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Essential Safety Measures (Fire) Untangled

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A bit about us . . .

Certified Environmental System ISO14001:2004 AFC Registered Auditors Reg. No. 14958
Certified OHS System AS4801:2001 AFC Registered Auditors Reg. No. 14958
Certified Quality System ISO9001:2008 AFC Registered Auditors Reg. No. 14958

strata community association VIC Gold Sponsor

FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia

FPAS Fire Protection Accreditation Scheme Recognised Business

FMA

MBAV MEMBER

EBIX AUSTRALIA | TRADES MONITOR ACCREDITED CONTRACTOR

Nearly 100 full time employees servicing over 8,500 sites around Victoria and the Greater Newcastle Area working with more than 2,000 managers !

As long time supporters, sponsors and educators in the industry, we are heavily involved in the fire protection, owners corporation and facilities maintenance industries:

- Strata Community Australia (SCA) gold sponsor
- Fire Protection Association of Australia (FPAA) gold member
- Fire Protection Accreditation Scheme (FPAS) participant
- Master Builders Association of Victoria (MBV) member
- Facilities Management Australia (FMA) supporter

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What is an Essential Safety Measure (ESM)?

Put simply… any ‘measures’ in place at a building/place that are designed to protect the life of occupants in the event of an emergency. (Primarily related to fire)

The Building Regulations 2018 state that: “…essential safety measure means – a safety measure specified in column 2 of the table in each Part of Schedule 8 that is required by or under the Act or these Regulations to be provided in relation to a building or place of public entertainment; or…” etc. etc.

‘Definite’ ESM are defined by Schedule 8 of the Building Regulations 2018. However, the relevant building surveyor can create additional ESMs for a property that are not specifically listed under Schedule 8 if they believe it is necessary for the safety of occupants in a particular building/place.

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This is Schedule 8 . . . .

Part 1 – Building Fire Integrity
Part 2 – Means of Egress
Part 3 – Signs
Part 4 – Lighting
Part 5 – Fire Fighting Services and Equipment
Part 6 – Air-handling Systems
Part 7 – Automatic Fire Detection and Alarm Systems
Part 8 – Occupant Warning Systems
Part 9 – Lifts
Part 10 – Standby Power Supply System
Part 11 – Building Clearance and Fire Appliance
Part 12 – Mechanical Ventilation and Hot, Warm and Cooling Water Systems

If a building has assets that fall under one of these categories, then it must form part of the building's ESM.

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Which buildings have an obligation to maintain ESM

Under the *Building Regulations 2018,* the requirements in relation to the maintenance of ESM apply to all buildings in classes 1b, 2, 3, 4, 5, 6, 7, 8 and 9.

These ESM requirements do not apply to buildings in classes 1a or 10, nor to smoke alarms installed inside sole-occupancy units within a class 1b, 2 or 4 building.

Building Code of Australia 2015 – Part A3 Building Classifications

Class 1a – Single, detached dwelling. i.e. house, townhouse, unit.
Class 1b – Boarding house, guest house, hostel, etc. less than 300m2.
Class 2 – Multi-unit apartment buildings.
Class 3 – Residential accommodation other than classes 1 or 2. Similar to 1b, but larger.
Class 4 – A residential dwelling inside a non-residential building.
Class 5 – Offices
Class 6 – Shops
Class 7a – Car parks
Class 7b – Warehouses, storage facilities, etc.
Class 8 – Factories, manufacturing facilities, etc.
Class 9a – Hospitals and health-care facilities.
Class 9b – Buildings for public assembly. i.e. theatres, churches, schools, etc.
Class 9c – Aged-care facilities
Class 10 – Non-habitable buildings or structures.

Who is responsible for maintaining ESM?

In short it is ‘the owner’ of the building who is responsible, as per the sections of the *Building Regulations 2018* mentioned previously (216, 219, 226).

The owner is also for responsible for preparing an AESMR (Annual Essential Safety Measures Report – section 223.)

