Building Fire Safety (Domestic Smoke Alarms) Legislation Amendment Regulation 2016

Explanatory notes for SL 2016 No. 221

made under the

Building Act 1975
Fire and Emergency Services Act 1990

General Outline

Short title

Building Fire Safety (Domestic Smoke Alarms) Legislation Amendment Regulation 2016.

Authorising law

Section 261 of the *Building Act 1975*.
Sections 104S and 154E of the *Fire and Emergency Services Act 1990* (the Act).

Policy objectives and the reasons for them

The objective of the *Building Fire Safety (Domestic Smoke Alarms) Legislation Amendment Regulation 2016* is to improve personal safety in domestic dwellings by expanding the existing requirements for smoke alarm installation in dwellings. The amendments will enable residents to be more rapidly alerted to the presence of a fire. This is expected to reduce injuries and loss of life from house fires.

The amendments have the effect of requiring domestic smoke alarms to be photoelectric, powered by an enduring power source, interconnected and installed in every bedroom in addition to current locations required under the National Construction Code (i.e. between areas containing bedrooms and the rest of the dwelling, in any hallway servicing a bedroom, and on any other storey).

Evidence exists to suggest that each component of these revised smoke alarm provisions will work to reduce the risk of harm to residents in a house fire. The changes also support recommendations resulting from the Slacks Creek House Fire Inquest and the Commonwealth Senate Legal and Constitutional Affairs Committee inquiry into “The use of Smoke Alarms to Prevent Smoke and Fire Related Deaths”.

Achievement of policy objectives

Summary

The objectives of the *Building Fire Safety (Domestic Smoke Alarms) Legislation Amendment Regulation 2016* (the Regulation) are to:

1. mandate the use of photoelectric smoke alarms

2. require the interconnection of photoelectric smoke alarms

3. ensure the positioning of photoelectric smoke alarms is in compliance with Australian Standard 1670.6 – 1997

4. require photoelectric smoke alarms to have an enduring power source

5. clarify requirements for photoelectric smoke alarms in newly constructed dwellings

6. provide flexibility to allow for the easy adoption of future technology

Background

Photoelectric smoke alarms

The Regulation achieves its objective of improving personal safety in domestic dwellings by expanding the requirements regarding the installation of photoelectric smoke alarms in all dwellings thereby reducing the loss of life or injury.

Photoelectric smoke alarms trigger an alert when smoke restricts light reaching a sensor. This type of alarm reacts more quickly to smouldering fires which gives residents maximum time to evacuate safely. Photoelectric alarms are also less likely to produce false alarm activations which often result in residents disabling the alarms to avoid the nuisance of the false alarms. They are, as such, more likely to remain operational. This is expected to result in a greater number of working smoke alarms in homes. The provisions also restrict the installation of smoke alarms with a combination of ionisation and photoelectric sensors in meeting the minimum requirements, which would be just as likely to give false alarms. Such alarms would be permissible as additional smoke alarms in the home if desired.

Interconnection

Requiring the interconnection of smoke alarms in a home enables residents to be alerted to the presence of a fire from the sound emitting from the nearest smoke alarm, even when the fire is detected by a smoke alarm in another part of the house. This creates a higher level of safety for persons in a dwelling as it increases the chance of being alerted to a fire more rapidly and regardless of where they are in the house.

Positioning of smoke alarms

The Regulation also stipulates that smoke alarms will be placed in all bedrooms in addition to currently required locations. This will enable residents to be alerted to the presence of a fire even when asleep.

It outlines that a smoke alarm must be installed:

- In each bedroom;
- And for each storey with 1 or more bedrooms - in a hallway if bedrooms are connected by a hallway, and otherwise between the bedrooms and the rest of the dwelling; and
- In any other storey in the most likely path of travel to an exit.

These locations reflect the existing requirements of the National Construction Code.

The requirement that smoke alarms be installed in every bedroom of the dwelling will enable residents to be alerted to the presence of a fire even when asleep. Research has shown that in order to wake sleeping residents smoke alarms must produce at least 75 decibels of sound at the bedhead. The Australian Standard governing smoke alarm design (AS 3786) states that smoke alarms must produce at least 85 decibels three metres from the alarm. If an alarm positioned in the hallway activates, the sound level at the bed head could be as low as 36 decibels if the person sleeps with the door closed. This would not provide the necessary sound level to awaken residents. Installing smoke alarms in bedrooms is the most effective way of producing the necessary alert to wake a sleeping person.

