



Directions Report:

Emergency Egress for all Occupants 2013

Prepared for the Australian Building Code Board

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Prepared by the Physical Disability Council of NSW

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Who is the Physical Disability Council of NSW?

The Physical Disability Council of NSW (PDCN) is the peak body representing people with physical disabilities across New South Wales. This includes people with a range of physical disability issues, from young children and their representatives to aged people, who are from a wide range of socio-economic circumstances and live in metropolitan, rural and regional areas of NSW

The objectives of PDCN are:

- To educate, inform and assist people with physical disabilities in NSW about the range of services, structure and programs available that enable their full participation, equality of opportunity and equality of citizenship
- To develop the capacity of people with physical disability in NSW to identify their own goals, and the confidence to develop a pathway to achieving their goals (ie self advocate).
- To educate and inform stakeholders (ie about the needs of people with a physical disability) so they are able to achieve and maintain full participation, equality of opportunity and equality of citizenship.

The Physical Disability Council appreciates the opportunity to consider, and make comment to the Australian Building Code Board as part of seeking feedback on the Directions Report: Emergency Egress for all Occupants.

Background

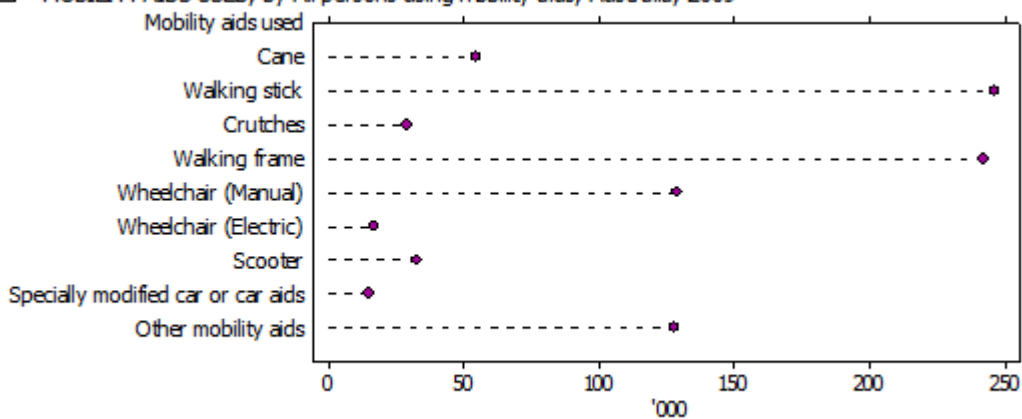
Recommendation 16 of the House of Representatives inquiry into the draft Disability (Access to Premises- Buildings) Standards highlights the lack of deemed-to-satisfy provisions in Part D- Access and Egress and Part E- Services and Equipment of the BCA. Research was conducted by the Australian Building Code Board (ABCB) to identify options for access and egress that were considered as safe, equitable and dignified. As part of this research the ABCB has sought feedback on proposals identified in the Directions Report- Emergency Egress for all Occupants.

People with physical disability use different mobility aids depending on function. A persons' selection of the most appropriate mobility aid will depend on the environ that it is being used, and this may include any of the following aids: canes, walking sticks, crutches, walking frames, manual and powered wheelchairs and scooters. With an ageing population the most commonly used mobility aids are walking sticks and walking frames. Although the number of people using wheeled devices such as manual wheelchairs, electric wheelchairs or scooters (190,000) is comparatively small, greater access to the built environment is sought. Based on data from the Australian Bureau of Statistics (ABS) approximately 25% of people with physical disability use wheeled devices, and approximately 75% have an ambulatory physical disability. ¹

¹ Australian Bureau of Statistics (2009) 4446.0 Disability, Australia- Aids

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MOBILITY AIDS USED, by All persons using mobility aids, Australia, 2009



Source: Survey of Disability, Ageing and Carers, 2009 (cat. no. 4430.0)

Proposal 1 – Notification of active systems

It is proposed that visual alarms be provided where automatic smoke detection and alarm systems are required in buildings and parts of buildings required to be accessible.

Proposal 2:- Identification and location of exits

It is proposed that fire-isolated stairways be co-located with lifts.

