Fire Safety Standard Guidelines

Application of the Fire Safety Standard

Queensland Government
Department of **Local Government and Planning**
Department of **Emergency Services**

Purpose

This guideline provides information on how to apply the Fire Safety Standard to budget accommodation buildings, which is intended to assist building owners, local government officers, fire officers, consultants and designers, in bringing budget accommodation buildings into compliance with the Fire Safety Standard. It should be read in conjunction with the legislation, Fire Safety Standard and the other guidelines listed at the back of this guideline.

Introduction

On 1 July 2002, new laws (legislation) introduced by the Queensland Government took effect to ensure the safe evacuation of occupants if a fire occurs in a budget accommodation building. The new legislation requires all budget accommodation buildings built, approved, or for which an application was made prior to 1 January 1992, when the Building Code of Australia was introduced into Queensland to comply with the prescribed Fire Safety Standard. The legislation requires the installation of early warning and emergency lighting by 30 June 2003 and a further two years is available to achieve compliance with the other provisions of the Standard.

Owners and occupiers of all existing budget accommodation buildings are also required to prepare and implement a Fire Safety Management Plan by 30 June 2003. For further information on what constitutes a budget accommodation building, refer to the guideline on "Budget Accommodation Buildings".

The main purpose of this guideline is to assist owners and local councils when assessing budget accommodation buildings for compliance with the new Fire Safety Standard. It will enable them to better understand the structure and application of the Standard and its different provisions. Owners should first refer to the guideline on "Budget Accommodation Buildings" to determine whether their building is defined as a budget accommodation building, followed by the guideline on "How to comply with the Fire Safety Standard" to determine which provisions of the Standard apply to their building.

Structure of this Guideline

This guideline is in two parts. Part 1 explains how the Fire Safety Standard is structured and what a performance-based code means for owners when applying the Fire Safety Standard to budget accommodation buildings. Part 2 explains the Fire Safety Provisions in detail. It is important for owners to familiarise themselves with the information in Part 1 before reading Part 2 of the guideline.

This guideline provides information on the application of each provision in the Standard by using examples of acceptable solutions and other possible alternative solutions.

Owners should be aware that the installation of any fire safety features or construction work must be carried out by a contractor licences by the Queensland Building Services Authority (BSA) or by the licenced electrician, where necessary.

Part 1

The Fire Safety Standard

New building codes, such as the Fire Safety Standard, is to be drafted as performance-based codes which allow for many solutions to the outcomes sought by that code. This allows advances in technology and research. It also enables for a better understanding and, in some cases, new approaches to fire safety. Building owners should also be aware that each building is unique and one solution may not satisfy all buildings.

The Standard facilitates the objectives of fire safety by prescribing outcomes as performance criteria. These performance criteria allow for any alternative material, design, method of assembly, procedure and similar, not mentioned in an acceptable solution.

Whilst innovation is allowed, all buildings must still satisfy the performance criteria in order to comply with the Fire Safety Standard. This can be achieved in a number of ways:

1. complying with the minimum requirements set out in the Acceptable Solutions of this Standard; or
2. demonstrating compliance with the performance criteria of the Standard via an alternative solution; or
3. any combination of the above.

If a building complies with the acceptable solutions, the building owner needs to take no further action apart from ongoing maintenance. These acceptable solutions are often referred to as 'deemed to satisfy'.

If, however, the building does not achieve the acceptable solution, building owners can either undertake additional work to achieve compliance with the acceptable solution or determine if they can comply with the performance criteria by using an alternative solution.

The performance criteria set a minimum outcome, which an alternative solution must achieve. However, when an alternative solution is used the building owner must be able to demonstrate how the performance criterion is met. Any alternative solution must be submitted to local government for approval.

Building owners should also be aware that any proposed solution may have an impact on other performance criteria. Owners of buildings are therefore able to satisfy the code in a number of ways.

How can alternative solutions be applied to a budget accommodation building?

The following describes a possible solution for an existing budget accommodation building, which accommodates non-itinerant people with a disability. It would be assessed to see if it complies with the exit distance provisions in the Fire Safety Standard. The required solution is contained in acceptable solution A4 (a) and Schedule 3.

The building being considered has the following features:

- type A construction in accordance with the BCA (e.g. masonry walls and concrete floor);
- accommodates eight people with a disability, and there is only one supervisor at night;
- has a maximum exit travel distance of 14m; and
- has no self-closing mechanism on the bedroom doors.

With a Level of Supervision ratio of 1:8, this building does not comply with the exit distances contained in Schedule 3. The building owner could choose to address this non-compliance by investigating to see if it is possible to formulate an alternative solution, which will satisfy the performance criteria P4 of the Standard.

For example, the building owner might have the following additional information about the building and the occupants:

- all occupants have a mild intellectual disability and do not require physical assistance to evacuate the building; and
- the average stay of occupants is eight years, and it can be demonstrated that the occupants are highly familiar with their surrounding and the exit routes out of the building; and
- all supervisory staff are trained in safe evacuation procedures, have attended a course in emergency response procedures, and have attained a Level 4 Certificate; and
- monthly evacuation drill records over the past six months consistently demonstrate that five of the occupants (the same five) react to smoke alarms and evacuate the building unassisted, i.e. without any form of direction, to the assembly point within a maximum time of three minutes; and
- evacuation drills involve a scenario where the "fire" is located in a particular bedroom and staff follow procedures to ensure that the applicable bedroom door is closed after evacuating the occupant from the room; and
- Queensland Fire and Rescue Service (QFRS) have attended two evacuation drills and can verify the evacuation results.

