

# Smoke Alarms

## New smoke alarm requirements for existing buildings from 1 May 2006

Advisory note • March 2006



### Introduction

To enhance safety and minimise loss-of-life in building fires, the NSW Parliament, in July last year, enacted the *Building Legislation Amendment (Smoke Alarms) Act 2005*. The Act allows regulations to be made to require smoke alarms be installed in existing buildings in which people sleep. Smoke alarms are already mandatory for all new buildings and in some instances when buildings are altered or their use changed.

From 1 May 2006, when the Environmental Planning and Assessment Amendment (Smoke Alarms) Regulation 2006 comes into effect, owners affected by the new laws will be responsible for ensuring smoke alarms are installed.

Most building fire fatalities occur while people are asleep. A smoke alarm is an effective early warning device designed to detect smoke and alert building occupants to the presence of a fire. Installed in the correct location, it increases the time available for safe escape.

In setting minimum standards for existing buildings, the Government has looked at balancing the need for safety with affordability, easy compliance and quick uptake. Owners can if they so choose install more sophisticated systems.

**Environmental Planning and Assessment  
Amendment (Smoke Alarms) Regulation 2006**

Gazetted 10 March 2006

### How the new Regulation applies

The new Regulation specifies which types of buildings will need smoke alarms installed, the types of alarms, where they are to be located, and other matters.

No action is needed if a building already has fully functioning smoke alarms or a smoke detection and alarm system installed that complies with a previous or current requirement (such as an approval or Fire Safety Order). Similarly if a person has installed alarms in a private dwelling (as specified below) before the commencement of the new Regulation, if they are working properly and correctly located, no action is required.

The new Regulation does not override any other legal requirements regarding the installation of smoke alarms and systems. For example, it does not override any Fire Safety Order (current or future) that may require higher standards to be met.

Similarly, as the new Regulation concerns existing buildings only, it does not override the Building Code of Australia (BCA), which regulates the design and construction of new buildings and building work (alterations and additions). The BCA sets out the requirements for smoke alarms or smoke detection and alarms systems for new construction.

Buildings or parts of buildings occupied by a public authority may also be exempted from the new requirements if the Minister responsible for the authority determines this by gazetted order.



## Types of buildings and types of smoke alarms

The type of smoke alarm to be installed depends on the type of building.

Type of building	Type of smoke alarms
<p><b>Private dwellings</b></p> <ul style="list-style-type: none"> <li>• Class 1a buildings (eg detached houses, terrace houses, town houses, villa units)</li> <li>• Class 2 buildings (eg apartments, home units, flats)</li> <li>• Class 4 parts of buildings (eg caretakers flats, single residences above shops)</li> <li>• Relocatable homes (eg manufactured homes and moveable dwellings, but not tents, campervans, caravans or the like)</li> </ul>	<p>Australian Standard AS 3786 compliant:</p> <ul style="list-style-type: none"> <li>• hard-wired to the mains electricity power supply (with battery backup), or</li> <li>• powered by a battery.</li> </ul> <p>(Building owner's choice)</p>
<p><b>Shared accommodation</b></p> <ul style="list-style-type: none"> <li>• Class 1b buildings (eg small boarding houses, guest houses, hostels; backpackers accommodation; bed and breakfast accommodation)</li> <li>• Class 3 buildings (eg large boarding houses, guest houses, hostels, backpacker accommodation; residential parts of hotels, motels, schools, health care buildings, detention centres; certain residential accommodation for the aged, children and people with disabilities)</li> <li>• Class 9a health care buildings (eg hospitals and nursing homes)</li> </ul>	<p>Australian Standard AS 3786 compliant, but must be:</p> <ul style="list-style-type: none"> <li>• hard-wired to the mains electricity power supply (with battery backup), or</li> <li>• powered by a non-removable 10-year long-life battery permanently connected to the smoke alarm.</li> </ul> <p>(Building owner's choice)</p>

**Note.** A full description of each of the above classes of building can be found in the Building Code of Australia (BCA). 'Health care building', 'nursing home' and 'relocatable home' are defined by the new Regulation.



