

Fire detection and alarm systems

The quicker your Fire Brigade can get to a fire – the better. Most fires generally start small, so an automatic fire alarm with smoke or heat detection means action can be taken sooner, resulting in less fire, heat, smoke and water damage.

The NZ Standard NZS 4512 – “Fire Detection and Alarm Systems in Buildings” describes the requirements for fire detection and alarm systems. It applies to their design, installation, extension, modification, commissioning, testing and maintenance.



How a fire alarm system works

A fire alarm system consists of a series of fire detectors connected to a fire alarm control panel.

Control panel – the brains of the system.

It monitors the fire detectors and activates the alarms (audible and visual), and will notify the fire brigade or monitoring station when a fire is detected. It also monitors the system for faults. Control panels can be simple and only notify of a fire in a building or more sophisticated units can identify where in the building the fire has been detected.

Fire detectors – device(s) that operate automatically when triggered by heat, smoke or flame. Examples of detectors include smoke, heat, linear detectors, or aspirating units.

Manual fire alarm switches can also be incorporated these are usually boxes marked ‘break glass’, where the button must be pushed by a person in order to signal a fire.

Fire alarm systems are connected to the main electrical supply with a battery back-up in case of power failure.

What you should consider

Fire alarm systems should be installed in accordance with NZS 4512, but there are some additional factors you should think about:

- The most suitable detector unit for your workplace and environment. For example, if the environment is dusty, a smoke detector could trigger a false alarm, whereas a heat detector won't.
- Installing detector units throughout all areas of the building, including roof spaces, under-floor areas, and concealed spaces and voids
- Ensuring Fire detectors are located in areas where they can't be easily damaged
- Getting guidance from the Fire Brigade on the best place to located alarm control panels that show the location of the fire. The faster the response the less damage to property.
- Locating manual call points in escape routes close to exit doors.

Quick tips

- Make sure installation, testing and maintenance of the fire alarm system complies with NZS 4512.
- Check to see if fire alarm installation needs to be included on a building compliance schedule. If it does, don't forget to include this as part of the Building Warrant of Fitness regime.

What about maintenance?

Routine maintenance and testing should be carried out by a suitably qualified person.

It should cover:

- A monthly test to the fire brigade to ensure that the connection is working correctly.
- An annual check and testing of the system to ensure that the batteries are in working order, that the sounders and detectors are working, and that all parts of the building are protected.
- From time to time a full evacuation drill may be required by the Fire Brigade to ensure that the alarm system remains effective.

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