



Tasmania Fire Service

Tasmania Fire Service Building Safety Guideline

GENERAL	BUILDING SAFETY
0.3.5 Vulnerable Occupants in Residential Buildings	

1. PURPOSE

This guideline has been prepared to provide fire safety advice on new and existing buildings, or parts of buildings, used for the accommodation of persons with a disability and support homes for the elderly, children and other vulnerable groups. This guideline is intended to:

- Outline the position of the Tasmania Fire Service (TFS) on the minimum levels of fire safety that should be achieved for new and existing buildings which are intended to accommodate vulnerable occupants which require physical assistance in an evacuation;
- Summarise some key parameters considered important by the TFS on:
 - Minimum fire safety provisions in buildings accommodating vulnerable occupants;
 - The parameters to consider when defining the vulnerability of occupants;
 - The preparation of fire safety performance solutions to address fire safety for occupants.
- Include informative appendices to clarify the background and intent of this guideline.

This guideline does not cover all building types and arrangements used to accommodate vulnerable occupants. The guideline is informative only and the TFS will comment on any submission on a case-by-case basis.

2. APPLICATION DETAILS

This guideline is applicable to building surveyors, building designers, fire safety engineers and other building professionals that are required to make determinations on the suitability of fire safety systems which are appropriate for buildings that accommodate vulnerable occupants.

3. POSITION OF THE TASMANIA FIRE SERVICE

The TFS is of the view that buildings or parts of buildings that accommodate aged occupants, children and persons with a mental or physical disability that require physical assistance in their daily activities and have an evacuation impairment must be provided with fire safety measures appropriate to their level of impairment and need to address the increased challenges faced by these members of the community in a fire.

Additional operational challenges are present when dealing with vulnerable members of the community. Extra fire safety measures “buy time” for occupants and provide a redundancy for search and rescue activities on the fire ground. Fire safety systems in a building enable the TFS to adequately distribute resources and support our primary rescue and firefighting activities. This decreases the risk to life safety and increases firefighter safety.

It is the position of the TFS that a building surveyor involved in the certification of new buildings and dwellings used to accommodate unrelated elderly people, children, people with a disability or other vulnerable occupants should consider:

- The extent of vulnerability of those occupants;
- The number of occupants that require physical assistance to evacuate; and
- The level of evacuation impairment of occupants,

to determine if they meet the criteria for a residential care building under the Building Code of Australia (BCA). This consideration should be made based on the occupant group requiring the highest level of assistance and the anticipated use of the building in the future.

The TFS consider that building owners, service providers and building surveyors should consider if the presence of vulnerable occupants with evacuation impairments in existing buildings and dwellings used for supported care trigger the change of use provisions under section 55 of the *Building Act 2016* – i.e. requiring them to be updated to the current BCA requirements.

TFS is of the opinion that building surveyors assessing all buildings providing supported accommodation should carefully consider the occupant characteristics and the vulnerability of occupants to determine if they have an evacuation impairment when determining the fire safety measures that are to be provided to a building – refer to section 4.

Where there is doubt over the function and use of the building and the level of evacuation impairment of the occupants, then it is the position of TFS that the highest level of fire safety features should be considered by the building surveyor to protect vulnerable occupants and to provide a safe environment for firefighters.

4. KEY CONSIDERATIONS FOR DETERMINING OCCUPANT VULNERABILITY

The vulnerability of an occupant group should be determined by the extent of physical assistance that is required to aid persons in their daily activities and whether they have an impairment that necessitates assistance during an evacuation. The BCA delineates between such occupancies, under the following sub-categories:

- Buildings that accommodate the aged, children or disabled people; and
- A residential care building, as defined under Schedule 1 of the BCA Volume One.

It is the view of the TFS that if one or more people require physical assistance in their daily activities and have an evacuation impairment, a building surveyor should consider if the building should be considered a residential care building. The TFS consider that the following characteristics should be reviewed when assessing the extent of evacuation impairment, occupants may have and the required fire safety systems in a building:

- The number of occupants which are to be accommodated in a building;
- The nature of vulnerability (e.g. mental, physical, child, aged, etc);
- The extent of care provided (e.g. full or part-time, on-site, etc) and number of carers present;
- If members of a family permanently reside in the same home and provide care;
- The staff to resident ratio expected in the building;
- Whether an occupant has an impairment that restrict their:

- Mental or physical capacity to respond and interpret a cue from fire to evacuate a building; or
- Ability to independently evacuate from the building and therefore requires physical assistance to safely evacuate the building.
- The type of occupants that may be accommodated in the building in the future.