The building owner could then determine that if five of the occupants evacuate the building without assistance, only three of the occupants would require assistance in an emergency situation. Therefore, the Level of Supervision Ratio is effectively 1:3. The building owner could then decide to relocate the three occupants who require assistance, next to each other and closest to an exit. The maximum exit travel distance for these occupants would now be within 8m and comply with the exit distance for the supervision ratio of 1:3.

With the above information, the building owner could formulate the following alternative solution:

- The five occupants who can evacuate the building unaided are able to use the same exit travel distance as those without a disability. Therefore, the maximum exit travel distance of 14m for those people is well within the limit of 60m for a Type A Construction building (Schedule 4); and

- The building owner has a management procedure in the Fire Safety Management Plan, which requires staff to close all doors near the fire after evacuating the occupants from that area. This procedure has been carried out in all fire drills and this has been verified by the QFRS. Therefore, the building could be treated as one that has self-closing door mechanisms installed and hence the allowable maximum exit travel distance for the three occupants requiring assistance is 15m (Schedule 3). The actual exit travel distance of 8m is within the allowable 15m.

The building owner could then lodge a development application with the local council proposing the above alternative solution, together with the Fire Safety Management Plan (FSMP). The owner must also submit the alternative to the QFRS for its advice on the alternative management plan.

The council's building certifier may decide to approve the alternative solution and issue a certificate of classification with the conditions proposed in the alternative solution on the use of the building.

If any of the circumstances change, such as another person is accommodated or one of the occupant's disabilities worsens, the building owner will need to request a new certificate of classification in writing, from the local council.

As the council's building certifier has approved an alternative solution, which involves a management procedure, the council will also inspect this building annually to ensure that the management procedure is still being implemented and that all of the conditions of the development approval are being complied with.

Installation by Licenced Contractors

Owners should be aware that the installation of any fire safety features or construction work must be carried out by a contractor licences by the Queensland Building Services Authority (BSA) or by the licenced electrician, where necessary.

Referral Agency

The Queensland Fire and Rescue Service (QFRS) is an advice agency for owners of buildings which contain or require special fire services, or where an alternative solution includes a Fire Safety Management procedure as a condition of use and occupation of the building (refer to the "Guideline on Fire Safety Management Plans"). Special fire services are defined under the *Standard Building Regulation 1993* and include the installation of hydrants and sprinkler systems; emergency warning and communication systems; smoke exhaust systems; fire detection and alarm systems; as well as a number of other services.

However, interconnected smoke alarms for budget accommodation buildings built, approved, or for which an application was made before 1 January 1992, are not considered to be a special fire service for budget accommodation buildings.

Before any development application that requires the above services can be decided, the application must be referred to the QFRS for advice. The QFRS has 15 business days to respond to this request.

Part 2

Fire Safety Provisions

The Fire Safety Standard contains a number of fire safety provisions (performance criteria P1 - P12), which introduce the principal elements and systems that will ensure the safe evacuation of occupants.

In the event of fire, safe evacuation is critically dependent on the correct application and maintenance of each fire safety element and system.

The following information is designed to guide owners and local government building certifiers through each provision, and provide examples about carrying out work to comply with the acceptable solutions of the Fire Safety Standard. Some examples of alternative solutions designed to satisfy the performance criteria are also provided.

Provisions of the Fire Safety Standard

Provision P1 - Early Warning Systems (within one year)

The Early Warning Systems, e.g. smoke alarms, are designed to serve a dual purpose, i.e. they must detect the presence of smoke and sound an alarm to alert and warn the building occupants, and in some cases the Queensland Fire and Rescue Service.

The Standard sets out the type of early warning system and its location depending on the building's height, and the type of materials used in its construction. Building owners must therefore assess their building to determine the correct type of early warning system for their building.

For example, the following buildings will require the installation of smoke alarms:

- buildings which are constructed entirely of timber (Type C construction) or have elements of timber in either the external or internal perimeter walls; and
- buildings which have internal walls or floors constructed from timber (Type B construction) and are two storeys or less in height; or
- buildings constructed entirely of masonry or concrete (i.e. Type A construction) and are three storeys or less in height.

All smoke alarms must be connected to 240 volt mains supply. If a 240 volt mains supply is not available, the building owner may install smoke alarms that are powered by a long life tamper-proof lithium battery.

It is critical when installing the smoke alarms that they are correctly located throughout the building, i.e. installed in each bedroom, enclosed corridors or hallways and in other common area such as a lounge or foyer, and located at a maximum distance of 5.1m between each alarm and interconnected to ensure the audible alarm can be heard in each bedroom should a fire occur on another storey or outside the bedroom.

Note: All smoke alarms must be installed in accordance with AS 3786.

