Australian Elevator Association

IPP 022	Requirements for New Lift Installations	Nov 2025
AEA	WH&S - Building Interface Items	V1

Subject

This Industry Position Paper (IPP) outlines the requirements and recommendations to be considered when a 'new lift' is to be installed in a new building and is only applicable to lifts considered in the AS 1735 Series of standards.

Building Designers, Architects, Builders and other relevant parties need to consider the following when designing a new building which includes a lift or multiple (group/bank) lifts.

The information in this IPP is in parts,

- Legislation, Codes and Standards with which the lift supplier and builder must comply with.
  - Compliance with WH&S
  - Compliance with Lift Standards
  - Compliance with other Legislation, Codes and Standards
- Building and Lift interface items – a list of items to be considered in every building development.
- Summary

Legislation, Codes and Standards

1 Compliance with Work Health & Safety Legislation

In all jurisdictions in Australia, lifts, escalators and moving walkways (and certain other types of plant) need to be design registered under the Work Health & Safety Act and Regulations (WH&S).
See, WH&S Regulation Part 1 Plant requiring registration of design 1, 1.4

Most Australian jurisdictions (excepting VIC at the time of writing) also require that certain types of plant require item registration.
See, WH&S Regulation Part 2 Items of plant requiring registration 3, 3.4

Note[1] – Item registration is to be completed by the entity who owns the plant/building usually the requirement is annually.

A Person Conducting a Business or Undertaking (PCBU) that designs an item of plant may apply to the regulator for the registration of the design.

When submitting the application, the application must include certain information in particular a statement signed by the designer of the item of plant: i) stating compliance to obligations under section 22 of the Act and ii) specifying the published standards and engineering principals used in the design.

See, WH&S Regulation Division 3 Registration process for plant designs, 249 Who can apply to *register plant design and, 250 Application for registration*

Note[2] – In NSW Lifts, escalators and moving walks are considered 'high risk plant'.

Note[3] – With engineering principals, these are not usually considered for complete lift designs (as it would be too complicated to design a lift to comply with WH&S, however occasionally individual items may be included. Discuss with the lift supplier at the time of design.

2 Compliance with Lift Standards

All lifts considered in this IPP are designed under the AS 1735 Series of standards.

Note[4] – Lifts, escalators and moving walks as defined in AS 1735 Series of Standards Includes passenger and/or goods lifts, escalators, moving walks, service lifts, inclined lifts, special purpose industrial lifts, lifts used for persons with limited mobility (of various types) and residential lifts.

It does not reference or include other types of lifting systems e.g. man and material hoists, car stackers, lifts/hoists in wind turbines or other hoist types.

3 Compliance with other Codes, Standards and Legislation

Besides the design standards applicable to the plant, there are other additional requirements for lifts so they can be installed.
It is your responsibility to ensure compliance with these additional requirements.

Some of these are listed below,

- Electrical Act / Regulations – including ASNZS 3000 – Wiring Rules
- Building Code of Australia (BCA) Volumes 1 & 2 (as applicable)
- Disability Discrimination Act / Disability (Access to Premises – Buildings) Standard
- Environmental Assessment and Planning Act / Regulations
- Some of the Acts and Regulations above, refer to specific codes and standards, e.g. ASNZS 3000 Wiring rules
- Other Local requirements
- And the requirements of the relevant Inspection Authority e.g. SafeWork / WorkSafe and relevant legislation

Building & Lift - Interface requirements to be Considered

The list below is not exhaustive, if you are unsure about any of the items below, please contact your Vertical Transport provider or the AEA.

- The intended use of the lift/s. Passenger, Goods/Passenger or Goods only.

- Any special purpose lift/s required, i.e. limited mobility, inclined, stair or wheelchair requirements.

- Current design standards state 75kg as the average passenger weight and define the maximum elevator car area for rated load, and the minimum area per person (at 75kg) to detect and prevent overloading.

- Lift car sizes are measured at 1 m above the floor to the steel shell walls.

Note[5] – The NCC 2022 Vol 1 has some specific requirements for minimum car sizes.
E3D3 Stretcher facility in lifts (2) A stretcher facility must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600 mm wide x 2000 mm long x 1400 mm high above the floor.
E3D5 Emergency lifts (4) An emergency lift must – (b) in a Class 9a building serving a patient care area – (i) have minimum dimensions, measured clear of all obstructions, including handrails, etc complying with Table E3D.
E3D8 Accessible features required for passenger lifts, In an accessible building, every passenger lift must have the following features where applicable: (b) Lift floor dimensions of not less than 1400 mm wide x 1600 mm deep for all lifts which travel more than 12 m. (c) Lift floor dimensions of not less than 1100 mm wide x 1400 mm deep for all lifts which travel not more than 12 m. (d) Lift floor dimensions of not less than 810 mm wide x 1200 mm deep for a stairway platform lift.