One exception relates to paths of travel. As well as the owner having an obligation, the ‘occupier’ of a building also has a legal obligation to keep all exits and paths of travel accessible, functional and free of obstruction (section 228).

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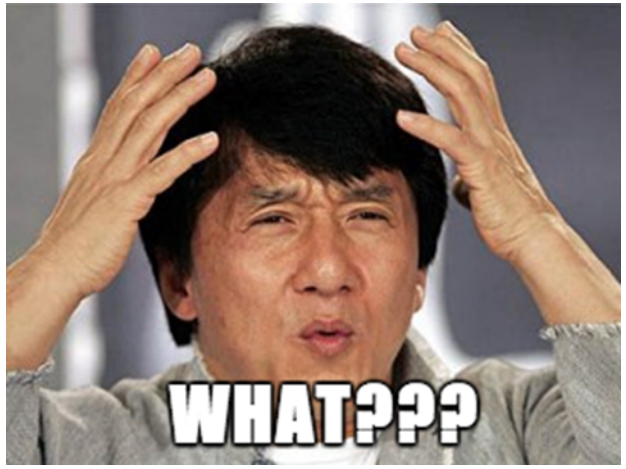
Occupancy Permits

"…but my building *MUST* be compliant, it was signed off!"

Not necessarily. The Occupancy Permit (OP) is a statement that the building is *suitable to occupy*. It is **not** a statement that the building is compliant with relevant acts, regulations, building codes, standards, planning requirements or standards of workmanship, etc. (refer *Building Act 1993,* section 46).



BUILDING ACT 1993 - SECT 46 - Effect of occupancy permit

(1) An occupancy permit under this Division is evidence that the building or part of a building to which it applies is suitable for occupation.

(2) An occupancy permit under this Division is not evidence that the building or part of a building to which it applies complies with this Act or the building regulations.

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Australian Standard AS 1851-2012

AS 1851-2012 is the main standard used by companies like LINKfire to maintain ESM in buildings. It is not concerned with what ESM a building needs, but rather ***how*** and ***how often*** you need to inspect and service each type of ESM. AS 1851-2012 covers a majority of ESM types, but some ESM types rely on other Australian Standards (mechanical ventilation and exit & emergency lighting for examples), or the BCA itself.

It is worth keeping in mind that although Australian Standards and the BCA are uniform across Australia, their implementation is not – The *Building Act 1993* and the *Building Regulations 2018* are Victorian legislation. As such, the way in which ESM are regulated and enforced can vary in different parts of the country.

In Victoria, AS 1851-2012 became the primary standard for ESM servicing in December 2016 and this has since been confirmed by the *Building Regulations 2018.*

Australian Standard AS 1851-2012 Defects reporting

AS 1851-2012 also clarifies how ESM defects need to be categorised, according to three levels of severity: Critical, Non-Critical and Non-Conformance.

LINKfire also use a fourth category – Recommendation. We use this category either in cases where action is required with something that is not directly covered under ESM maintenance, or the action is a recommendation only and is not necessarily required at all.