The Regulation clarifies the requirements for the positioning of smoke alarms on each storey of the dwelling with no bedrooms. It provides that smoke alarms must be located in the most likely path of travel from a place in the storey to an exit to the building. This positioning represents best practice in smoke alarm installation and provides residents with the best early warning of the presence of a fire.

The Regulation also incorporates the recommended smoke alarm installation locations of AS 1670.6 – 1997, 'Fire detection, warning, control and intercom systems—System design, installation and commissioning: Smoke Alarms' into the Regulation. Incorporation of this Australian Standard was recommended by the Legal Affairs and Community Safety Committee after their inquest into the Bill. The location requirements listed in the Australian Standard provide more specific guidance to the exact positioning of smoke alarms in relation to structural features of a home than have previously been incorporated. The provisions are reproduced in the Regulation rather than making direct reference to the Australian Standard as the Standard is not generally freely available to the public.

Powering of smoke alarms

The Regulation will also provide the permissible means of powering a smoke alarm. The provision will allow for smoke alarms to be either powered by hardwiring to the home electrical system or being powered by a battery with a ten year life that is intended to not be removed or replaced. The requirement that the battery not be

removable ensures that residents do not interfere with the working of the unit by removing the battery.

It is intended that at the end of the ten year battery life the whole unit would be disposed of and a new one installed. Providing for an ongoing power source will further support the policy aims by providing a greater assurance that home smoke alarms will remain functional with the maintenance of an ongoing power source.

Ensuring smoke alarms have an ongoing power source removes reliance on owners or occupiers to regularly replace batteries to keep smoke alarms operational and is intended to result in a greater number of homes with functioning smoke alarms.

Construction of new buildings

Smoke alarm requirements relating to the construction of a domestic dwelling will be contained within the amended *Building Regulation 2006*.

These smoke alarms must: comply with AS 3786-2014, contain a photoelectric sensor; and not also contain an ionisation sensor, be hardwired to the domestic dwelling's electricity supply; and be interconnected to every other smoke alarm installed in the dwelling.

The requirement that smoke alarms be hardwired is consistent with that contained in the National Construction Code and has applied to newly constructed dwellings since 1997.

Future development

Amending the Regulation rather than the primary legislation to include the more technical aspects of smoke alarm requirements and installation maintains the potential for innovation and adaptation in smoke alarm technology provided it is at least as effective as photoelectric smoke alarms.

Consistency with policy objectives of authorising law

The Regulation is consistent with the main objectives of the *Building Act 1975* and the *Fire and Emergency Services Act 1990* by providing for the prevention of, and responses to, fires and other emergency incidents.

Inconsistency with policy objectives of other legislation

No.
The Regulation is consistent with the policy objectives of other legislation.

Benefits and costs of implementation

The amendments will decrease the risk of harm from house fires. It will support Queensland Fire and Emergency Services recommendations in the use of smoke alarms in homes.

Costs will be incurred in making Government owned housing compliant with the new provisions. These costs have been budgeted for.

Costs will also be incurred to homeowners in making houses compliant with the provisions. Extended timeframes for compliance will assist households in meeting these costs.

A public consumer protection and awareness campaign will be conducted in relation to the amendments of the Act and Regulation. The cost of this campaign will be met from the budget of Queensland Fire and Emergency Services.

Consistency with fundamental legislative principles

The amendment Regulation has been drafted with regard to fundamental legislative principles as defined in section 4 of the *Legislative Standards Act 1992.*

The use of subordinate legislation is required to allow for responsiveness to innovation in smoke alarm technology and best practice.

Consultation

Consultation regarding the amendments has been undertaken with the Department of the Premier and Cabinet, Queensland Treasury, Department of Communities, Child Safety and Disabilities Services, Department of Housing and Public Works, Department of Justice and Attorney-General and the Office of Best Practice Regulation.