- Reaction load of the car and landing sills need to be considered, with a minimum of 40% of the passenger lifts rated load.

- The type and mass of handling devices intended to be used to load and unload the car in the case of Goods/Passenger lifts.

- Environmental conditions such as temperature, humidity, exposure to sun or wind, snow or corrosive atmosphere (lifts need to be installed in a dry, dust free and vermin proof environment).

Note[6] – Glass lift-wells (or partial glass lift-wells) can allow extreme temperature rises due to solar exposure. See NCC 2022 Vol 1 requirement S24C2 Lift cars exposed to solar radiation.

- Heat dissipation from the components, ventilation of the lift-well or machinery spaces. These areas must be maintained between +5^{o}C and 40^{o}C to ensure the correct function of components.

Note[7] – If mechanical ventilation is required a suitably qualified mechanical services engineer will need to sign off the design. The lift supplier is to provide the heat generation of the equipment to the mechanical services engineer.

- Seismic requirements. Builders need to supply specific information to lift companies so that they can run a calculation to ensure compliance with NCC requirements.
    - Importance level
    - Site Sub Soil Class
    - A/floor factor
    - Hazard Factor (Z)

- Noise or vibration concerns. Lifts are required to have certain audible forms of communication i.e. landing indication and car information. Minimum level between 20-80 Db(A) at a maximum frequency of 1500 Hz are noted in AS 1735.12:1999 which is referenced in the NCC Vol 1 Part E3, E3D8

- Hydraulic lifts may emit certain smells, so consideration of where they are used maybe a requirement.

- The lift-well and machinery spaces need to be constructed of materials that have adequate strength and suitable quality. Loading and forces have been considered.

- The 'fire rating' of the lift-well is correct to the building classification.

- Generally, some dimensions expressed in the lift layouts (drawings) can be larger but must not be reduced (e.g. internal lift-well dimensions, lift pit and overhead), as the mechanical size of the lift specified cannot be reduced without reducing the load/speed etc. e.g. displayed as +25 mm / -0 mm.

- Any ancillary lifting beams/points/hooks and their loads have been considered.

Note[8] – If mechanical lifting beams are required a suitably qualified mechanical engineer will need to sign off the design.

- Access, lifts like any other plant require maintenance, access to the lift-well and machinery spaces should be safe, direct and well lit (minimum 50 lux).
- Within the machinery spaces where technicians need to work (i.e. at a control cabinet) lighting needs to be permanently installed with an intensity of at least 200 lux at floor level. All other areas must be 50 lux at floor level.

Note[9] – Motor Room Less (MRL) lifts usually have the control cabinet (for each lift) adjacent to a landing entrance, the lighting requirement of at least 200 lux at floor level must be achievable when work is undertaken at the control cabinet, and an uncontrolled space which allows easy and safe working on equipment, i.e. clear height of 2.10 m with a depth of 0.70 m in front of the controller and a minimum width of 0.50 m or the width of the control cabinet.

- Access to the lift-well or machinery spaces must not be restricted access i.e. via private premises.

- Lift landing entrances must not be obstructed in any way.

- Lift landing entrances shall be provided with uninterrupted access to an access stairway / exit without necessitating entry into or via private residences. The access way shall not be less than 1000 mm wide, excluding doors.

- Where a security foyer is required in a building, access may be via locked security doors provided all the following criteria is met,
    - All doors to revert to the unlocked state in the event of, power failure and/or fire alarm
    - All locked foyer areas to be monitored by closed circuit TV and intercom systems to a manned 24/7 location

- Access for emergencies or rescue operations need to be considered.

- The lift-well and machinery spaces must not be used for purposes other than the lift/s. They shall not contain ducts, cables or devices other than for the lift/s.

Note[10] – Sub-main cables for the lift shall be located adjacent to the connection point to the lift and not run inside the lift-well to reach that location.

They may contain equipment for air-conditioning or heating of these spaces,

excluding steam heating and high-pressure water heating, however, any control and adjustment devices of the cooling or heating apparatus must be located outside the lift-well.
They may also contain fire detection or extinguishers, with high operating temperature (e.g. above 80°C) and suitably protected against accidental impact.

- It must be noted that where sprinkler systems are used in either the lift-well or machinery spaces that the lift equipment and electrical/electronic components are not designed to be waterproof/water resistant and once activated the water ingress will deactivate or cause the lift to fail.
  Therefore, if the sprinkler system has been activated the lift/s should not be used even by emergency services. See also AEA IPP005 Sprinklers in lift shafts.