For buildings that have been assessed as Type B or C construction and are over two storeys, or Type A construction and are over three storeys in height, a more sophisticated smoke detection system known as AS 1670 system will be required.

For further information on the correct location of smoke alarms and smoke detection systems and details on AS 3786 and AS 1670, refer to the guideline "Smoke Alarms and Emergency Lighting".

Where a building owner has assessed their building and determined that compliance with the acceptable solution requires the installation of smoke alarms complying with AS 3786, this work is self-assessable, which means the building owner does not require a building permit from the local council to carry out this work. The owner must, however, employ licensed electrician or contractor to install such systems.

Refer to the guideline "Smoke Alarms and Emergency Lighting" which explains who are licensed contractors for this work and where the smoke alarms are to be located.

Using an alternative solution:

If building owners decide to use an alternative solution to satisfy the performance criteria, and/or the work includes reliance on fire safety management procedures, then this work will require a development application to Council and a referral to the Queensland Fire and Rescue Service to provide advice on the proposed procedures and the Fire Safety Management Plan (refer to the guidelines on the "Development Application Process").

A building may currently have interconnected smoke alarms at 6m centres in an enclosed hallway associated with a common area. The building owner may choose to demonstrate that the hallway configuration is such that alarms will continue to be sufficiently audible in all bedrooms and areas of the building.

Under these circumstances, a fire safety management procedure may nominate that no works are undertaken which may compromise the solution.

Provision P2 - Emergency Lighting (within one year)

Artificial lighting is often one of the first things to fail during a building emergency. This makes it difficult for occupants to evacuate the building. Therefore, it is important for the building to contain a lighting system to ensure that evacuation routes and exits are identifiable.

By providing emergency lighting, this may minimize the risk of panic and assist in the orderly and safe evacuation of the building.

The type of emergency lighting required for a budget accommodation building is determined by the floor area size of the building. Building owners must therefore measure the total floor area under roof from wall to wall, including the floor area on each storey. However, areas used for housing vehicles are excluded in these calculations (refer to the definition of "*Floor Area*" in the Fire Safety Standard.

Once the building owners have determined the total floor area, they can then use the two options available for buildings 300m^2 or smaller, or the two options for building which are greater than 300m^2. The available options are as follows:

Building 300 m² or smaller

Options:

1. Install smoke alarms which incorporates a light within the alarm unit; (Note: These alarms are currently not available in Australia as a 240 volt alarm); or

2. Connect the smoke alarms with the normal lighting using a relay switch, which turns on the normal lighting by the activation of a smoke alarm.

Building greater than 300 m²

Options:

1. Use existing illuminated exit signs, which have a white opaque cover and words 'Exit' in green lettering, as part of the buildings emergency lighting. Where these signs are further than 12m apart, the emergency lighting must be supplemented by the normal lighting, and that lighting must be activated by the installed smoke alarms; or
2. Use a dedicated system of emergency lighting where emergency lighting units are located in accordance with A2 (b)(ii) of the Fire Safety Standard.

Once a building owner has determined that compliance with the acceptable solution requires the installation of emergency lighting, the work is self-assessable, and does not require a building permit for building works from the relevant council. The owner must, however, employ a licensed electrician to install such systems.

Building owners should reference the guideline "Smoke Alarms and Emergency Lighting" which explains who is a licensed electrician or contractor. This guideline also provides other detailed information on emergency lighting.

Using an alternative solution:

A building may currently have emergency lighting that complies in all respects, except that the 'Exit' sign is white on a green background. The building owner could demonstrate that the overall level of luminance is sufficient to provide a safe evacuation path for residents. Under these circumstances, a fire safety management procedure may include provisions in respect of future replacement, and ensure that levels of luminance are maintained.

Provision P3 - Occupant Density

In an emergency, the ability for occupants to quickly evacuate a bedroom depends on the number of occupants and clear passage to the door. It is also important where assistance is required to evacuate or rescue people.

Therefore, building owners are required to ensure that access to and within bedrooms is maintained appropriate to the occupants and that the occupant density rates are not exceeded.

Calculating occupant density

The following two criteria must be met when calculating how many people can be accommodated in each bedroom of a budget accommodation building.

Criteria one:

Determining how many people can be accommodated in any bedroom depends on the size of the room. Building owners must therefore measure each bedroom. The measuring of each room will involve the following process:

- Measuring the width and breath of the room, and multiplying those results together to gain the floor area in square metres (m^2).

  For example, using the room shown in Figure 1, where the dimensions are 2.7 x 2.7 metres, the total floor area would be 7.3 m^2. This figure must then be divided by 2.5 to determine the number of people allowed in the bedroom. In this case, it is 2.9; therefore, a maximum of 2 people can be accommodated.

Criteria two:

Determining how many people can be accommodated in a bedroom depends on maintaining a 900mm clear path of exit width at all times within the bedroom. This means baggage, furniture or other items cannot be placed or stored within that space.

Figure 1 provides a typical example of a small bedroom that would need to be at least 7.3m^2 or larger to accommodate two occupants when considering the room is taken up by two single beds and an area set aside, such as a wardrobe, to store the occupants belonging.