### Private dwellings (Class 1a and 2 buildings, Class 4 parts of buildings, and relocatable homes)

Smoke alarms for private dwellings must comply with Australian Standard AS 3786–1993, *Smoke Alarms*. AS 3786 contains design and performance criteria for self-contained smoke alarms, including acceptable power sources. For private dwellings, smoke alarms can be powered by either the mains electricity supply or battery. The choice rests with the building owner. Smoke alarms powered by the mains electricity supply must however have a standby power source (battery) to energise the alarm if the mains electricity supply fails.

#### Exception

Some owners of private dwellings may have already installed smoke alarms that are not AS 3786 compliant. These alarms are considered acceptable, but only if they were installed prior to the commencement of the Regulation (1 May 2006), and only until they cease to function or are removed. This acceptance is conditional upon those smoke alarms being installed in locations that comply with the new Regulation. If they are not installed in the right locations they may have to be moved or additional alarms may have to be installed as set out in the new Regulation.

### Shared accommodation (Class 1b, 3 and 9a buildings)

Smoke alarms for shared accommodation buildings must comply with AS 3786–1993, *Smoke Alarms*. The new Regulation, however limits the power source options for smoke alarms in these types of premises. Smoke alarms in these buildings must be either hard-wired to the mains electricity supply or powered by a non-removable, 10-year long-life battery that is permanently connected to the smoke alarm.

More stringent requirements apply to smoke alarms in these buildings because they are more likely to accommodate persons not familiar with their surroundings or who would need assistance to escape in case of fire.

### Heat alarms

In any of the above types of buildings, where the use of an area is likely to result in a smoke alarm being inappropriately activated (eg in a kitchen), a heat alarm may be used in lieu of a smoke alarm.

### Alarms for the hearing impaired

The smoke alarms required by the new Regulation work by issuing an audible alarm. These alarms however may not be effective in alerting people with hearing impairments. A visual warning device such as a flashing strobe light, along with a vibration pad that can be placed

under the pillow, can be connected to some smoke detectors. People should contact their hearing-impaired association for details. Further information is available on the NSW Fire Brigades website at: [www.fire.nsw.gov.au](http://www.fire.nsw.gov.au).

### Where to locate smoke alarms

Where smoke alarms are to be located in a building, and the number required, depends on the building's use (classification), size and layout. The new Regulation sets out what is required, as explained below.

The general principle is that smoke alarms should be positioned to detect smoke **before** it reaches sleeping occupants. The sound emitted by the alarm is designed to wake occupants, giving them time to evacuate.

### Houses, villas etc. and relocatable homes

In Class 1a buildings and relocatable homes, smoke alarms must be installed on every storey.

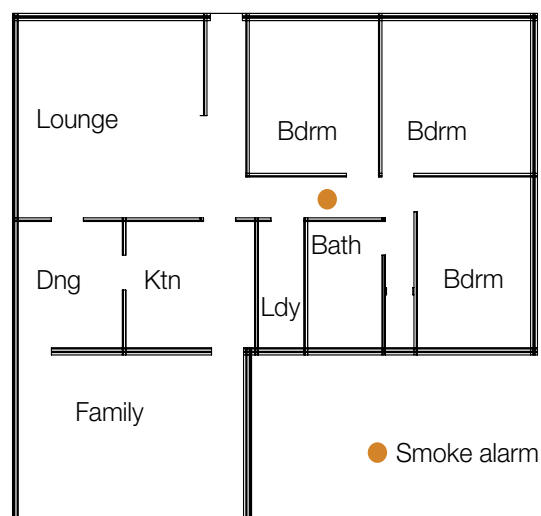
#### Storeys with bedrooms

In storeys containing bedrooms smoke alarms are to be located on or near the ceiling:

- in every corridor or hallway associated with a bedroom, or
- if there is no corridor or hallway, between the part of the building containing the bedroom and the remainder of the building or home.

Diagram 1 shows where to locate a smoke alarm in a dwelling where bedrooms are grouped together and connected to the living areas by a corridor or hallway.