- D2.21 Door handles in the path of travel to an exit
- D2.23 Signs on doors, and D3.6 and Specification D3.6 Braille and tactile signage (PDCN would recommendation that additional advice be sought on vision impairment from Bruce Maguire at the Australian Blindness Forum)
- D2.15 Threshold ramps

Proposal 3;- Suitability of use- dimensions

It is proposed to apply the accessibility requirements of AS 1428.1 to doors and circulation spaces and ramps in exits and paths of travel to an exit.

Egress element	Proposed additional egress requirements in areas required to be accessible
Corridor in path of travel to exit	No additional requirements
Door in a path of travel	No additional requirements
Non-fire isolated stairway	No additional requirements
Non-fire isolated ramp	No additional requirements
Step in a path of travel	Apply accessway requirements to the path of travel to an exit
Fire-isolated stairway	Clause 11 of AS 1428.1 for handrails, TGSIs at commencement of stairs and landings
Fire-isolated ramp	Clause 10.3 of AS 1428.1 for handrails, TGSIs, handrails, ramp gradients, kerb rails and landings
Fire-isolated passageway	Apply accessway requirements
Horizontal exit door	No additional requirements
Entrance door to fire isolated stairway or passageway	AS 1428.1 Clause 13 requirements for luminance contrast, door controls
Exit door from a fire-isolated stairway, fire-isolated ramp or fire-isolated passageway to open space	AS 1428.1 Clause 13 requirements for luminance contrast, door controls
Path of travel after discharging from an exit to road or open space	Apply accessway requirements apply from the point of discharge from an exit along the route to a safe place

Proposal 4- Suitability of Use Accessibility of ramps and stairs

It is proposed to extend the requirements of AS 1428.1 for stairs and ramps to those used in an exit.

Discussion

Proposal 2

The Physical Disability Council of SW (PDCN) supports the suggested changes made in Proposal 2 of the 2013 Emergency Egress for all Occupants Directions Report, and understands that these changes have already been included in the 2013 Building Code of Australia (BCA). These suggested changes include amendments to the following Performance Requirements:

- D2.21 Door handles in the path of travel to an exit
- D2.23 Signs on doors, and D3.6 and Specification D3.6 Braille and tactile signage (PDCN would recommendation that additional advice be sought on vision impairment from Bruce Maguire at the Australian Blindness Forum)
- D2.15 Threshold ramps

In summary PDCN supports the proposed changes to ensure a more consistent layout between lifts and fire isolated stairways.

Proposal 3

As the Premises Standards reference 'provisions' it is acknowledged that these Standards already met the Cth Disability Discrimination Act (1992)² and subsequently funding for access and egress through the Final Regulation Impact Statement for Decision (RIS 2009-05) has not been required. The proposal does not hinder emergency egress, nor does it alter the likely cost and/or difficulty of providing emergency egress.³

Due to the difficulty in identifying access and egress measures that are safe, equitable and justified ABCB has sought feedback on amendments included in Proposal 3. Amendments (1-7) listed below have been identified from this proposal as impacting on the emergency egress for people with physical disability:

1. Replace steps in a path of travel with accessways (Clause 6 of AS 1428.1)
2. Install compliant handrails in stairways of fire- isolated stairways (Clause 11 of AS 1428.1)
3. Construct ramps and install handrails in fire- isolated ramps (Clause 10.3 of AS 1428.1)
4. Install accessways in fire- isolated passageways (Clause 6 of AS 1428.1)
5. Fix door controls to the entrance door to fire isolated stairways and passageways (Clause 13 of AS 1428.1)
6. Fix door controls to exit doors from fire- isolated ramps, stairways and passageways to an open spaces (Clause 13 of AS 1428.1)
7. Apply accessway requirements apply from the point of discharge from an exit along the route to a safe place to the path of travel after discharging from an exit to road or open space

The Directions Report identifies that the amendments listed above are relevant to the following building types:

- ◆ Class 1b holiday accommodation (including caravan/tourist parks, bed and breakfasts (B&Bs), cabins and home stays)
- ◆ Class 3 residential buildings including backpackers' accommodation, hotels/motels, accommodation for the aged
- ◆ Class 5, 6, 7b, and 8 buildings including offices, shops, premises in which goods or services are offered for sale

It is assumed that these amendments are not relevant to 9c type buildings as institutional accommodation facilities such as nursing homes would already have more stringent fire precautions.