5. PERFORMANCE SOLUTIONS

Compliance with the performance requirements of the BCA can be achieved by complying with the deemed-to-satisfy (DTS) provisions or by preparing a performance solution. If a fire safety performance solution is proposed to modify fire safety systems in a building used to accommodate vulnerable occupants, the TFS notes the following:

- We strongly recommend consultation is undertaken with the TFS at concept stage;
- A performance-based design brief (PBDB) must be prepared for the building;
- The extent of vulnerability and/or disability proposed should be well defined. This could include liaison with the end user or through conservative assumptions on the characteristics of occupants in the building;
- The TFS is of the position that the provision of sprinkler protection is integral to achieving suitable levels of fire safety for vulnerable occupants unless concessions exist in the BCA for protection measures. Where sprinklers are not proposed, it should be demonstrated that the level of care/support provided is commensurate with the extent of physical assistance being provided or the proposed fire safety measures mitigate risks to occupants to a similar degree as sprinkler protection;
- The performance solution should consider whether sufficient time to evacuate the occupants of the building is provided taking into consideration any delays due to reduced functional capacity to self-evacuate.

Based on our experience on other projects as a reporting authority under clauses 26A and 27 of the *Building Regulations 2016*, the TFS is unlikely to deem buildings operationally suitable which propose to omit major fire safety systems in buildings which contain vulnerable occupants with an evacuation impairment on the basis of:

- A function or use which is not appropriate for the fire hazard – e.g. such as holiday lets; or
- Fire safety performance solutions which rationalise reduction in fire safety by comparing a building used to accommodate vulnerable occupants to other buildings uses which are utilised for short/longer term holiday and boarding accommodation;
- A design that assumes most occupants can evacuate independently.

6. ROLE OF BUILDING SURVEYOR

The TFS acknowledge that determining the classification of a building under the BCA is the building surveyor's responsibility under the *Building Act 2016*. It is important that the correct classification of a building is applied in consultation with key stakeholders for the safety and benefit of the building occupants, the community and firefighters. The BCA is intended for interpretation by all stakeholders, however where the class of a building is unclear or disputed clause 4(3) of the *Building Act 2016* provides for the relevant building surveyor to classify the building to the class it most closely resembles.

As a reporting authority, the TFS review the function and use of a building to determine the appropriateness of the fire safety systems in a building, firefighter safety and operational suitability. The classification of a building is an important parameter in our review, as it informs us of the minimum benchmarks which should be considered for community and firefighter safety.

Approved by:



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MANAGER, BUILDING SAFETY UNIT

(For and on behalf of the Chief Officer)

APPENDIX 1 - REFERENCES

Australian Building Code Board (ABCB), 2007a, Fire Safety (Sprinklers) in Residential Care Buildings – Consultation Paper, Canberra, May 2007.

Australian Building Codes Board (ABCB), 2007b, Class 1b & class 3 Building Classification and Use – Consultation Paper, Canberra, June 2007.

Australian Building Codes Board (ABCB), 2019a, NCC 2019: Building Code of Australia update (Part 1), <https://www.abcb.gov.au/Resources/Videos/ncc-2019-building-code-of-australia-update-part-1>.

Australian Building Codes Board (ABCB), 2019b, National Construction Code Volume One, Building Code of Australia, <https://ncc.abcb.gov.au>.

Australian Institute of Health and Welfare (AIHW), 2020, People with disability in Australia, Canberra, <https://doi.org/10.25816/5ec5be4ced179>.

Bennetts, I., Kip, S., Henderikus, R., 2017, Fire Safety and the National Disability Insurance Scheme, Fire Protection Association of Australia (FPA), <http://www.fpa.com.au/technical/other-documents/safety-for-vulnerable-people.aspx>.

National Disability Insurance Agency (NDIA), 2020a, Council of Australian Governments, NDIS, <https://www.ndis.gov.au/understanding/national-disability-strategy/council-australian-governments>.

National Disability Insurance Agency (NDIA), 2020b, Access to the NDIS Operational Guideline, Section 8 – The disability requirements, NDIS, <https://www.ndis.gov.au/about-us/operational-guidelines/access-ndis-operational-guideline>.

General Fire Regulations 2021 (Tas)

Tasmanian Planning Commission (TPC), 2017, Tasmanian Planning Scheme, Clause C13.0 Bushfire-Prone Areas Code:

https://www.planning.tas.gov.au/__data/assets/pdf_file/0006/582225/Planning_Directive_5.1_-_Bushfire-Prone_Areas_Code_-_effective_1_September_2017.PDF

APPENDIX 2 – INFORMATIVE APPENDICES

A2.1 BACKGROUND

There has been a notable policy shift away from institutionalised care over the last several decades for the elderly, people with a disability and children. [ABCB, 2007b; AIHW, 2020] Broadly, the intent of providing home-based care is to ensure non-discriminatory access to services for all Australians, improve quality of life and increase independence among vulnerable groups.