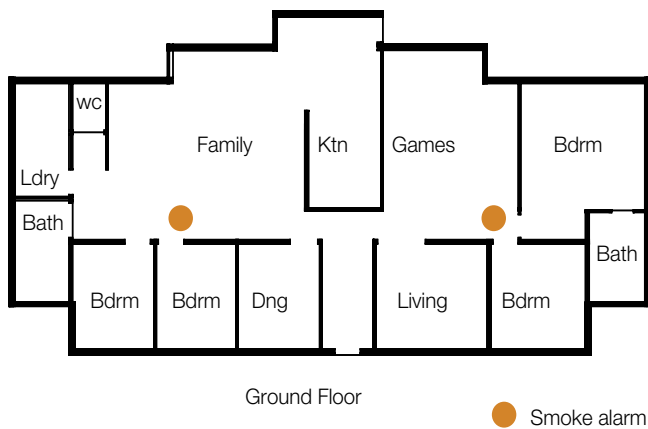
Diagram 1: Dwellings with bedrooms grouped together.



In those dwellings where the bedrooms are not grouped together or no connecting hallway exists, then smoke alarms should be located as shown in Diagram 2.



Diagram 2: Dwellings with separated sleeping areas



**Storeys with no bedrooms**

A smoke alarm must be installed in storeys not containing bedrooms. In these storeys a smoke alarm should be located in the path of travel people will most likely take to evacuate the building. This will ensure an alarm is sounded before smoke makes the escape route impassable. If the bedrooms are on the first floor, then an alarm should be positioned near the area of the interconnecting stair, as shown in Diagram 3 and 4.

Diagram 3: Two storey dwelling showing smoke alarms in the storey containing bedrooms (first floor) and the storey not containing bedrooms (ground floor)

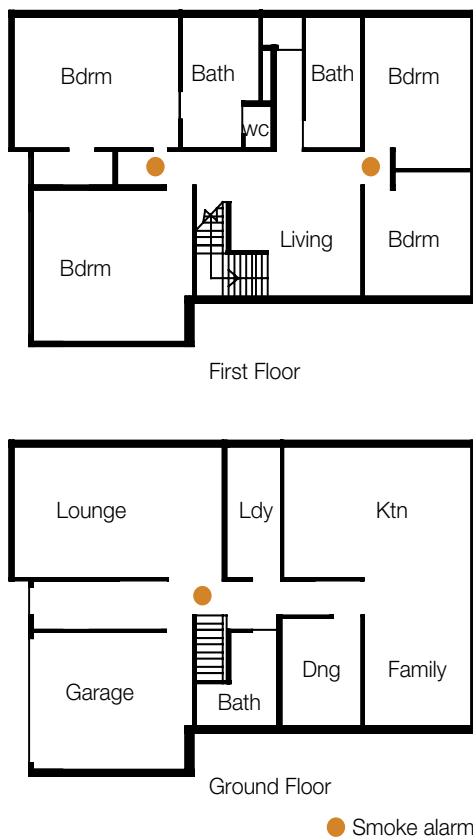
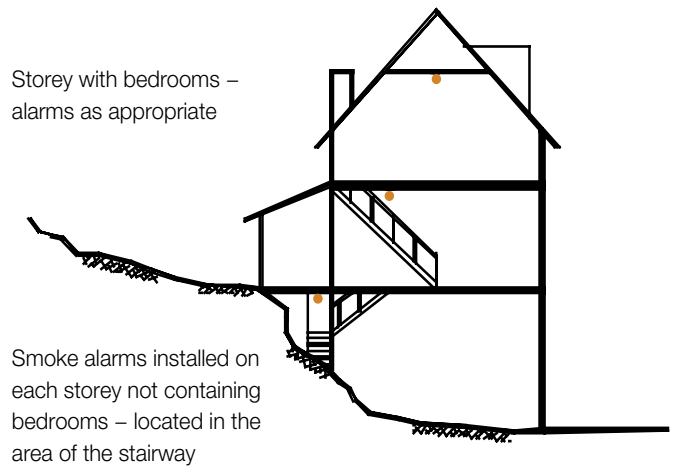


Diagram 4: Cross section through a dwelling showing smoke alarms in the storey containing bedrooms (top floor) and the storeys not containing bedrooms. Smoke alarms located within area of stairway



**Small boarding houses, guest houses, hostels, B&Bs etc.**

In Class 1b buildings, smoke alarms must be installed on every storey.

**Storeys with bedrooms**

In storeys containing bedrooms, smoke alarms must be installed on or near the ceiling in every:

- bedroom
- corridor or hallway associated with a bedroom, or, if there is no such corridor or hallway, between each part of the building containing a bedroom and the remainder of the building.

Diagram 5: Example for small boarding houses, guest houses, hostels, B&Bs etc.