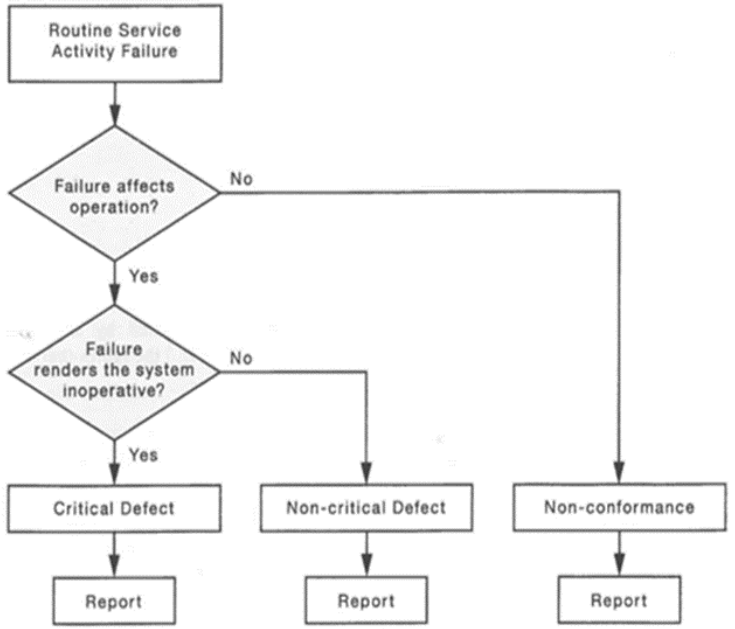

FIGURE 1.5.6 ROUTINE SERVICE ACTIVITY FAILURE

1.6 ABBREVIATIONS

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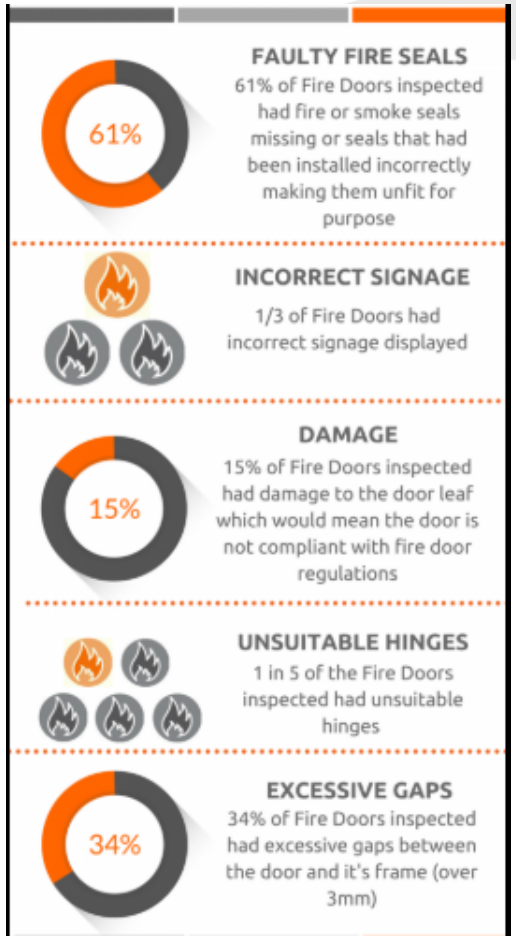
Doors and Egress (POT)

Common Fire Door Defects



Paths of travel (POT) are the means by which building occupants can move safely to a designated exit during an emergency, such as a fire.

FIRE / SMOKE DOORS – WHY DO WE NEED THEM?

To allow an opening in a fire–resistant wall/structure with out compromising it's ability to be fire rated

To contain fire for a period of time to allow persons to pass safely.

To limit the spread of fire, reducing possible damage to property

To give fire fighters safe access to a property to retrieve persons inside and fight the fire.

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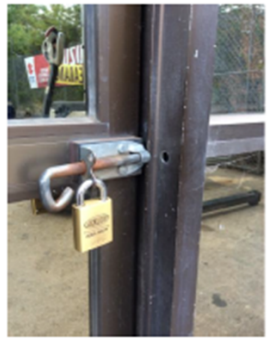
Common POT Defects

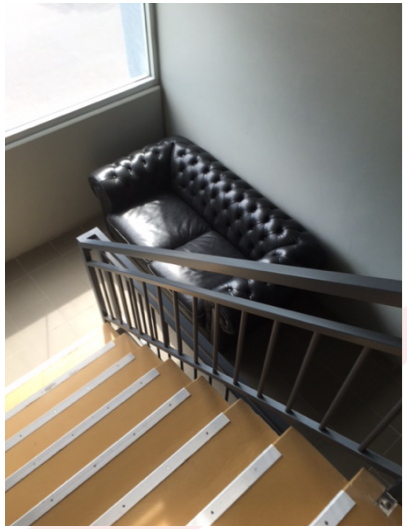
✗ ✓

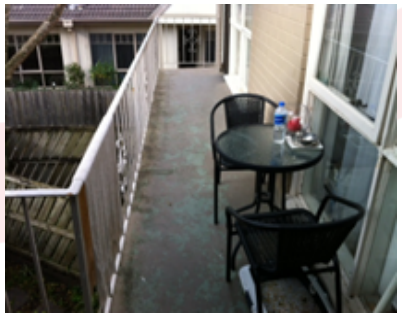
Non-compliant	Suggested compliant alternative
 	 

✗ **Non-compliant**

There are no compliant alternatives to these additional locks and therefore must be removed to comply!





