PD ISO/TR 8101-10:2024

BSI Standards Publication

Fire safety on lifts

Part 10: Comparison of safety standards worldwide on lifts used by firefighters and for building evacuation

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National foreword

This Published Document is the UK implementation of ISO/TR 8101-10:2024. It supersedes PD ISO/TR 16765:2003, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee MHE/4, Lifts, hoists and escalators.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Technical Report

ISO/TR 8101-10

First edition
2024-11

Fire safety on lifts —

Part 10: Comparison of safety standards worldwide on lifts used by firefighters and for building evacuation

Sécurité incendie des ascenseurs —

Partie 10: Comparaison des normes de sécurité sur le plan mondial pour les ascenseurs utilisés par les pompiers et pour l'évacuation des bâtiments

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 178, *Lifts, escalators and moving walks*.

This first edition of ISO/TR 8101-10 cancels and replaces ISO/TR 16765:2003, which has been technically revised. It also incorporates the Technical Corrigendum ISO/TR 16765:2003/Cor 1:2003.

The main changes are as follows:

— updated list of countries which responded to the questionnaire;

— completely updated list of questions included in the questionnaire as well as the appropriate responses.

A list of all parts in the ISO 8100 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

This document includes a comparison between CEN Standard EN 81-72 for firefighters' lifts (elevators) and the national codes of several countries which responded to a questionnaire circulated to TC 178 members. The questionnaire results include responses from the responding countries, including the information for EN 81-72 (which is used by twenty-eight EU countries, Iceland, Macedonia, Norway, Serbia, Switzerland and Turkey), plus individual responses from Australia, Austria, Canada, China, Denmark, Finland with two separate responses, Germany, India, Japan, Namibia, Netherlands, Norway, Russia, Switzerland, UK and USA. The goal was to prepare a technical report which provides reference information to assist national standards committees when reviewing and revising individual codes and which can initiate a gradual convergence of the technical requirements worldwide.

The comparison includes reference to national lift (elevator) codes, fire codes and building regulations.

This document is intended to aid standards writers in developing their firefighters lift (elevator) requirements and to help standards users understand the basis for the requirements as they are applied throughout the world.

Some information on evacuation procedures and issues is included in this document. Consideration of the evacuation information can be used in connection with the updating of existing ISO documents on this subject (e.g. ISO/TS 18870 and ISO/TR 25743).

This document can be read in conjunction with the various lift (elevator), fire and building codes, as it was often necessary to summarize the requirements for the sake of the comparisons. Further, the information contained in this document does not necessarily represent the opinions of the standards writing organization responsible for the developments of the safety standards which are being compared.

This document can be used as a basis together with an appropriate risk assessment when preparing a global standard for firefighters' lifts and/or evacuation lifts (elevators).

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Fire safety on lifts —

Part 10: Comparison of safety standards worldwide on lifts used by firefighters and for building evacuation

1 Scope

This document consists of an updated comparison of the requirements of selected topics pertaining to the use of lifts for firefighting and building evacuation, as covered by worldwide safety standards.

This document applies to electric traction lifts only, although some sections are also applicable for positive drive lifts and other lifts suspended by rope or chain.

2 Normative references

There are no normative references in this document.

3 Terms and definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1.1
control room
room separate from the lift well, allowing bodily entry and containing the lift controller

3.1.2
control space
space inside the lift well containing the lift controller

3.1.3
evacuation
planned and orderly phased movements to withdraw, or cause to withdraw, users from a building via accessible routes to one or more accessible places of safety in the event of an emergency

[SOURCE: ISO 21542:2021, 3.10, modified — Fire evacuation shortened to more general term Evacuation. “All users” changed to “users”.]

3.1.4
machinery space
space in the lift well containing the machine

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3.1.5
Phase 1
priority recall for the firefighters' lift

Note 1 to entry: See EN 81-72-2020, 5.8.7.

3.1.6
Phase 2
use of the lift under firefighters' control

Note 1 to entry: See EN 81-72-2020, 5.8.8.

3.2 Abbreviated terms

FFL	firefighters' lift	See EN 81-72-2020, 3.5.
FSAL	fire service access level	See EN 81-72-2020, 3.8.