In 2011 the Council of Australian Governments (COAG) agreed to reform disability services through a National Disability Insurance Scheme (NDIS). The scheme was intended to allow people with disabilities and their carers to access a range of support measures. Shortly after, the *NDIS Act 2013* was created and, after an initial trial period, the full scheme was rolled out across Australia in 2016. [Bennetts et al, 2017; NDIA, 2020a]

As part of the NDIS scheme, funding was made available for support services providers, and individuals, to modify existing dwellings and buildings to accommodate persons with various mental and physical disabilities and a range of support needs. [NDIA, 2020a] TFS have witnessed an increase in the referral of these types of buildings for review.

A2.2 INTENT

The National Construction Code (NCC) groups buildings and structures into different classifications based on their intended use, design and construction. [ABCB, 2019b] The classification of a building, in part, determines the fire safety measures that are required.

Planning schemes use the same or similar terms with respect to the provision of bushfire mitigation measures for some buildings located in bushfire-prone areas, based on their uses if classified for planning as a vulnerable use [TPC, 2017]. As a result, there is variable usage and some confusion in industry about both classifications and requirements.

The intent of this guideline is to define the TFS position on fire safety in buildings used to accommodate vulnerable occupants (e.g. such as group homes, supported housing specialist disability accommodation and the like) to ensure the best possible fire safety outcomes are achieved for people who may be unable to think or act independently in a fire emergency.

It is also provided to aid building professionals in determining whether a building may accommodate vulnerable occupants that would need evacuation assistance and guidance on the implications this may have on fire safety. This is in recognition that the function and use of a building is determined in the early stages of design and directly influences the fire safety outcomes.

A2.3 NATIONAL CONSTRUCTION CODE

The NCC suite includes 1b and 3 classifications which are intended to be applied to buildings that have unrelated people – see Table 1. Class 1b buildings were first introduced in Amendment 4 of the Building Code of Australia (BCA) 90 in 1999 to cater for boarding homes, short-stay holiday buildings, renting rooms in a dwelling and the like.

Class 3 buildings were included in the original revision of BCA and included more stringent requirements for larger short stay accommodation buildings that contained unrelated persons. [ABCB, 2007b]. It also specifically included higher risk buildings for children, disabled people or the aged. In the 2019 revision of the NCC suite the definition of the class 3 building was updated to include residential care buildings. The definition is replicated as follows:

‘A residential care building means a Class 3, 9a or 9c building which is a place of residence where 10% or more of persons who reside there need physical assistance in conducting their daily lives and to evacuate the building during an emergency (including any aged care building or residential aged care building) but does not include a hospital.’

It is considered that the intent of including this classification was to acknowledge that certain buildings contain vulnerable occupants that justify additional fire safety measures to facilitate evacuation in a fire. [ABCB, 2007a; ABCB, 2019a]

Class 1b	Class 3
<p>One or more buildings which together constitute –</p> <p>(a) a boarding house, guest house, hostel or the like that:</p> <p>(i) would ordinarily accommodate not more than 12 people; and</p> <p>(ii) have a total area of all floors not more than 300m² (measured over the enclosing walls of the building or buildings); or</p> <p>(b) four or more single dwellings located on one allotment and used for short-term holiday accommodation.</p>	<p>A residential building providing long-term accommodation for a number of unrelated persons, including the following:</p> <p>(1) A boarding house, guest house, hostel, lodging house or backpacker accommodation.</p> <p>(2) A residential part of a hotel or motel.</p> <p>(3) A residential part of a school.</p> <p>(4) Accommodation for the aged, children, or people with disability.</p> <p>(5) A residential part of a health-care building which accommodates members of staff.</p> <p>(6) A residential part of a detention center.</p> <p>(7) A residential care building.</p>

Table 1 Class 1b and 3 buildings as defined under the NCC

It is understood that both classifications are currently used in the certification of buildings for vulnerable occupants such as the aged, children and disabled persons. Additionally, there are some service providers leasing private class 1 properties and placing clients in these buildings including those located within bushfire-prone areas.

A2.4 FIRE SAFETY FOR BUILDINGS ACCOMMODATING VULNERABLE OCCUPANTS

A2.4.1. FIRE HAZARDS

Vulnerable people are people who due to their age, health, physical attributes and physiological conditions, face increased challenges during a fire. For example, this could include the elderly, children and people with a mental or physical disability. Their capacity to independently respond to fire cues and undertake evacuation may be reduced and they may require the provision of additional physical assistance in an evacuation.

Physical assistance could involve guidance or monitoring of a person while they exit the building or may involve supplementing a person's physical capability through mechanical means – i.e. carrying, mobilising via wheelchair/bed or the like.

Needing to provide assistance increases the time required to evacuate a building. The increased time to evacuate occupants reduces the safe margin available to exit in an emergency. This results in increased risk of illness or injury in a fire. [Bennetts et al, 2017].