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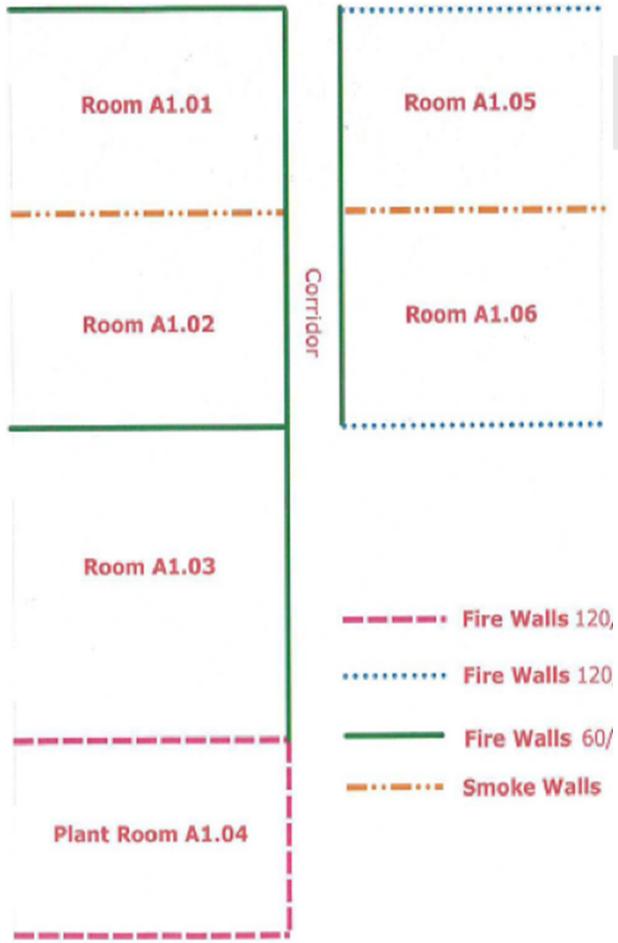
Passive Fire Resistances

Penetrations



The spread of fire within a building is usually a result of fire taking advantage of any weakness in the construction or by burning through building materials or by conducting heat throughout the structure. Fire, hot gases and smoke can spread through stairways, lifts, escalators corridors, chutes, ducts and other cavities.

Passive fire and smoke containment refers to products used to contain the spread of fire and smoke, to resist, retard and isolate a fire along with the associated smoke and toxic gases. They are described as passive because they do not extinguish a fire but rather retard and prevent the spread of fire and smoke. These products protect the ‘weak’ points of buildings that would otherwise allow the free and uncontrolled passage of fire, smoke and fumes.

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Extinguishers

Type (Fire / Extinguisher)	CLASS A Combustible materials (e.g. paper & wood)	CLASS B Flammable liquids (e.g. paint & petrol)	CLASS C Flammable gases (e.g. butane and methane)	CLASS D Flammable metals (e.g. lithium & potassium)	Electrical Electrical equipment (e.g. computers & generators)	CLASS F Deep fat fryers (e.g. chip pans)	Comments
Water	✓	✗	✗	✗	✗	✗	Do not use on liquid or electric fires
Foam	✓	✓	✗	✗	✗	✗	Not suited to domestic use
Dry Powder	✓	✓	✓	✓	✓	✗	Can be used safely up to 1000 volts
CO2	✗	✓	✗	✗	✓	✗	Safe on both high and low voltage
Wet Chemical	✓	✗	✗	✗	✗	✓	Use on extremely high temperatures

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Exit and Emergency Lights

Emergency lighting is wired to the building's power supply for continuous charging of internal batteries to provide back up power for the lighting. This ensures tha lights remain alight during a power outage allowing occupants to easily locate the exits should they need to evacuate the building

In theory replacing a battery is cheaper than replacing a full light fitting, but unfortunately, it is not as simple as that. There are many parts of an Emergency Light that can cause the light to not work / fail the testing requirements. – battery, circuitry, charging device can all cause faults. We can also warranty a new unit!