- Smoke detectors in accordance with AS 1670.1:2018 Clause 3.27.12 are required in the top of the lift well and shall be able to be tested or replaced without entering the lift-well. AEA recommends the use of Aspirating type smoke detectors as the simplest way to comply with the code requirements. The alternative of installing an access door/hatch would need co-ordination between the lift provider (access to the access door/hatch, space to install the hatch in the case of MRL, requires shutting the lift down, and may still require some degree of entering the lift-well), builder and the dry fire engineer, and would have the requirements of any other access door into the lift-well, including cost factor.

Note[11] – The AEA IPP 12 Smoke detectors in lift-wells has more detail on this topic.

- Access to machinery spaces shall be by stairs, not ladders.

- Protection of spaces below/under the lift pit, if accessible spaces do exist below the lift pit (i.e. not to solid earth), the base of the pit shall be designed for an imposed load of 5000 N/m^2, and the counterweight shall be equipped with safety gear.

Note[12] – When counterweight safety gear is required the lift-well will need to have a larger footprint (Wide x Depth) so there is room for the counterweight safety gear to be installed.

- Access doors required in the lift-well have minimum distances between landing sills (11.0 m), dimensions, safety requirements, signage and physical attributes, these need to be discussed during design of the building.

- NCC Volume 1 requirements (main items)
  - Section C Fire resistance – Part C1 Fire resistance C2D11 Lift car linings, Specification 7 S7C6 and Part C4 Protection of openings C4D11 Openings in fire rated lift shafts
  - Section E Services and Equipment – Part E3 Lift installations (all clauses to be considered) and Specification 24 Lift installations

Note[13] – There are some differences between the Lift design standards and the NCC, in these cases it should be remembered that the lift design registration under WH&S is what the lift must comply with.

Note[14] – When ‘‘emergency lifts’ are required NCC Vol 1 Part E3 E3D5, there are further requirements to what the NCC states, ASNZS 3000:2018 A3 Cl.7.2 also has requirements under ‘safety services’ and these also need to be considered i.e. fire rated mains.

Note[15] – With regards to the Fire service recall control switch it is to be located at the landing nominated by the appropriate authority i.e. fire services/emergency services.

- Where multiple lifts are to be installed in a building due to its complexity or number of stories to ensure the building is serviced in line with ISO 8100-32 Planning, a Traffic analysis should be undertaken.

- Building designers should consider whether a single lift is adequate for servicing a building, especially if the building is more than 4 stories above ground level i.e. redundancy.

- All lifts except a stairway platform lift must have emergency hands-free communication to a manned 24/7 call centre, not 000.

Summary

In most cases lift, escalator and moving walk companies are engaged well after the building design and the Building Development Application (DA) has been approved. This IPP is a guide to assist designers and builders as they prepare to apply for a DA. In some cases, the building design cannot be changed/altered to accommodate design requirements of lifts, escalators and moving walks directly and this can lead to costly design changes/modifications.

In some states legislation has/is changing to ensure building design is done in collaboration with all relevant parties to remove the possibilities of ongoing design changes/modifications.

For further information contact the Original Equipment Manufacturer (OEM), your Vertical Transport provider or the AEA.

Version Control

Version	Description	Author	Date
R5	Draft	AEA	16/10/2025
V1	First Published	AEA	1/11/2025

Annex A – The AS 1735 Series of Standards

Only the standards highlighted in yellow are lift design standards the others are used as refence, specific components or elements of lift design, obsolete or withdrawn.
All parts AS 1735 standards are listed to provide clarity on the series.

AS 1735.1.1:2022 Lifts, escalators and moving walks – General requirements (Reference standard)

AS 1735.1.2:2021 Lifts for the transport of persons and goods – Passenger and goods passenger lifts (EN81-20:2020)

AS1735.1.3:2021 Examinations and tests – Design rules, Calculations, Examinations and tests of lift components (EN81-50:2020)

AS 1735.1.4:2021 Existing lifts – Rules for the improvement of safety of existing passenger and passenger goods lifts (EN81-80:2019)

AS 1735.2 – Obsolescent

AS 1735.3 - Obsolescent

AS 1735.4:2020 Electric and hydraulic service lifts (dumbwaiters) (EN81-3+A1:2008)

AS 1735.5.1:2019 Safety of escalators and moving walks – Construction and installation (EN81-115-1:2017)

AS 1735.5.2:2019 Safety of escalators and moving walks – Rules for the improvement of safety of existing escalators and moving walks (EN81-115-2:2017)