4 Questionnaire results

The countries that responded to the questionnaire are grouped in sections in Annex A, in no particular order.

This document doesn't state requirements or suggest specific solutions. The results indicate different solutions for similar problems or issues which have been implemented in the various countries.

This document attempts to provide information on requirements on lifts used for firefighting and evacuation, particularly when performance-based building codes or building regulations are being applied.

Requirements listed in the tables are valid at the time of the questionnaire and might have been superseded or updated since that time. The requirements are a moving target and constantly evolving. Building and lift designers are expected to always check building codes or building regulations and the lift standard in effect before implementing a specific design. Lifts used as firefighters' lifts and emergency lifts are defined in the various applicable building codes or building regulations and lift standards. Users of this document should refer to the local standards for an understanding of the appropriate description, use and application of the various types of lifts.

Building evacuation concepts and requirements are being actively discussed or implemented in many countries and might have evolved beyond the requirements stated in this document. Users of this document are expected to always verify local requirements and discuss these requirements with the appropriate experts and authorities. See also ISO/TS 18870 and ISO/TR 25743

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Annex A
(informative)

Comparison of fire codes and requirements — Sections of the comparison

A.1 Table A.1

Table A.1 includes countries using EN 81-72 (which includes twenty-eight EU countries, Iceland, Macedonia, Serbia, and Turkey), Austria and Australia.

NOTE Australia has not adopted EN 81-72.

A.2 Table A.2

Table A.2 includes Canada, United States and Japan.

A.3 Table A.3

Table A.3 includes China and Finland. Two responses were received from Finland and both are included. One response was from lift experts and the other response was from firefighting experts in Finland.

A.4 Table A.4

Table A.4 includes India, the United Kingdom and Germany.

A.5 Table A.5

Table A.5 includes Denmark, Russia and Namibia.

A.6 Table A.6

Table A.6 includes Netherlands, Norway and Switzerland.

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Table A.1 — Countries using EN 81-72

	Country →	28 EU countries, Macedonia, Serbia, Turkey, Iceland, Norway and Switzerland		Australia		Austria	
Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
1.0	**Building Requirements**						
1.1 (a)	What building code is effective in your country?	Country specific		NCC 2019		Country specific	EN 1990:2013
1.1 (b)	Is a protected lobby in front of FFL required?	Yes. It is called as Safe Area.	EN 81-72:2020, 5.1.1	No		Yes. It is called as Safe Area.	EN 81-72:2020, 5.1.1
1.2	Is there a particular building type or minimum building height requirement for:						
(a)	Firefighters' Lift(s)?	Country specific		Yes — Building classifications 2-9c (excluding 9a): 25 m effective height minimum — Building classification 9a (health care), where patient care areas are not at level with direct access to road or open space: Any effective height	NCC2019 Clause E3.4(a)(i) &(ii)	Country specific	Yes, regulation and limits de-pending on the federal state.
(b)	Lift Evacuation Systems? – Brief Description	Country specific		No		Country specific	No
(c)	Stretcher Use?	Country specific		Yes In at least one emergency lift, or where an emergency lift is not required, in at least one passen-ger lift that serves any storey above 12 m	NCC2019 Clause E3.2(a)(i) &(ii)	Country specific	Yes, TRVB 150 S:2018
(d)	Is there any requirement for every landing in the building to be served by the Firefighters' Lift?	No. The floors to be served are assumed to be determined as part of the design of the building for fire.	EN 81-72:2020, 1.4 EN 81-72:2020, 5.1.1	Yes	NCC2019 Clause E3.4(b)	**No.** Country specific	EN 81-72:2020, 1.4 TRVB 150 S:2018
1.3	Is smoke control required in:						
(a)	lift well?	No		No		Yes	TRVB 150 S:2018
(b)	lobby?	No		No		Yes	TRVB 150 S:2018