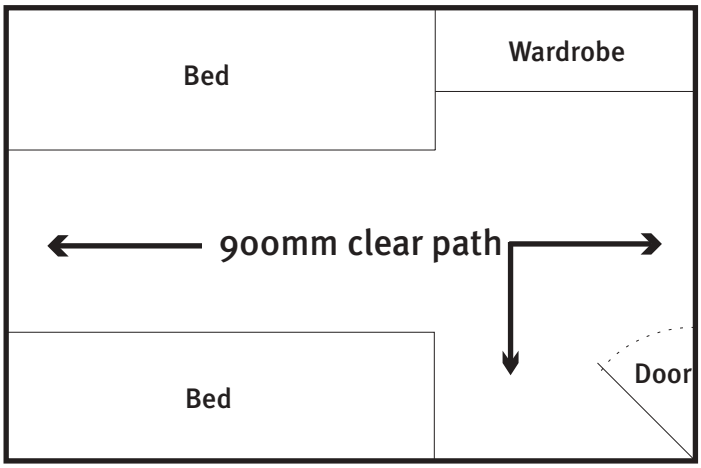


Figure 1 - Bedroom

Where a building owner has assessed their building and determined that compliance with the acceptable solution merely requires the movement of furniture or a reduction in the number of occupants, this does not require any approval. However, where building work alters the structural adequacy of the building or involves other fire safety systems, then such work may require a building permit for building works from the relevant Council.

If a building owner decides to maintain a higher occupant density and use an alternative solution to satisfy the performance criteria, then this will require a development application to Council and referral to the Queensland Fire and Rescue Service.

Provision P4 - Travel Distance

In the event of fire, the greater the distance occupants have to travel to reach an exit, the longer they will be exposed to the dangerous effects of the fire. The number and type of occupants can also affect evacuation times. People who are asleep take longer to react to emergencies. The mobility and other characteristics of the occupants may also directly affect the amount of time it will take to evacuate.

Exit travel distances for able-bodied occupants

Owners of budget accommodation buildings must carry out physical measurements in order to ensure exit travel distances are not exceeded. The methods in which to correctly calculate the maximum allowable exit distances are listed below:

Measuring exit travel distances:

The Fire Safety Standard stipulates in Schedule 3 the maximum distance an occupant can travel through a budget accommodation building that is larger than 300 m^2, to access to the final exit. These distances are:

- 30m in a building of Type B or C construction;
- 60m in a building of Type A construction; and
- 60m in building of Type A, B or C construction with a sprinkler system.

The Standard also stipulates certain travel distances for budget accommodation buildings of Type B or C construction where non fire isolated stairs must be used to escape the building. These distances are:

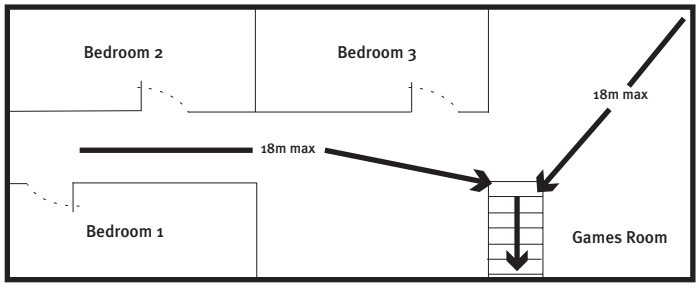
- 18m from any point on the floor (not including the space inside a bedroom) to the start of the stairs; and
- 15m from bottom of the stairs to the final exit to the outside of the building.

When calculating the above exit distances, the furtherest and most disadvantaged points on a floor to the start of any stairs used as an exit must be measured. This procedure must be repeated for each storey, and will include entertainment areas, storerooms, kitchens, etc. However, the space inside a bedroom is not included (see Figures 2 and 3).

Building owners should be aware that where a measured distance from the most disadvantaged point on a floor of any storey to the start of the stairs is 18m, and the measured distance from the bottom of that stairs to the final exit is 15m, the total of 33m will then exceed the maximum allowable distance by 3m and by the horizontal distance travelled down the stairs.

Therefore, the total combined maximum travel distance to the start of the stairs must be measured, plus the horizontal distance down the stairs, plus the distance from the bottom of the stairs to the final exit out of the building. The total sum of these distances cannot exceed 30m.

Where measured travel distances exceed 30m, the building owner must install an additional exit or investigate and provide an alternative solution, which satisfies the performance criteria P4. This will require a development application to be made to the relevant Council, and if an alternative solution includes a management procedure, that procedure along with the building's Fire Safety Management Plan, must be referred to the Queensland Fire and Rescue Service.