**Storeys with no bedrooms**

A smoke alarm must be installed in storeys not containing bedrooms. In these storeys smoke alarms should be located in the path of travel people will most likely take to evacuate the building, similar to that for Class 1a buildings. See 'Houses, villas etc. and relocatable homes' above.



### Apartments, units and flats

Smoke alarms must be installed within each home unit or apartment in a Class 2 building. At this point in time, the Regulation does not require smoke alarms to be installed in common areas such as public hallways, corridors, lobbies and stairways. The focus of the Regulation for this type of building is on those parts of the building in which persons reside and sleep.

The requirements for the location of smoke alarms for dwellings in Class 2 buildings are the same as those for Class 1a buildings. See 'Houses, villas, and relocatable homes' above.

### Large boarding houses, guest houses, hostels, backpacker accommodation; residential parts of hotels, motels, schools, health care buildings, detention centres; certain accommodation for the aged, children and people with disabilities etc.

In a Class 3 building smoke alarms must be installed in each sole-occupancy unit (SOU). In addition, if the building is not protected with a functioning sprinkler system, smoke alarms must also be installed in each:

- habitable room not within a SOU
- public corridor and other internal public space.

**Note.** 'Sole-occupancy unit' as used in the new Regulation has the same meaning as in the Building Code of Australia.

### Smoke alarms in SOUs

Smoke alarms must be installed in every storey in the SOU.

#### Storeys with bedrooms

In storeys in the SOU that contain bedrooms, smoke alarms must be located on or near the ceilings:

- in every corridor or hallway associated with a bedroom, or
- if there is no corridor or hallway associated with a bedroom, between the part containing the bedroom and the rest of the unit.

#### Storeys with no bedrooms

A smoke alarm must be installed in storeys in the SOU not containing bedrooms. In these storeys smoke alarms should be located on or near the ceiling in the path of travel people will most likely take to evacuate the unit.

#### Smoke alarms in parts of the building not within a SOU

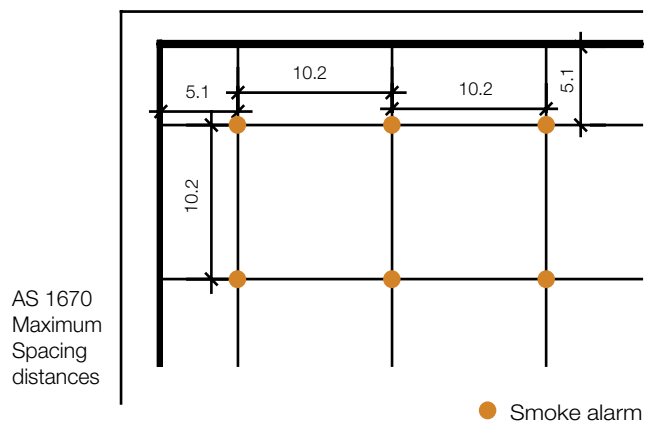
In Class 3 buildings not protected with a functioning sprinkler system the new Regulation also requires smoke alarms to be installed in:

- habitable rooms not within any SOU, for example common dining rooms, lounge rooms and recreation spaces, and common kitchens (see comments regarding heat alarms above)
- public corridors

- other internal public spaces including foyers, lobbies and the like.

The new Regulation requires that smoke alarms in these areas be located in accordance with the requirements of AS 1670.1–2004, *Fire detection, warning, control and intercom systems—System design, installation and commissioning—Part 1: Fire* as if the smoke alarms are smoke detectors. In general terms, in areas with flat ceilings, AS 1670.1 requires smoke alarms to be located not more than 5.1 metres from any wall and not more than 10.2 metres apart. (For a complete set of location requirements including those for all types of ceilings you need to refer to AS 1670.1.)

Diagram 6: Maximum spacing distances as set by AS 1670.1



### Caretaker flats and shop-top housing

The requirements for locating smoke alarms in Class 4 parts of buildings are the same as those for Class 1a buildings and relocatable homes (see above). The new Regulation, at this point in time, focuses on the dwelling only and does not require smoke alarms in any public stairway, hallway or corridor serving the Class 4 part of the building.