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Table A.1 *(continued)*

	Country →	28 EU countries, Macedonia, Serbia, Turkey, Iceland, Norway and Switzerland		Australia		Austria	
Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
1.4	Does the building design reduce water flowing into lift well during a fire? If yes, is there:	Yes	EN 81-72:2020, 5.1.2 EN 81-72:2020, 5.3.4 EN 81-72:2020, Annex E.2	No		Yes Country specific requirement is a minimum pump capacity of 300 l/min for a minimum duration of 90 min (TRVB 150 S:2018).	EN 81-72:2020, 1.2 EN 81-72:2020, 5.1.2 EN 81-72:2020, 5.3.4 EN 81-72:2020, Annex E.2
(a)	Protection from sprinklers?	Sprinklers are not permitted in firefighters lift well and machinery spaces	EN 81-72:2020, 5.2.9			Sprinklers are not permitted in firefighters lift well and machinery spaces	EN 81-72:2020, 5.2.9
(b)	Protection from FF hoses?	No				No	
1.5	Can lifts other than FFL be used for evacuation?	Yes, country specific	TS 81-76:2011 Evacuation of disabled persons using lifts ISO/TS 18870:2014 Lifts (elevators) — Requirements for lifts used to assist in building evacuation	Yes As a performance solution to DP7	NCC2019 DP7	Yes, but only in specific cases.	TS 81-76:2011 Evacuation of disabled persons using lifts
1.6	Can lifts with partial well enclosures be used as FFLs?	Yes, in combination with additional safety means	EN 81-72:2020, 1.3	No	NCC2019 Clause E3.4(d)(i)	No	EN 81-72:2020, 1.3
1.7	Can FFLs be part of a group of non-FFLs? If yes:	Yes		Yes	NCC2019 Clause E3.4(b),(c),(d)	Yes	
(a)	What are maximum number of lifts in one well?	Not specified, country specific.		No limit			
(b)	Must there be a solid dividing wall between FFL and rest of lifts in a common well?	Yes, country specific		No		Yes	TRVB 150 S:2018
1.9	What is the required ambient temperature range?						
(a)	In machine room?	0-40 °C Note: This temperature range is a requirement for the lift.	EN 81-72:2020, 5.2.5 b)	40 C		0-40 °C	EN 81-72:2020, 5.2.5 b)
(b)	In machinery space?	0-40 °C Note: This temperature range is a requirement for the lift.	EN 81-72:2020, 5.2.5 b)	40 C		0-40 °C	EN 81-72:2020, 5.2.5 b)

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Table A.1 *(continued)*

	Country →	28 EU countries, Macedonia, Serbia, Turkey, Iceland, Norway and Switzerland		Australia		Austria	
Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
(c)	In control room?	0-40 °C Note: This temperature range is a requirement for the lift.	EN 81-72:2020, 5.2.5 b)	40 C		0-40 °C	EN 81-72:2020, 5.2.5 b)
(d)	In control space?	0-40 °C Note: This temperature range is a requirement for the lift.	EN 81-72:2020, 5.2.5 b)	40 C		0-40 °C	EN 81-72:2020, 5.2.5 b)
(e)	In lift well	0-40 °C Note: This temperature range is a requirement for the lift.	EN 81-72:2020, 5.2.5 b)	For glass shafts with solar gain 5 C above ambient to a maximum of 45 C	NCC2019 Specification E3.1	0-40 °C	EN 81-72:2020, 5.2.5 b)
(f)	On lobby side of landing doors	Electrical/electronic lift devices shall be designed to function correctly at 0-65 °C or be made non-operational.	EN 81-72:2020, 5.2.5 a)			Devices shall be designed to operate correctly at 0-65 °C or be made non-operational.	EN 81-72:2020, 5.2.5 a)
1.10	What is the maximum time(s) for FFL to travel from fire service access level to top floor?	60 s. if travel height >200 m, permitted to add 1 s for each 3 m	EN 81-72:2020, 5.2.4	Not specified		60 s. if travel height >200 m, permitted to add 1 s for each 3 m	EN 81-72:2020, 5.2.4
1.11	Must a single FFL serve all floors of a building including those with sky lobbies?	No. The floors to be served are assumed to be determined as part of the design of the building for fire.	EN 81-72:2020, 1.4 EN 81-72:2020, 5.1.1	Yes, if more than one lift is used then transfer floor has to be fire isolated and smoke protected. More than one emergency lift may be used. "Emergency lifts must serve all floors in a building served by passenger lifts". "One emergency lift is not required to serve all floors in a building. Just as one bank of passenger lifts may serve certain floors, so may emergency lifts"	Guide to NCC Volume One 2019 Clause E3.4	No.	EN 81-72:2020, 1.4 TRVB 150 S:2018 EN 81-72:2020, 5.1.1
1.12	What fire test standard is used for lift landing doors?	EN 81-58 Fire classification of landing doors is defined by national building codes.		AS1735 part 11 – 1986	NCC2019 C3.10	EN 81-58 Fire classification of landing doors is defined by national building codes.	EN 81-58
1.13	Do lift landing doors of FFLs have to be thermally insulated?	Not defined, depends on national regulations.	EN 81-72:2020, 5.1.2	No	NCC2019 C3.10	No	
1.14	What is minimum fire rating (minutes) of lift landing doors for FFLs?	Country specific.		60 minutes integrity (-/60/-)	NCC2019 C3.10	Country specific.	TRVB 150 S:2018 E90 (90 min)
1.15	Do the lift landing doors resist smoke penetration?	No		No		No	
1.16	Are liquid based sprinklers permitted?		EN 81-72:2020, 5.2.9		NCC2019 E1.5 AS2118.1-2017		