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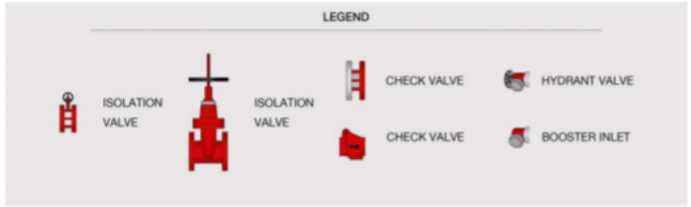
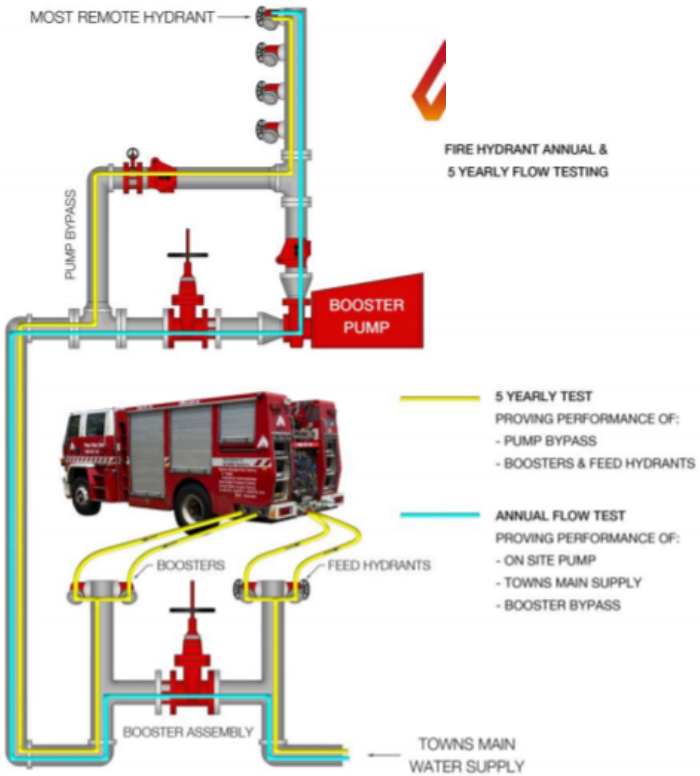
Hydrants





Hydrants should be tested every six months to ensure the water pressure and flow rates are adequate and flow tested annually to check the pressure on the most hydraulically disadvantaged hydrant within a circuit.

If there is more than one circuit or system, multiple flow tests will be required – one for each system.