² Australian Government (2010) Disability (Access to Premises- Buildings) Standards Section 3.2- Compliance with Access Code

³ Australian Building Code Board- Final Regulation Impact Statement for Decision (RIS- 2009- 05)

With the growth in size of buildings, with a growth in number of tall buildings there have been increased risks associated with the size, most significantly with the risk of fire. Whilst this paper is directed at needing to provide emergency egress due to fire, the following events may also result in building occupants needing to egress from an emergency;

- Toxic chemical discharge
- Earthquakes
- Cyclones
- Flood

Simultaneously to the growth in tall buildings, people with disability have been integrated into the community. As an example in Australia, Eureka Tower in Melbourne which is the tallest residential tower, being 297 meters in height and the first in Australia with evacuation towers. With increasing community participation there has been an increasing number of people with disabilities needing to access tall buildings as residents, employees and visitors. This has put people with disabilities at increased risk of not being able to evacuate in case of an emergency. For people with disability this impacts on their ability to seek employment, use public transport, live independently and to seek recreational and leisure pursuits.

People with ambulatory disabilities may be able to negotiate one or two flights of stairs in non-critical times, but during an emergency their ability to negotiate, numerous flights may be compromised due to smoke, stress and/or their health condition. People using wheeled mobility devices will be unable to evacuate using fire stairways. Even with the support of wardens and fire personnel, PDCN considers it as impractical to carry people in wheelchairs down flights of stairs. This was learnt after the explosion in Bondi Junction in 2009 where 80 residents many of them aged were carried down 20 flights of stairs with four firefighters per chair, with crews being rotated every few floors.

Evacuation strategies to be effective need to consider other occupants other than just people with disability when considering other occupants that may hinder the safe evacuation of others, these may include:

- People that have a temporary mobility difficulty such as through a sporting, industrial or road accident.
- People that have a health issue such as obesity, a heart complaint, asthma etc.
- Women that are at a late stage of pregnancy and
- Those that are accompanied by children and infants, possibly in prams or strollers.

Internationally the following evacuation strategies are considered as options when evacuating people with disability:

- Protect in place
- Horizontal Evacuation – next compartment, outside, fire stair enclosure.
- Vertical evacuation using lifts
- Vertical evacuation using fire- isolated stairways
- Vertical evacuation with the aid of wardens and fire personnel

Specific emergency policies and procedures would be required prior to the implementation of any of the strategies identified above. Whilst PDCN is not in favour of using refuges for evacuation purposes it recognises that refuges may be necessary as part of the evacuation strategy whether this refers to being kept in a safe location such as in a fire- isolated stairway whilst awaiting fire personnel, waiting in a lift lobby awaiting a lift, being moved to an open space or on to an alternative floor. Whatever strategy is selected it is important to apply the following Performance Requirements identified in the BCA:

- A sound system and an intercom system to warn occupants of an emergency.
- A communication system to warn hearing impaired occupants of an emergency.
- Suitable evacuation signs.
- Signs or other means to instruct occupants about the use of a lift during a fire.
- Means of evacuating from buildings.
- Dimensions of paths of travel to exits.
- Evacuating occupants from a fire with evacuation routes being maintained while occupants evacuate that part of the building.
- Fire detection systems and appropriate fire suppression systems such as a fire hose reel system, fire extinguishers, a fire hydrant system or a sprinkler system.
- One or more passenger lifts fitted as an emergency lift to facilitate the activities of the emergency services personnel plus having stretcher facilities in at least one emergency or passenger lift.
- Suitable facilities to co-ordinate emergency services personnel intervention during an emergency.⁴

Whilst most people with physical disability would be unable to evacuate using fire- isolated stairs, PDCN would not necessarily be any more favourable in this evacuation strategy with the of amendments being proposed for fire- isolated stairways.

The need for larger lift lobbies in Australia to assist with fire personnel and the safe evacuation of occupants has been documented. In recognising this limitation in size it is recognised that the built environment in lift lobbies will not necessarily provide same level of access as provided in the community.