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Table A.1 *(continued)*

	Country →	28 EU countries, Macedonia, Serbia, Turkey, Iceland, Norway and Switzerland		Australia		Austria	
Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
(a)	In the machine room	No		Yes		No	
(b)	In machinery spaces	No		Yes		No	
(c)	In control rooms	No		Yes		No	
(d)	In control spaces	No		Yes		No	
(e)	In the hoistway top	No		Yes		No	
(f)	In the lift lobby	Yes		Yes		Yes	
(g)	In the hoistway pit	No		Yes		No	
1.17	Are liquid based sprinklers required?				NCC2019 E1.5 AS2118.1-2017 Clause 5.9.2		
(a)	In the machine room	No		Sometimes		No	
(b)	In machinery spaces	No		Sometimes		No	
(c)	In control rooms	No		Sometimes		No	
(d)	In control spaces	No		Sometimes		No	
(e)	In the hoistway top	No		Sometimes		No	
(f)	In the lift lobby	No		Sometimes		No	
(g)	In the hoistway pit	No		Sometimes		No	
1.18	Are liquid based sprinklers prohibited?						
(a)	In the machine room	Yes		No		Yes	
(b)	In machinery spaces	Yes		No		Yes	
(c)	In control rooms	Yes		No		Yes	
(d)	In control spaces	Yes		No		Yes	
(e)	In the hoistway top	Yes		No		Yes	
(f)	In the lift lobby	No		No		No	
(g)	In the hoistway pit	Yes		No		Yes	
1.19	Is power to the lifts removed if sprinklers are activated in the machine room and/or hoistway?	Yes, according to EN 81-20 but EN 81-72 do not permit sprinklers in these spaces	EN 81-20:2020, 5.2.1.2.1	NCC = NO, EN81-20 = YES		Sprinkler are prohibited	EN 81-20:2020, 5.2.1.2.1