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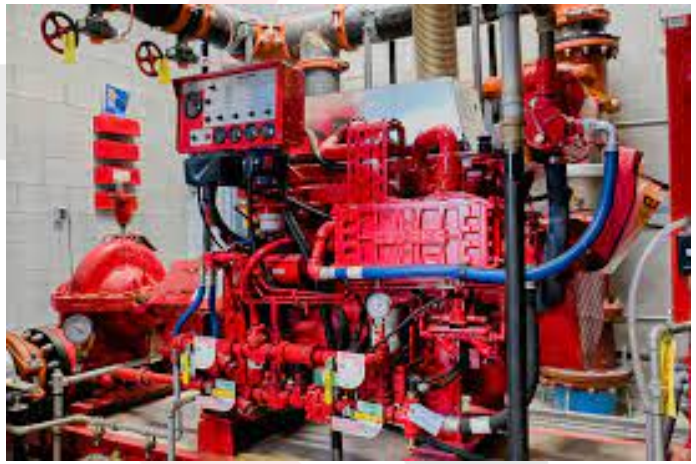
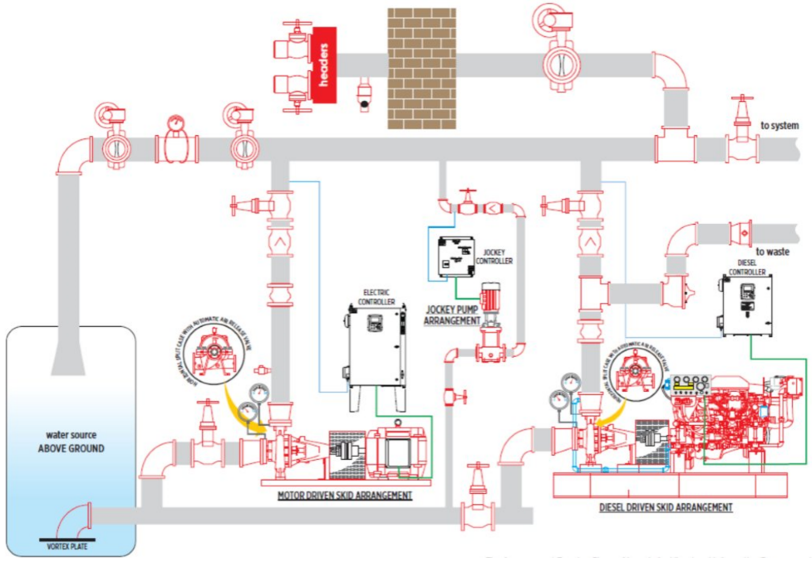
Sprinkler Systems





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Sprinkler Systems

Some of the important bits . . . .

Flow Switch – Monitors the flow or movement of water through a pipe, helps identify where water is flowing

Pressure Switch – Senses a change in water pressure in the system can be a rise or fall in pressure. These are used as a means of activating alarms, and are also used to operate jacking and other pumps.

Jacking Pump – Maintains pressure in system. Stable system pressure minimises false alarms and unnecessary activation of booster pumps.

Valve monitor – Activates signal to fire panel and/or alarm signalling equipment when a monitored valve is operated. To dissuade tampering.

Booster Pumps – Where mains water pressure is not sufficient to supply required flow rate booster pumps may be installed to increase flow in the system to required levels.

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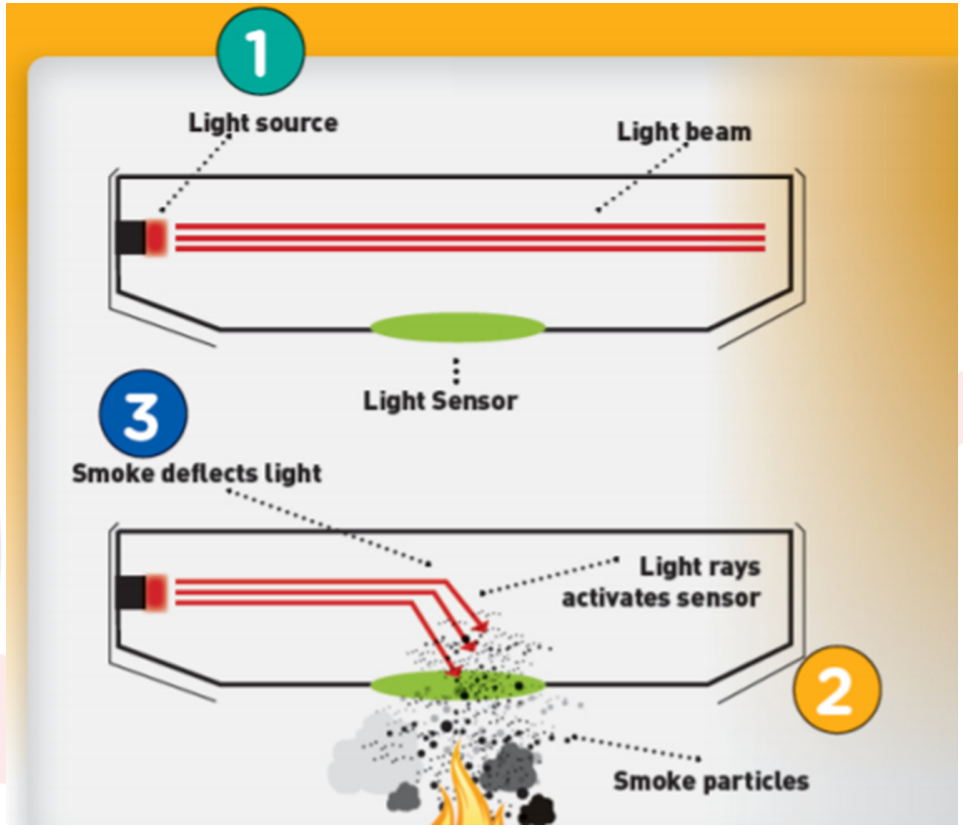
Fire Detection