Note: Distance down the stairs must be measured in a horizontal plan

Figure 2 - First floor

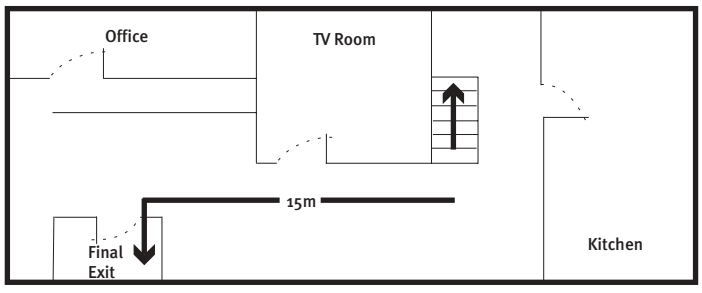


Figure 3 - Ground floor

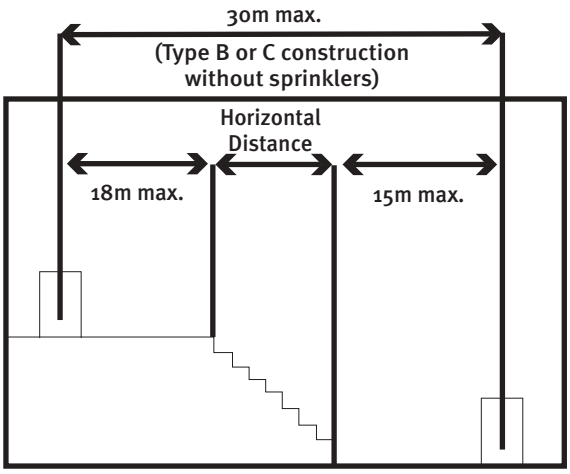


Figure 4 - cross section through floor

Exit travel distances for occupants with a disability

The Standard identifies that where the building accommodates non-itinerant people with a disability, building owners must provide a suitable level of assistance. Travel distances to exits are dependent upon the level of assistance available to provide for safe evacuation.

Where a building owner has assessed their building and determined that compliance with the acceptable solution requires the installation of self-closing door mechanisms, the owner should also check whether the doors are close fitting with the doorframe. Where these doors are not close fitting they should be fitted with smoke seals as an additional precaution against the migration of smoke. A smoke seal has its own self adhesive tape and can be easily applied to the doorframe. Smoke seals are available from selected hardware stores.

This work is self-assessable and does not require a building permit for building works from the relevant Council. The owner must, however, be aware that Australian Standards apply and the installation of such items must comply with those standards.

Alternatively, a building owner may have assessed their building and determined that an additional exit is required. This would be defined as building work if the structure is affected and will therefore require a building application for Building Work to be lodged with the relevant Council.

Using an alternative solution:

If a building owner decides to use an alternative solution to satisfy the performance criteria, and/or the work includes reliance on fire safety management procedures, then this work will require a development application to Council and a referral to the Queensland Fire and Rescue Service to provide advice on the proposed procedures and the Fire Safety Management Plan.

A building owner may currently have a level of supervision ratio that marginally exceeds that allowable. The building owner may seek to prove that the type of disability that is catered for does not accord with the level of supervision required and that safe evacuation is adequately provided for all residents.

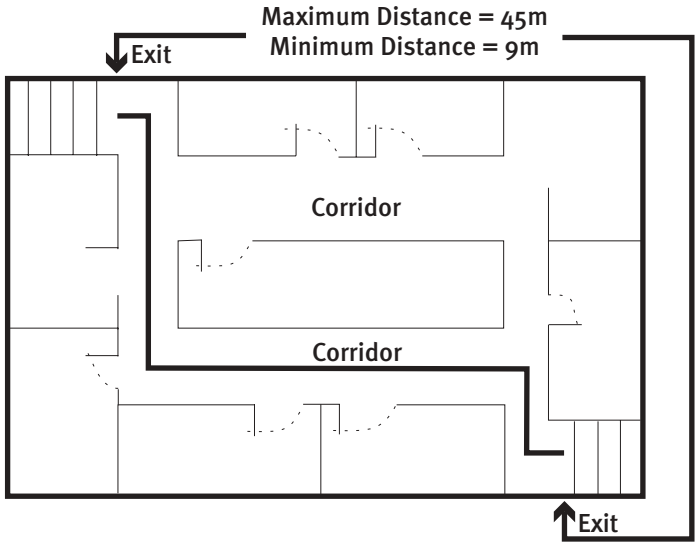
Under these circumstances, a fire safety management procedure may include provisions in respect of the type of individuals accommodated and ensuring that appropriate supervision is provided as well as ensuring that paths of travel to an exit are maintained.

Provision P5 - Emergency Escape

Emergency escape should allow occupants to evacuate safely. The location and number of exits required in a building are affected by many factors such as the number of occupants, their mobility and distance they need to travel to reach safety. The higher the building the less options occupants have to escape. The function or use of the building will have an effect on the severity of any fire and smoke spread.

Location and dimensions of exits

Owners must assess their building and ensure exits are correctly located and in accordance with the Fire Safety Standard. This means designated exits should be positioned no closer than 9m apart, or further apart than 45m, or converge to within 6m i.e. move no closer than 6m to each other, in any location throughout the building (see figures 5 and 6).