PDCN would be in favour of the adoption of amendments to improve access fire- isolated ramps, fire- isolated passageways and open spaces, but recognises that evacuation via any of the identified egress elements would probably only be part of a total evacuation plan. Furthermore PDCN recognises that due to the lessee concession, that access improvements planned for the interior of the building would not necessarily include improvements to exterior egress elements, such as access improvements to the front entrance. PDCN would recommend that emergency egress be considered and implemented into all building works, including works to new buildings, and new parts and affected parts within existing buildings to ensure that emergency egress is available to all occupants.

⁴ Australian Building Code Board (20136) Building Code of Australia Volume 1

Information obtained from the National Institute of Standards and Technology World Trade Centre Investigation revealed that approximately 1000 surviving occupants had a limitation that impacted their ability to evacuate, and that lifts as a primary source of egress could play a key future role in both fire fighter access and building occupant egress, particularly for people with disability.⁵

Due to the large variety of circumstances where refuges maybe used PDCN believes that the ABCB needs to determine the type of refuge to be used prior to seeking feedback about possible triggers as the trigger may need to be determined based on a number of conditions such as:-

- Emergency plan
- Building height
- Building type
- Age of building
- Preferred method of egress
- Occupants (employees, residents, visitors)
- Expected time lapse for a person being accommodated in a refuge before assistance from fire personnel arrives

In summary PDCN does not believe that the proposed amendments will ensure a safe, equitable and dignified egress for people with disability, and would prefer refuges in locations where people with disability were not further isolated from fire personnel, such as in toilet facilities.

Proposal 4

In summary PDCN is in favour of additional handrails for ramps and stairways to enhance egress and reduce the risk of injury.

⁵ Australian Building Code Board (2013) Information Handbook: Lifts Used During Evacuations

Appendix 1: Notes from AS1428.1- 2009

Ramp: An inclined surface located on an accessible path of travel with a gradient between 1:20 and 1:14, and a maximum rise of 3.5 meters

Kerb ramp: An inclined surface located on an accessible path of travel with a maximum rise of 190 mm, a maximum of 1520 mm in length, a gradient not steeper than 1:8 to assist with accessing a kerb

Step ramp: An inclined surface located on an accessible path of travel with a maximum rise of 190 mm, a maximum of 1900 mm in length, a gradient not steeper than 1:10

Threshold ramp: An inclined surface located on an accessible path of travel with a maximum rise of 35 mm, a maximum of 280 mm in length, a gradient not steeper than 1:8

An unobstructed accessible path of travel has a minimum width of 1.0 meters, and 1.5 meters in width where there is an obstruction. Landings are provided as rest areas and are required at either ends of the ramp, at 9 m intervals for a 1:14 ramp, and every 15 m for a 1:20 ramp. A landing on a straight ramp needs to measure a minimum of 1200 x 1000mm, for a ramp with a change in direction not exceeding 90 degrees a landing measuring 1500 x 1500 mm is required with truncated edges, and where the ramp changes direction between 90- 180 degrees a larger landing measuring 2000 x 1540 mm is required. A passing space measures 1200 x 1000mm and provides sufficient space for two people in wheelchairs to pass each other along an accessible path of travel.

Clause 13 of the Access Codes identifies the following requirements for doorways:

- The colour contrast used between the door leaf and the wall
- Width of single or double doors
- The circulation space required to open the door
- Location and style of door handle, and
- The pressure required to open the door.

Single doors used in egress elements measure a minimum width of 850 mm with a minimum luminance contrast of 30% between the wall and door. A circulation space is required to open doors, and for a fire exit door measuring 850 mm in width, opening outwards a circulation space of between 1220 x 560x 340mm, or 1240 x 240 x 660mm is required depending on whether the door latch is located on the left hand- side or right hand- side of the door.

Safe place within the National Construction Code refers to—

(a) A place of safety within a building—

(i) Which is not under threat from a fire; and

(ii) From which people must be able to safely disperse after escaping the effects of an emergency to a road or open space; or

(b) A road or open space. ⁶

⁶ Australian Building Code Board (20136) Building Code of Australia