Where staff are present and must assist multiple occupants in an emergency, there may not be enough people to assist all occupants to evacuate prior to the onset of untenable conditions in a building. The provision of additional active or passive fire safety systems such as sprinklers and smoke detection in a building can “buy time” for those occupants so they can evacuate to a place of safety until the emergency services arrive.

A2.4.2. FIRE SAFETY MEASURES REQUIRED BY THE DTS PROVISIONS OF THE BCA

A class 3 building is required to be provided with certain fire safety measures by Volume One of the BCA (ABCB, 2019b) based on the size and specific use of the building. It is the TFS view that a residential care building is required to have the following fire safety measures:

- Clause C2D2 (2019 C1.1) and Specification S5 (2019 Specification C1.1) of the BCA include requirements for fire-rated bounding construction between sole-occupancy units (SOUs), public circulation spaces and corridors and ancillary areas such as kitchens, break-out rooms, and the like for residential buildings. The TFS considers that bedrooms inhabited by individuals to the exclusion of others are their own SOU.

Note: The TFS acknowledges that concessions may be available to residential care buildings that are fully sprinkler protected in Specification S5 clause S5C10 (2019 clause 2.9 of Specification C1.1) of the BCA. It is recommended that the appropriate authority review the suitability of applying these concessions in multi-storey residential care buildings.

- Clause E1D4 (2019 E1.5) of the BCA requires sprinklers to be installed in accordance with Specification 17 (2019 Specification E1.5) in class 3 buildings that are used for residential aged care. Specification 17 (2019 Specification E1.5) of the BCA requires sprinklers to achieve compliance with AS 2118.4.
- Clause E2D3 (2019 E2.2) of the BCA requires class 3 residential care buildings to be provided throughout with an automatic smoke detection and alarm system in accordance with Specification 20 (2019 Specification E2.2a). Specification 20 (2019 Specification E2.2a) of the BCA allows either a smoke alarm or smoke detection system, or a combination of both, if the number of occupants is less than 20. If more than 20, a smoke detection system must be installed in the building.

Any variations to these key requirements should be assessed via a fire safety performance solution. It is noted that this guideline does not constitute all of the possible fire safety matters that could apply to a specific situation but is provided for assistance in determining the appropriate fire safety measures. It is up to the individuals acting with appropriate professional advice to determine its application.

A2.5 INFORMATION ON BUILDINGS IN BUSHFIRE PRONE AREAS

Class 3 and 1b buildings in bushfire-prone areas need to have suitable bushfire protection measures as provided in the '*Director's Determination – Requirements for Building in Bushfire-Prone Areas (transitional)*' or the '*Director's Determination – Bushfire Hazard Areas*'. Either Determination may apply based upon the municipal area.

The bushfire protection measures include construction requirements and hazard management areas to achieve bushfire assessment level (BAL)-12.5 (AS 3959) together with access for fire appliances and for egress, water supplies for firefighting and a TFS approved emergency plan for bushfire.

Bushfire protection measures will increase building and compliance costs and the best approach is to locate buildings for accommodating vulnerable people outside bushfire-prone areas. Where this is not practical, subdivision Bushfire Hazard Management Plans should be obtained prior to land purchase so only lots which can provide BAL-12.5 building areas are considered by service providers.

Accommodating vulnerable people in a respite centre, residential aged care home, retirement home or group home located in a bushfire-prone area also requires conformance with the Bushfire-Prone Areas Code contained in every planning scheme. This also applies to existing buildings which are changing from domestic residences into aged or group homes. (TPC, 2017)

A2.6 ANCILLARY NOTES

A2.6.1 CLASS 2 BUILDINGS

The NCC also defines class 2 buildings which are normally multi-storey residential apartments. These buildings are typically intended to be for longer term accommodation and related people. It is acknowledged that in Tasmania there is a low volume of multi-storey or high-rise residential developments which could be utilised for accommodation of vulnerable occupants. It is considered that some aspects of this guideline would likely be applicable to multi-storey residential buildings that are used to accommodate vulnerable occupants.

A2.6.2 GENERAL FIRE REGULATIONS 2021

Clause 4(a) of the *General Fire Regulations 2021* (GFRs) defines the meaning of a prescribed building for the purposes of the regulations and includes a '*class 1b building within the meanings of the BCA that is used to provide supported accommodation for persons with physical, developmental or psychiatric disabilities*'.

The GFRs were developed prior to the introduction of the residential care building definition in the NCC. The definition of a prescribed building in the regulations does not endorse the use of a class 1b building for the accommodation of vulnerable occupants requiring physical assistance or having an evacuation impairment. It is acknowledged that these regulations may need to be updated for consistency with the updated NCC provisions and the position in this guideline.