.
9. interface with the alarm panel to provide minor and catastrophic fault messages. Catastrophic faults are defined as: incorrect temperature, no fluid, control circuit failure and timer reset. Any catastrophic failure should generate an 'engineer required' prompt and prevent activation of the smoke emitting device.
10. be listed or approved for safety by UL or an equivalent third party testing organization.
11. include a comprehensive manual covering the wiring and circuit diagrams that are necessary for machine operation and installation.
12. include a detailed service maintenance and trouble-shooting guide.
13. only utilize fluids and produce smoke, fog or vapor tested and listed or approved by an independent testing authority for health and safety to be nontoxic and safe for exposure to humans for over one hour. Use of smoke, fog or vapor that is distinguished by smell or color from smoke generated by a fire is recommended.
14. provide a signal that the machine has been activated. At a minimum, the activation should be recorded by the alarm panel log. NOTE: Consideration should be given to using a smoke emitting device that incorporates an internal event log that in addition to recording activations also records other critical functions within the smoke emitting device in the log. The log within the smoke emitting device should be tamper resistant.

All Smoke Emitting Devices installed and/or operated in this jurisdiction shall not:

1. be configured to form a "man trap", i.e. they should not activate after a person has passed so as to prevent exit/escape.
2. be installed to cover escape routes and staircases of areas of the building that are still occupied.
3. be operable when the premises are occupied unless the area to be covered is unoccupied and not required for means of escape.
4. be configured for delayed activation.
5. be configured so that they can activate when the alarm is disarmed.
6. be configured to activate a smoke or heat detector under normal activation

All Alarm Installation Companies shall:

1. maintain evidence that all company personnel involved in the specification or sale of smoke security products have undergone a formal training course. At a minimum, the content should cover:
 - the specification and technical capabilities of the equipment being offered for sale
 - how to conduct a site survey
 - the parameters for advising on location and installation options
 - the method of smoke generation
 - the constituents of the fluid and the related health and safety procedures
 - the safe operating and installation requirements
 - installation procedures and demonstration procedures.
2. maintain a system for updating current employees, representatives and agents of material changes in the training course. Refresher courses should be held as and when necessary. Detailed records of training for all current and past personnel shall be available for inspection upon request. Records of past employees shall be maintained for at least two years after they leave the company.
3. display warning stickers on perimeter doors/windows of the installation site. At a minimum warning signs should be displayed at the normal entry points to the building. These shall comply with the requirements for egress signage in NFPA 101 – The Life Safety Code.
4. configure each device so that it can only be activated automatically when the alarm panel is set.
5. give consideration to premises with agreed or shared means of escape, particularly when such a route may rely on escape through an adjoining premises.
6. install devices in multi-occupancy buildings or very large sites with internally protected areas so as to contain the smoke within the protected area and not to infringe onto public areas or open areas. In such cases it is recommended that on alarm activation an audible warning of the presence of a smoke system should be given in the adjoining areas.
7. install visual and audible indications that the system has activated. These indications should be provided adjacent to the fire indicator panel where one is installed. In all other cases the indications should be adjacent to the normal entry point to the building.
8. inform the fire department, police and alarm monitoring company of the installation prior to the system being activated. A record of the notification should be kept by the alarm installation company.
9. inform the fire department, police and alarm monitoring company of the removal of the system. A record of the notification should be kept by the alarm installation company.
10. complete a successful full test activation, generated by an alarm condition. The customer's representative should be present at the test firing.
11. maintain formulations for all fluids and propellants on file.
12. be able to identify all fluid by type (formula) and batch or production.
13. post a health and safety sheet in a prominent readily visible location at each smoke emitting device site.
14. offer to provide all public safety forces involved with the smoke emitting device site with the following:
 - full technical information packs
 - health and safety sheets
 - technical presentations and demonstrations

- provision of training courses.
15. provide written and oral instructions to each of its Smoke Emitting Device Users in the proper use and operation of their Smoke Emitting Devices. Such instructions will specifically include all instructions necessary to turn the Smoke Emitting Device on and off, how to avoid false alarms and how to clear the smoke from the area.
 16. only connect to alarm control panel(s) which meet SIA Control Panel Standard CP-01.
 17. review with each Smoke Emitting Device User the Customer Checklist (See FARA Guide to Alarm Ordinances) or an equivalent checklist approved by the Alarm Administrator.
 18. notify the site safety/security officer and monitoring company and place the system in test mode if available before any work or tests are performed that could result in the release of smoke.
 19. before any demonstrations, work or tests are performed that could result in the release of smoke, assign a responsible person for the duration of any demonstration, test or work to brief persons in related areas or the building and provide reassurance to anyone who could view the smoke.