### Bedsits and other small dwellings, apartments and sole-occupancy units

Some small dwellings and units do not have distinct or separate bedrooms. They consist substantially of one room comprising sleeping and other facilities. For these types of dwellings and units, smoke alarms are to be located on or near the ceiling between the sleeping area and the rest of the dwelling or unit.

### Health care buildings

The new Regulation defines Class 9a health care buildings to include nursing homes and hospitals. In these type of buildings the Regulation requires smoke alarms to be installed in:

- each patient care area (bathrooms, ensuites and toilet areas excepted). (See definition of 'patient care area' in the new Regulation)



- each public corridor
- any other internal public space associated with a patient care area, eg foyers and lobbies.

**Note.** 'Patient care area' as used in the new Regulation has the same meaning as in the BCA, except that it does not include any bathroom, ensuite bathing area or toilet area.

Smoke alarms in these areas are required to be located in accordance with the requirements of AS 1670.1–2004, *Fire detection, warning, control and intercom systems—System design, installation and commissioning—Part 1: Fire* as if the smoke alarms are smoke detectors. (See comments above regarding location of smoke alarms in Class 3 buildings.)

## Installation

### Where to obtain a smoke alarm

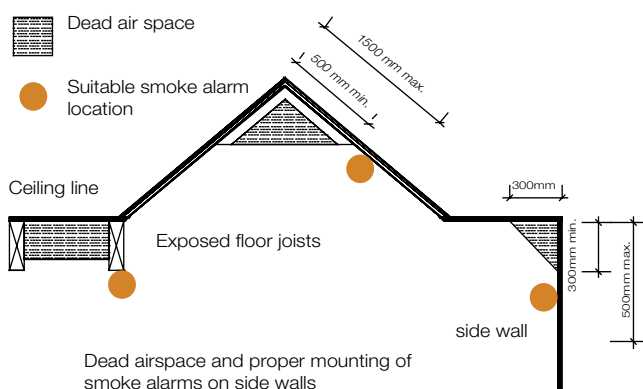
Smoke alarms are available at most hardware, home equipment and building supply stores, and a number of department stores.

### Installing the device

Most battery-powered smoke alarms can be easily installed by the home owner or a maintenance contractor and do not require professional installation. Hard-wired smoke alarms, however, will need to be installed by a licensed professional.

Smoke alarms must be installed on or near the ceiling. Special care is required to avoid 'dead air spaces'. A dead air space is an area in which trapped air will prevent smoke from reaching the alarm. This generally occurs at the apex of cathedral ceilings, the corner junction of walls and ceilings, or between exposed floor joists. If it is impractical to mount the smoke alarm on the ceiling, it may be located on the wall—as long as the smoke alarm is suitable for this application. In this case, the top of the smoke alarm should be between 300mm and 500mm from the ceiling. The distance from the apex of a cathedral ceiling to the top of the alarm should be between 500mm and 1500mm. (See Diagram 7).

Diagram 7: Proper mounting of smoke alarms



### Avoiding 'false' alerts

Smoke alarms are extremely sensitive and may detect smoke and moisture created by common household activities such as burnt toast or steam from a bathroom. To reduce the likelihood of false alarms, the smoke alarm should, wherever possible, not be located near cooking appliances or bathrooms. Alternatively the type of alarms used needs to be considered (see the NSW Fire Brigades website for further information).

Some types of smoke alarms may be provided with a method for switching off a false alarm. Other solutions include a simple time delay switch that deactivates the alarm for a period of time while the smoke clears, or opening a window to remove the contaminated air.

If false alarms persist, then the smoke alarm should be moved to a more suitable location.

### Approval to install a smoke alarm

No approval will be required (that is no development consent, complying development certificate or construction certificate) to install a smoke alarm or heat alarm. Also, the consent of an owners' corporation (within the meaning of the *Strata Schemes Management Act 1996*) is not required to install a smoke alarm or heat alarm in a dwelling unit or apartment. This is subject to the condition that if the installation of an alarm causes damage to any part of common property, the person who installs the alarm must repair the damage.

## Compliance

### Responsibility for ensuring smoke alarms are installed

The responsibility for ensuring functioning smoke alarms are installed in relocatable homes and the buildings and parts of buildings to which the Regulation applies rests with the owner of the home, building or part as relevant and as stated in the new Regulation for the respective building types.

In order to clarify responsibility where a Class 1a building is part of a strata scheme, the new Regulation defines this as the lot containing a dwelling.