AS 1735.5.3:2019 Safety of escalators and moving walks – Correlation between AS 1735.5:2016 and AS 1735.5.1:2019 (CEN/TS 115-3:2017)

AS 1735.5.4:2019 Safety of escalators and moving walks – Interpretations related to AS 1735.5X Series of standards (CEN/TS 115-4:2015)

AS 1735.6 – Superseded (now part of AS 1735.5X Series)

AS 1735.7:1998 (Aged) Stairway lifts

AS 1735.8:1986 (Aged) Electric lifts with inclined path (Residential)

AS 1735.8.1:2020 Electric lifts with inclined path (Commercial) (EN81-22:2014)

AS 1735.9:1984 (Aged) Special purpose industrial lifts

AS 1735.10 – Withdrawn

AS 1735.11:1986 (Aged) Fire rated landing doors

AS 1735.12:1999 Facilities for persons with disabilities (referenced in NCC 2022)

AS 1735.12:2020 Facilities for persons with disabilities (not currently recognised for new lifts in new buildings)

AS 1735.13:1986 (Aged) Lifts for persons with limited mobility – Manually powered

AS 1735.14:1990 (Aged) Lifts for persons with limited mobility – Restricted use – Low-rise platforms

AS 1735.15:2021 Special lifts for the transport of persons and goods – Vertical lifting platforms intended for use by persons with impaired mobility (EN81-41:2010)

AS 1735.16 – Withdrawn

AS 1735.17:1995 (Aged) Lifts for persons with limited mobility – Restricted use – Water drive

ASNZS 1735.18:2002 Passenger lifts for private residence – Automatically controlled

AS 1735.19:2019 Remote alarm on passenger and goods lifts (EN81-28+AC:2019)

AS 1735.20:2020 New passenger and goods passenger lifts in existing buildings (EN81-21:2018)

Annex B – Table, Guide to the selection of a lift

Guide for the Selection of Lift								
Type of Lift	**Relevant Part of AS 1735**	**EN Adoption**	**Maximum Travel - m**	**Fully enclosed lift-well**	**Type of Control**	**Maximum Speed - m/s**	**Maximum Floor Area - m/2**	**Other**
Passenger / Passenger Goods	1.1 / 1.2	YES - EN81-20	NL	YES	Automatic	NL	NL	
Electrohydraulic - Passenger and Goods	1.1 / 1.2	YES - EN81-20	NL	YES	Automatic	1.0 m/s	NL	
Service lifts (Dumbwaiters)	4	YES - EN81-3		YES	Manual	1.0 m/s	1.0 m/2	Not intended to move persons (max 300 kg)
Stairway lifts**	7	NO		NO	Manual - Constant pressure	0.16 m/s	0.35 m/2	min 115 kg - 1 Pass (max 300 kg)
							1.0 m/2	min 200 kg - 2 Pass / Wheelchair (max 300 kg)
Inclined lifts	8	NO	NL	NO	Manual	0.5 m/s	1.0 m/2	45 degrees maximum inclination
Manually powered*	13	NO	6 m	NO	Manual	NL	1.1 m/2	
Low-rise platform*	14	NO	0.6 m	NO	NL	0.15 m/s	1.6 m/2	
Non-automatically controlled*	15	YES - EN81-41	3 m	NO	Non-automatic and key lockable	0.15 m/s	1.6 m/2	
			7 m	YES				
Automatically controlled* (with restrictions)	16	NO - Withdrawn	12 m	YES	Automatic and key lockable	0.25 m/s	1.6 m/2	
Passenger lifts for private residence - Automatically controlled	18	NO	12 m	YES	Automatic	0.3 m/s	1.6 m/2	
Legend	*	Only intended for use by persons with limited mobility - not for general public use						
	**	Stairway lifts can be 1 or 2 Pass and be standing only / one chair / 2 chair / or wheelchair						
	NL	Not limited						

Annex C – Acronyms

AEA	Australian Elevator Association
AS	Australian Standard
ASNZS	Australian Standard / New Zealand Standard
BCA	Building Code of Australia (meaning Volumes 1 & 2)
^{0}C	Degrees Celsius
DA	Development Application
Db	Decibel
EN	European Standard
FRL	Fire rating level
Hz	Hertz
IPP	Industry Position Paper
lx	Lux
m	Metre
mm	Millimetre
N/m^2	Newtons per Square Metre
NCC	National Construction Code (meaning Volumes 1, 2 & 3)
OEM	Original Equipment Manufacturer
PCBU	Person/s Conducting a Business or Undertaking
RDGM	Regulated Design Guidance Material (NSW DBP Regulation)
W x D	Width x Depth
WH&S	Work Health and Safety (Act or Regulation)