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	Country →	28 EU countries, Macedonia, Serbia, Turkey, Iceland, Norway and Switzerland		Australia		Austria	
Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
1.20	Are there requirements to prevent water entering the hoistways of lifts used for evacuation?	Yes	EN 81-72:2020, 1.2 EN 81-72:2020, 5.1.2 EN 81-72:2020, 5.3.4 EN 81-72:2020, Annex E.2	No		Yes	EN 81-72:2020, 1.2 EN 81-72:2020, 5.1.2 EN 81-72:2020, 5.3.4 EN 81-72:2020, Annex E.2
(a)	If yes, how is the water protection implemented? Is it a building design requirement or a lift requirement?	Building design requirement.				Building design requirement.	Drain or pump
1.21	What is the maximum floor height in a blind hoistway?	7 m	EN 81-72:2020, 5.2.7	NCC = 12,2 m, EN81-20 = 11	NCC2019 Specification E3.1 Clause 6	7 m	EN 81-72:2020, 5.2.7
1.22	Can FFLs also be used for moving goods (freight)?	Yes	EN 81-20:2020, 1.1 EN 81-72:2020, Title of the standard	NO		Yes	EN 81-20:2020, 1.1 EN 81-72:2020, Title of the standard
(a)	As a single lift in a residential building?	Yes				Yes	
(b)	As part of a group installation?	Yes				Yes	
1.23	Are there any situations where Firefighter's Lifts or lifts used for evacuation are required to have machine room, i.e. they are not permitted to be MRL lifts?	No				No	
1.24	In the case of MRL lifts used as Firefighter's Lifts or for evacuation, are there specific requirements for devices used for rescue operations to be located at a specific location?	No		NO		No	
1.25	Is pressurization of the hoistways, stairways and lobbies required or permitted?	Permitted	EN 81-72:2020, 5.1.8	Lift wells and lobbies - Permitted as a performance solution Stairways – Required according to NCC2019 E2.2 Table E2.2a	AS1668.1-2015 Section 12 (lift wells) NCC2019 E2.2 Table E2.2a (stairways)	Permitted	

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	Country →	28 EU countries, Macedonia, Serbia, Turkey, Iceland, Norway and Switzerland		Australia		Austria	
Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
(a)	If yes, is there a limit on pressurization differentials at lift doors?	No, but the pressurization shall not negatively affect the opening and closing of the car and landing doors. No negative impact on swaying of travelling cables. Max noise level 80 dB(A).	EN 81-72:2020, 5.1.8	Yes – 20-50 pascals in AS1668	AS1668.1-2015 Clause 12.3	but the pressurization shall not affect the opening and closing of the car and landing doors.	Yes, TRVB 112 S
2.0	**Firefighters' lift (elevator) basic requirements**			NOTE Australian Building Code uses term "Emergency lift"			
2.1	What is minimum rated load (kg)?	630 kg	EN 81-72:2020, 5.2.2	For buildings with effective height >75 m: 600 no stretcher, 900 with stretcher	NCC2019 E3.4 (d)	630 kg	EN 81-72:2020, 5.2.2
2.2	What are minimum car sizes (mm)?			In 9a buildings only (Health Care)	NCC2019 E3.4 (d) (ii)		
(a)	Internal width	1 100 mm	EN 81-72:2020, 5.2.2	1 600		1 100 mm	EN 81-72:2020, 5.2.2
(b)	Internal depth	1 400 mm	EN 81-72:2020, 5.2.2	2 280		1 400 mm	EN 81-72:2020, 5.2.2
(c)	Internal height	2 m	EN 81-20:2020, 5.4.	2 300 For all other building classifications, where required, at least one emergency lift must have clear space of 1 400 (wide) x 2 000 (depth) x 1 400 (height) for stretcher facility and accessibility requirements	NCC2019 E3.2 (a) & (b) NCC2019 E3.6 Table E3.6b	2 m	EN 81-20:2020, 5.4.
2.3	What are minimum entrance sizes (mm)?			In 9a buildings only (Health Care)			
(a)	Width	800 mm	EN 81-72:2020, 5.2.2	900 standard, 1300 for 9a Building	(Class 9a buildings) NCC2019 E3.4 Table E3.4 (All other buildings) NCC2019 E3.6 Table E3.6b AS1735.12-1999 Section 2	800 mm	EN 81-72:2020, 5.2.2
(b)	Height	2 m	EN 81-20:2020, 5.3.2.1	2 100	(Class 9a buildings) NCC2019 E3.4 Table E3.4	2 m	EN 81-20:2020, 5.3.2.1
2.4	Can the FFL car have decorative finishes?	Yes		Yes		Yes	