Photo Electric smoke detector:

LED lights (like a laser pointer) in straight lines to a photo sensor, particles break the light and activate the sensor.

Particles could be smoke, dust, powder, steam.



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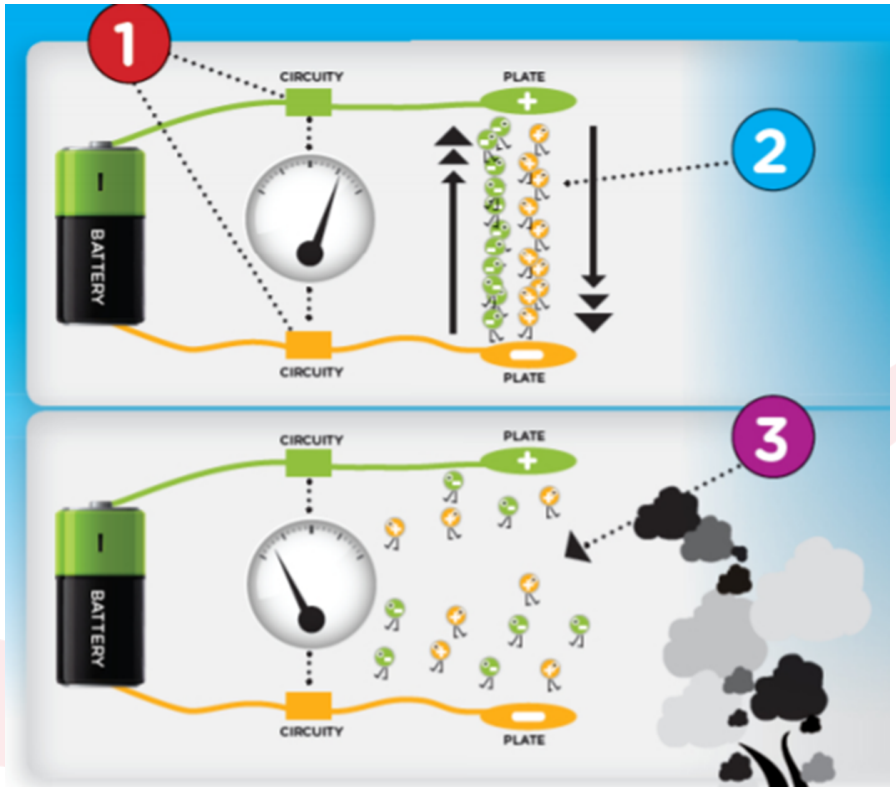
Fire Detection

Ionization Smoke Detector:

Americium 241 (yes, that's a real thing), converts air into positive and negative ions which move between 2 sensor electrodes create a circuit. Particles enter the alarm and bond with the ions which breaks the circuit and sets off the alarm.