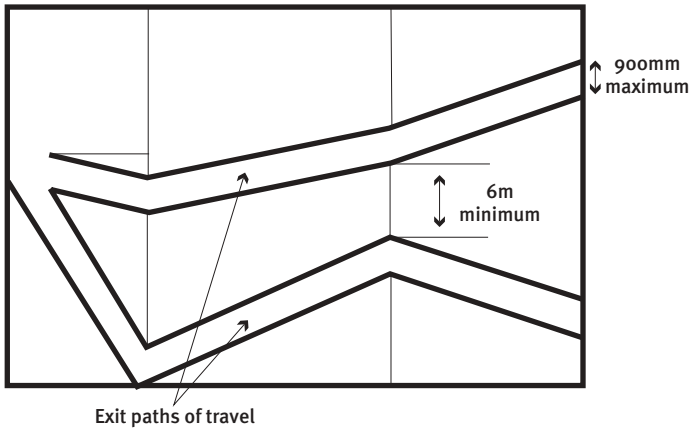


Figure 6 - Converging exits

In addition, building owners must ensure that the width of the exit paths throughout the building do not reduce below a measured width of 900mm nominal, i.e. when the corridor or the like is used as a path of travel to an exit, then the width of that corridor must be measured from wall to wall and cannot be less then 900mm in width.

However, in some cases, the wall lining may use up approximately 20mm of that nominal dimension, which reduces the 900mm to 880mm. In those cases, the dimension is accepted as 900mm, hence the word "nominal" is used, and the travel width will comply with the Standard.

Building owners must also ensure that other exit dimensions are also measured and maintained, and that unobstructed height along any exit travel path cannot reduce below 2000mm except when occupants must travel through a doorway. Where doorways are encountered, the frame height may be reduced to 1980mm.

Building owners must undertake the following procedure to ensue that the correct height in each case is obtained.

- For each corridor, hallway or the like, which forms part of a travel path to an exit, a measurement is taken by calculating the horizontal distance from the floor level up the wall through a straight vertical line to the ceiling above, and this distance should not less than 2000mm.
- Every doorway that opens up onto an external stairs that is used as an exit must have a landing, and the landing must be not less than 750mm long. Building owners must measure this distance from the bottom of the outside of the door and out from the door at a 90° right angle (see Figure 7).

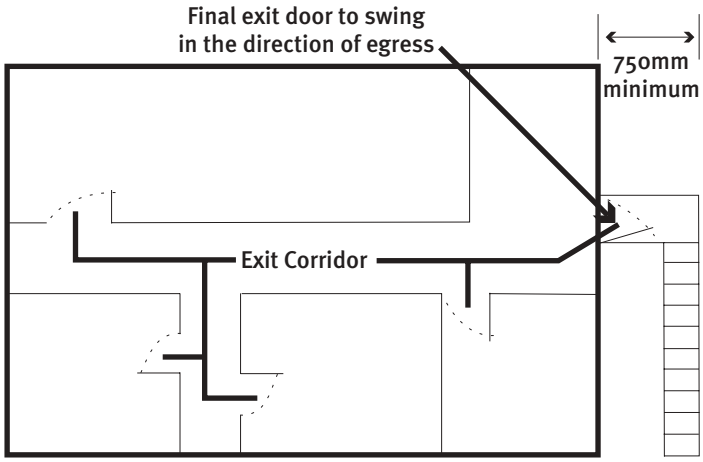


Figure 7 - Dimensions of landings

Owners must also check whether the correct door handles are fitted to all doors, which occupants must pass through whilst travelling to an exit. These doors must readily open without having to use a key, from the side facing the person seeking egress to escape from the building.

Where a building owner has assessed their building and determined that compliance with the acceptable solution requires the installation of additional external exits, altering doorways, corridors, passageways, landing or the like, this work is assessable building work and requires a building permit from the relevant Council.

Alterations that only require an exit door to be re-hung to change its direction for swing, or the installation of different door handles or hardware, are considered minor work, which is self-assessable and does not require a building permit.

Using an alternative solution:

If building owners decide to use an alternative solution to satisfy the performance criteria, and/or the work includes reliance on fire safety management procedures, then this work will require a development application to Council and a referral to the Queensland Fire and Rescue Service to provide advice on proposed procedures and the Fire Safety Management Plan.

A building may currently have particular security needs for its occupants. A building owner may choose to argue that compliance with current Building Code of Australia requirements, in particular the use of management procedures to unlock doors in an emergency as identified in Part D2.21(c)(ii), would provide for an equivalent level of fire safety.

Under these circumstances, a fire safety management procedure may include ensuring adequate training and supervision is in place.

Provision P6 - Protection of Exit Paths

It is important to ensure that the exit paths have sufficient protection where the distance travelled is substantial. They may be required to be separated from openings where fire may affect the evacuation path. The number of stories and fire safety systems may also determine the protection required.

Where a building owner has assessed their building and determined that compliance with the acceptable solution requires an existing stairway to be protected from a window, and if infill brickwork is all that is required, and light or ventilation to the room is not affected, this is self-assessable work and therefore does not require a building permit from the relevant Council.

The owner should, however, engage a contractor who holds a current licence with the Queensland Building Service Authority (QBSA) to undertake this work. The installation of a new fire isolated stairway or sprinkler system is considered building work and would require a building permit from the relevant local Council, and a QBSA licensed contractor to carry out this work.