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Table A.1 *(continued)*

	Country →	28 EU countries, Macedonia, Serbia, Turkey, Iceland, Norway and Switzerland		Australia		Austria	
Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
(a)	If yes, to what standard?	EN 81-20 The materials selected for car floor, wall and ceiling finishes shall meet the requirements of EN 13501-1 as listed: — Flooring: Cfl-s2; — Wall: C-s2, d1; — Ceiling: C-s2, d0.	EN 81-20:2020, 5.4.4	NCC2019 Specification C1.10 Clause 6 AS5637.1 AS ISO9239.1 — Lift car floor linings and floor coverings must have a critical radiant flux not less than 2,2. — Lift car wall and ceiling linings must be Group 1 or Group 2 materials		EN 81-20 The materials selected for car floor, wall and ceiling finishes	Yes, TRVB 150 S:2018 (regarding the opening of any ceiling from inside the car
2.5	Does the lift car have:						
(a)	an emergency roof trap door? If yes;	Yes	EN 81-72:2020, 5.4.1.1	Not required but recommended		Yes	EN 81-72:2020, 5.4.1.1
(i)	is rescue of trapped persons from car top?	Yes	EN 81-72:2020, 5.4.3			Yes	EN 81-72:2020, 5.4.3
(ii)	is self-rescue from inside for FFLs?	Yes	EN 81-72:2020, 5.4.4			Yes	EN 81-72:2020, 5.4.4
(iii)	What is minimum size (mm)	500 mm × 700 mm (630 kg: 400 × 500) shall be measured with the ladder in the rescue position	EN 81-72:2020, 5.4.1.1			500 mm × 700 mm (630 kg: 400 × 500) shall be measured with the ladder in the rescue position	EN 81-72:2020, 5.4.1.1
(b)	Is an emergency side door allowed?	Yes.	EN 81-20:2020, 5.4.6.2	No		Yes.	EN 81-20:2020, 5.4.6.2
2.6	Is the electrical equipment protected against splashing water entering the hoistway? If yes;	Yes	EN 81-72:2020, 5.3.1 EN 81-72:2020, 5.3.2	No		Yes	EN 81-72:2020, 5.3.1 EN 81-72:2020, 5.3.2
(a)	To what method or IPXX rating?	IP 67 or IP X3 or IP X1 or no protection depending on the area	EN 81-72:2020, 5.3 and Annex D				EN 81-72:2020, Annex D
(b)	Which equipment is protected?						
(i)	Car top, bottom, sides	Top and sides IPX3	EN 81-72:2020, 5.3.2			Top and sides IPX3	EN 81-72:2020, 5.3.2
(ii)	landing doors	IPX3	EN 81-72:2020, 5.3.1			IPX3	EN 81-72:2020, 5.3.1
(iii)	the pit	Any electrical equipment which is located less than 1,0 m above the lift pit floor shall be protected to IP67.	EN 81-72:2020, 5.3.2			Any electrical equipment which is located less than 1,0 m above the lift pit floor shall be protected to IP67.	EN 81-72:2020, 5.3.2
(iv)	car buttons	No				No	

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Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
(v)	car indicators or signals	No				No	
2.7	Do FFLs always have power-operated automatic coupled sliding car and landing doors?	Yes, automatically operated horizontal sliding, (coupled) car and landing doors shall be used.	EN 81-72:2020, 5.6	Yes		Yes, automatically operated horizontal sliding, (coupled) car and landing doors shall be used.	EN 81-72:2020, 5.6
2.8	Can FFLs also be used for moving goods (freight) in addition to passengers?	Yes	EN 81-20:2020, 1.1 EN 81-72:2020, Title of the standard	Yes			
(a)	As a single lift in a residential building	Yes		Yes		Yes	
(b)	As part of a group installation	Yes		Yes		Yes	
2.9	Can the machinery be located						
(a)	above the hoistway?	Yes		Yes		Yes	
(b)	under the pit?	Yes		Yes		Yes	
(c)	at the side of well?	Yes		Yes		Yes	
(d)	remote from well, e.g. hydraulic?	Yes		Yes		Yes	
(e)	In the well?	Yes		Yes		Yes	
2.10	What FFL drives are allowed? e.g.						
(a)	Electric traction	Yes	EN 81-20:2020, 5.9.2	Yes		Yes	EN 81-20:2020, 5.9.2
(b)	Hydraulic	Yes, special requirements	EN 81-20:2020, 5.9.3; EN 81-72:2020, 5.5	Yes		Yes	EN 81-20:2020, 5.9.3
(c)	Positive drive by drum and ropes or by sprockets and chains	Yes	EN 81-20:2020, 5.9.2			Yes	EN 81-20:2020, 5.9.2
(d)	Rack and pinion/screw	No		No		Yes	
(e)	Other	No				Yes	
2.11	What are the requirements for self-rescue features related to Firefighters' Lifts? e.g.			Not Specified			
(a)	Use of ladders?	Yes	EN 81-72:2020, 5.4.2, 5.4.3, 5.4.4 and 5.4			Yes	EN 81-72:2020, 5.4.4