### Timing

A legal obligation to have appropriately-installed smoke alarms does not arise until six months after the Regulation commences on 1 May 2006.

Also, a person is not liable for an offence under the new Regulation (other than the offence of removing or interfering with a smoke alarm or heat alarm) in respect or any act or omission that occurs within six months after the commencement of the new Regulation.



### Enforcement and penalties

The NSW Government intends to encourage people to comply with the new requirements through public education. It is not expected that regulatory authorities will have to play a significant enforcement role.

However, the new Regulation does include provisions for fines for failure to install smoke alarms after a six month compliance period. Also, from 1 May 2006, it will be an offence to interfere with or remove an existing smoke alarm, unless it is to repair, maintain or replace the alarm.

### Maintenance

The new Regulation does not specify how to maintain a smoke alarm, this may vary depending on the type of alarm. The Regulation however states that smoke alarms must be functioning and it is an offence to remove or interfere with the operation of a smoke alarm or heat alarm.

Also, smoke alarms and heat alarms are considered statutory fire safety measures under clause 166 of the Environmental Planning and Assessment Regulation 2000. Furthermore, smoke alarms installed in Class 1b, 2, 3, 4 and 9a buildings as required by the new Regulation must be added to the Fire Safety Schedule for the building, if one exists. The smoke alarms will then be subject to the ongoing maintenance and certification regime prescribed by Part 9 of the Environmental Planning and Assessment Regulation 2000 as for other essential fire safety measures.

To be effective, smoke alarms must be properly maintained. The alarm should be cleaned at least annually, by carefully vacuuming to remove dust particles that may affect the operation of the unit. It is important to read the manufacturer's installation and operation details prior to cleaning the alarms.

Smoke alarms should also be tested routinely to ensure they are still functioning, in accordance with manufacturer's instructions. The operation of most smoke alarms can be easily checked by depressing a button on the outside of the alarm. The battery in most smoke alarms will need replacing each year (lithium battery powered smoke alarms last longer). Smoke alarms should emit a warning sound when the battery needs replacement.

### Further information

#### Related regulatory changes

Changes to the following regulations are also being developed to support and complement the changes to the new Environmental Planning and Assessment Amendment (Smoke Alarm) Regulation: This includes the:

- Retirement Villages Regulation 2006
- Residential Parks Regulation 1999

- Residential Tenancies (Residential Premises) Regulation 1995.

These regulations cover residential tenancies (rental properties), residential parks and retirement villages. These changes will deal with issues such as the responsibility for smoke alarm batteries in rented premises and the recording of smoke alarms on inspection records. Further details will be provided by the Office of Fair Trading when the regulatory changes have been finalised.

Changes to the Conveyancing (Sale of Land) Regulation 2005 are also being made to require an owner of land on which there is a property that requires a smoke alarm, when selling the land, to disclose in the sale contract whether a smoke alarm is fitted.

Further details will be provided by the NSW Department of Lands when the regulatory changes have been finalised.

Consequential changes are also being made to the Local Government (Manufacture Home Estates, Caravan Parks, Camping Grounds and Moveable Dwellings) Regulation 2005. New relocatable homes will still have to be provided with smoke alarms that comply with that regulation.

#### Find out more

The Environmental Planning and Assessment Amendment (Smoke Alarms) Regulation 2006, which amends the Environmental Planning and Assessment Regulation 2000 is published in the NSW Government Gazette of 10 March 2006.

NSW legislation is also available online from the NSW Parliamentary Counsel Office's website at [www.legislation.nsw.gov.au](http://www.legislation.nsw.gov.au) (Browse A-Z In Force). This includes: the *Building Legislation Amendment (Smoke Alarms) Act 2005*, Environmental Planning and Assessment Amendment (Smoke Alarms) Regulation 2006, *Environmental Planning and Assessment Act 1979*, and Environmental Planning and Assessment Regulation 2000.

Copies of Australian Standards are available through Standards Australia at [www.standards.org.au](http://www.standards.org.au).

Further information on the new requirements for smoke alarms and how to comply is available from the NSW Department of Planning at [www.planning.nsw.gov.au](http://www.planning.nsw.gov.au) and the NSW Fire Brigades at [www.fire.nsw.gov.au](http://www.fire.nsw.gov.au).

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