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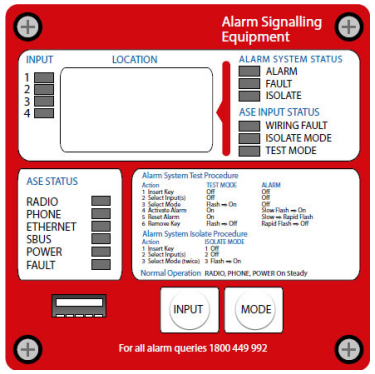
Fire Detection

Fire Indicator Panels (FIP). . . .

Conventional Panel organises it detectors (actuating devices) into zones which are monitored by the panel. When a detector registers an alarm, that zone will be considered to be in alarm, giving you an indication of what area of the building the fire is located.

Addressable Panel is a far more complex system. An addressable system has a display so that emergency services are able to identify the detector in alarm and know its exact location.



This is an Alarm Signalling Equipment unit. This is what talks to your monitoring company from your Fire Panel. If you don't have one of these all alarms are for internal notification only.

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Fire Detection

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AESMR

Annual Essential Safety Measures Report

First, lets talk about what it is NOT . . . . . .

The AESMR **is not**:

- A statement that 100% of ESM in the building is necessarily compliant at that particular point in time
- A separate physical audit of all ESM in the building, nor an audit of the fire contractor/s in place

So, it is a statement . . . . . .

To be compliant, the owner needs to have taken “all reasonable steps” to ensure that all ESM are appropriately maintained and operational. Other important information included in the AESMR is a table of all ESM on site and details of who has maintained them over the previous 12 months.

AESMR

Annual Essential Safety Measures Report

Under section 223 of the *Building Regulations 2018,* the owner of a building must prepare an AESMR each year. The owner can also have the AESMR prepared by an 'agent' on their behalf.

Compliance of the *Building* vs Compliance of the *Owner*

The AESMR is a statement in relation to the *owner* complying with their ESM obligations. The format of this compliance statement under the regulations is that:

"…the owner has taken all reasonable steps to ensure that each essential safety measure in the building or place – (i) is operating and has been maintained in a state that enables the essential safety measure to fulfil its purpose; and (ii) has been inspected, tested and maintained in accordance with the Act and these Regulations." (*Building Regulations 2018,* Section 224(f)).

What happens if an owner doesn't comply?

Most importantly, there could be a risk to the life of occupants! Remember that ESM are in place for a reason.

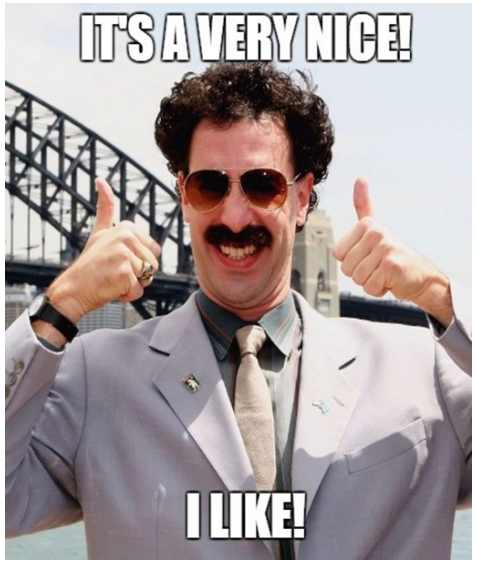
The Victorian Building Authority (VBA), Municipal Building Surveyor (local council) or Chief Officer (fire brigade) can inspect sites, demand all records be produced within 24 hours and issue on-the-spot fines if they deem it appropriate.

Building Notices and Building Orders can be issued by the Municipal Building Surveyor leading to legal action if they are not complied with, evacuation of the building, or even the council causing works to be undertaken at the owner's expense.

There could potentially be further issues with **buildings insurance** or liability in the event of a fire.

Thank you

Question time



- Linkfire can quote for the ongoing ESM maintenance for 1 property, 10 or your whole portfolio – free of charge and with no obligation.
- We offer in training for managers both office and site based. If your team could do with a refresher or if you have new staff, we can arrange a session for you

For any of the above reach out to the team - sales@linkfire.com.au

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