Using an alternative solution:

If building owners decide to use an alternative solution to satisfy the performance criteria, and/or the work includes reliance on Fire Safety Management procedures, then this work will require a development application to Council and a referral to the Queensland fire and rescue service to provide advice on proposed procedures and the Fire Safety Management Plan

A building may currently have solid core doors installed in a fire-isolated stairway. The building owner may seek to demonstrate that these doors will provide an adequate level of fire resistance for the period of time necessary for occupants to evacuate safely.

Under these circumstances, a fire safety management procedure could include a directive that the doors remain closed.

Provision P7 - Exit Signs

Exit signs are necessary to facilitate safe evacuation, avoiding the occupants out of the building by the most direct and unobstructed route in the shortest possible time. Exit signs or other means of identification must therefore be provided to identify the location of exits, be clearly visible to occupants, and continue to operate in the event of a power failure for sufficient time for occupants to safely evacuate.

The Fire Safety Standard stipulates two applications for exit signs - those used to serve a dual purpose as emergency lighting and exit direction; and those used solely for exit direction.

In those circumstances where a building owner has assessed their building and determined they have the correct type of exit sign for use as emergency lighting (i.e. a white cover and green lettering), the owner will only be required to ensure the continued maintenance of those exit signs in accordance with AS 2293.2,which must be carried out by a QBSA licensed contractor.

However, where a building owner has assessed their building to be over 300m^2 and decided that the building requires the new installation of exit signs, then that installation must be in accordance with AS 2293.1 and AS 2293.2, and installed by a QBSA licensed contractor. Both the maintenance and installation of exit signs is self-assessable work and does not require a building permit from the Council.

Before initiating this work to be carried out, building owners should refer to the guideline “Smoke Alarms and Emergency Lighting” which explains who are QBSA licensed contractors and provides further details on exit signage.

Using an alternative solution:

If building owners decide to use an alternative solution to satisfy the performance criteria, and/or the work includes reliance on fire safety management procedures, then this work will require a development application to Council and a referral to the Queensland Fire and Rescue Service to provide advice on proposed procedures and the Fire Safety Management Plan

A building may currently have non-illuminated exit signs located correctly, and the existing emergency lighting does not illuminate the signs in strict accordance with the Standard. The building owner may seek to demonstrate that other fire safety systems in place, in combination with shorter exit distances and passive fire protection, will continue to allow for safe evacuation of occupants.

Under these circumstances, a fire safety management procedure may include that the combination of circumstances must remain.

Provision P8 - Portable Fire Extinguishers

This equipment allows occupants to undertake an initial attack on a fire. The correct use of portable fire extinguishers can prevent a small controllable fire from growing into a large uncontrollable fire, which may threaten the safety of the buildings occupants. If staff are adequately trained in their use, they may be effective in preventing the growth and development of a fire.

Where a building owner has assessed their building and determined they have existing portable fire extinguishers, the building owners will only be required to ensure those extinguishers remain correctly installed and maintained by a QBSA licensed contractor to AS 1851.1.

Where owners have assessed the floor area of their building to be over 300m^2 and does not have portable fire extinguishers, then the installation of extinguishers is required. The fire extinguishers must be installed by a QBSA licensed contractor and installed to AS2444. This work is self-assessable and does not require a building permit from the relevant Council.

Using an alternative solution:

If building owners decide to use an alternative solution to satisfy the performance criteria, and/or the work includes reliance on fire safety management procedures, then this work will require a development application to Council and a referral to the Queensland Fire and Rescue Service to provide advice on proposed procedures and the Fire Safety Management Plan.

A building may currently have portable fire extinguishers that are being misused by occupants, and the building owner may wish to increase the level of supervision to avoid this occurring.

Under these circumstances, a fire safety management procedure may include provisions in respect of securing locations for extinguishers, staff training and the level of supervision provided.

Provision P9 - Fire Hose Reels

This equipment must be provided in larger buildings with a floor area exceeding 500m^2, allowing occupants to undertake an initial attack on a fire. The equipment must be appropriately located to provide sufficient coverage, i.e. the nozzles of all fire hose reels when laid out must reach all parts of the floor for which it services.

Where a building owner has assessed their building and determined that the installed fire hose reel does not reach every part of the floor which they service, the owner must then take corrective action to either alter the floor layout so that the hose will reach all parts of the floor, or have an additional hose reel installed.

Where fire hose reels are not installed in a building over 500m^2, the owners must have a fire hose reel installed by a QBSA licensed contractor and in accordance with the current Australian Standard. Where the installation of a fire hose reel is required, this work is considered to be plumbing work, and is not self-assessable work, and will therefore require a building permit from the relevant local Council.

Using an alternative solution:

If building owners decide to use an alternative solution to satisfy the performance criteria, and/or the work includes reliance on fire safety management procedures, then this work will require a development application to Council and a referral to the Queensland Fire and Rescue Service to provide advice on proposed procedures and the Fire Safety Management Plan.

A building may currently have fire-resisting compartments with a floor area less than 500m^2. The building owner could demonstrate that an equivalent level of fire safety, in compliance with current Building Code of Australia requirements, has been provided.

Under these circumstances, a fire safety management procedure may include provisions to ensure that the compartmentalisation remains maintained throughout the life of the building whilst functioning as a budget accommodation building.

Provision P10 - Fire Hydrants

An adequate fire fighting water supply is required for larger buildings over 500m^2 to allow the Queensland Fire Service undertake rescue operations. Fire hydrants will, in many cases, provide adequate water supply.

The Fire Safety Standard specifies for budget accommodation building the criteria that must be met before the Queensland Fire and Rescue Service install a fire fighting water supply for use:

- the building's floor area is larger than 500m^2; and
- if a Queensland Fire Service is available or use the water supply; and
- a hydrant is not available within 90m of the most disadvantaged part of the building when measured around the outside perimeter of the building.

Where a building owner has assessed their building to determine that compliance with the above criteria cannot be met, the owner then has two options to satisfy the acceptable solution:

- install a fire hydrant to within 90m of the building; or
- install fire sprinkler system in the building.

If the building owner chooses either one of these options, it will involve plumbing work or structural alterations, and a 'special fire service'. The work will therefore require a building permit and a development application to the relevant Council. As the work involves a special fire service, a referral to the Queensland Fire and Rescue Service is also required.

Using an alternative solution:

If building owners decide to use an alternative solution to satisfy the performance criteria, and/or the work includes reliance on fire safety management procedures, then this work will require a development application to Council and a referral to the Queensland Fire and Rescue Service to provide advice on proposed procedures and the Fire Safety Management Plan.

A building may currently not achieve complete coverage in accordance with A10 (a) and is in a remote location where no dedicated water supply is available. A building owner could demonstrate that onsite water supply is sufficient for the duration of the fire, and the type of fire fighting service available provides a level of fire safety appropriate to the circumstances.

Under these circumstances, a fire safety management procedure may include provisions to ensure that the dedicated water supply remains available.

Provision P11 - Smoke Hazard Management

Air circulation systems within a building may, in the event of fire, cause smoke to spread rapidly through the building. Building owners should therefore be aware that if air conditioners or other air handling systems are installed within their building, they might require modification to ensure that safe evacuation remains possible. This may be achieved by a number of means:

- Building owners should ensure that their air handling systems limit the spread of smoke or alternatively detect smoke and operate in a way that provides for safe evacuation; or
- Where a building owner has assessed their building and determined that compliance with the acceptable solution requires the modification or alteration of their air handling system, then this involves a 'special fire service', which is assessable development. This will require a Development Approval for building works from the relevant Council.

Using an alternative solution:

If building owners decide to use an alternative solution to satisfy the performance criteria, and/or the work includes reliance on fire safety management procedures, then this work will require a development application to Council and a referral to the Queensland Fire and Rescue Service to provide advice on the proposed procedures and the Fire Safety Management Plan.

A building may have an air handling system that currently does not achieve compliance with AS/NZS 1668, and in particular the smoke exhaust rate identified in the BCA. A building owner could demonstrate that the rate of extraction provided by their system will allow for the safe evacuation of occupants for the appropriate time.

Under these circumstances, a fire safety management procedure may include provisions relating to the rate of smoke extraction recorded and verified evacuation times to fully evacuate the occupants, and a more stringent ongoing maintenance regime for the existing system, which better ensures its continued reliability.

Provision P12 - Inspection and Maintenance

The safety of the building occupants in the event of fire is largely dependent on all installed fire safety systems functioning in accordance with their designed performance. Building owners can ensure this ongoing performance by correctly managing the inspection and maintenance programs for these systems. Building owners are reminded that they have statutory and duty of care obligations to ensure this maintenance is carried out throughout the life of the building.

Budget accommodation building owners have an additional obligation to prepare and maintain a Fire Safety Management plan that has a requirement for a maintenance schedule for the building's prescribed fire safety installations. Schedule 1 of the Fire Safety Standard details the mandatory maintenance, inspection and testing requirements, the inspection authority, and the nature and frequency of inspections and testing.

Building owners should be aware of the range and varieties of inspections required and ensure careful co-ordination of the appropriate testing authorities. For more information, refer to the "guideline" Inspection and Maintenance Options.

Use of guidelines

These guidelines are intended for use by-

- Building owners;
- Local governments;
- Building certifiers for acceptable solutions;
- Building certifiers with competence in fire safety for performance decisions; and
- Fire engineers, architects and building designers.

Associated guidelines

Other guidelines relating to fire safety in budget accommodation buildings provide specific guidance on various parts of the legislation, as well as illustrative examples using actual buildings as case studies.

The list of guidelines includes:

- How to Comply with the Fire Safety Standard;
- Development Application Process;
- Budget Accommodation Buildings;
- Smoke Alarms & Emergency Lighting;
- Enforcement, appeals, extensions of time;
- Inspection and Maintenance Options;
- Fire Safety Audits;
- Fire Safety Management Plans;

Case studies on actual buildings include:

- Fully compliant building;
- Large single storey building;
- Small supported accommodation building;
- Two storey timber hotel;
- Three storey boarding house; and
- Two storey backpacker hostel.

Guideline and case studies are available on the following websites:

www.dlgp.qld.gov.au
www.fire.qld.gov.au/building safety

A copy of the legislation and the Fire Safety Standard are also available from these websites.

For further information

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