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(b)	Maximum floor – floor heights?	7 m	EN 81-72:2020, 5.2.7			7 m	EN 81-72:2020, 5.2.7
3.0	**Control system**						
3.1	How is Phase 1 initiated?						EN 81-72:2020, 5.8.2
(a)	Is there a Ph. 1 keyswitch at the fire service access level?	Yes	EN 81-72:2020, 5.8.1	Yes	NCC2019 E3.7 & E3.9	Yes	EN 81-72:2020, 5.8.8
(b)	Is there a Ph. 1 keyswitch at another location?	No		Possible	NCC2019 E3.9 (a)(i)	No	
(c)	Recalled automatically by smoke detector or other fire alarm system?	Yes, optional	EN 81-72:2020, Annex A.4	Not required but possible		Yes, optional	
(d)	Is it a specific key?	Unlocking triangle as defined in EN 81-20:2020, 5.3.9.3. Other keys may be used to operate the firefighters lift switch only when a car key switch is used.	EN 81-72:2020, 5.8.2	No		Special FF key is required.	EN 81-72:2020, 5.8.2
3.2	Is there a Phase 2 switch in the car?	Optional	EN 81-72:2020, 5.8.8 h)	Yes	NCC2019 E3.7 & E3.10	Mandatory.	
3.3	If the FFL is part of a group:						
(a)	Do all lifts in-group return to FSAL?	Any lift, which is not required to stay in operation in the event of fire, sharing the same well as a firefighters lift should be provided with a fire recall system according to EN 81-73.	EN 81-72:2020, 5.2.8	Yes	NCC2019 E3.9 (e) (vi)	Yes	EN 81-73:2016
(i)	If yes, do doors remain open?	No Doors may remain open if required by national regulations.	EN 81-73:2016, 5.3.5 a) EN 81-73:2016, 5.3.5 b)	Yes	NCC2019 E3.9 (e) (vi)	No Doors may remain open if required by national regulations.	EN 81-73:2016, 5.3.5 a) EN 81-73:2016, 5.3.5 b)
(b)	Do the other lifts in the group have a full FFL control system?	No		Not all lifts in the group are required to be emergency lifts	NCC2019 E3.4 (c)	No	
(i)	If yes, can they also be used for evacuation?			No			
3.4	Are dual entry front and rear entrance doors allowed? (Application large main lobbies/ atriums etc.)	Yes	EN 81-72:2020, 5.8.9.1	Yes		Yes	EN 81-72:2020, 5.8.9.1
3.5	When on phase 2 under firefighters control						

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Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
(a)	Are all landing buttons inoperative and	Yes	EN 81-72:2020, 5.8.8	Yes	NCC2019 E3.9	Yes	EN 81-72:2020, 5.8.8
(i)	isolated from short circuits due to water?	Yes	EN 81-72:2020, 5.11.1	No		Yes	EN 81-72:2020, 5.11.1
(ii)	isolated from short circuits due to smoke?	Yes	EN 81-72:2020, 5.11.1	No		Yes	EN 81-72:2020, 5.11.1
(iii)	isolated from short circuits due to heat?	Yes	EN 81-72:2020, 5.11.1	No		Yes	EN 81-72:2020, 5.11.1
(b)	Does door open button remain operative?	Yes	EN 81-72:2020, 5.8.8 e)	Yes		Yes	EN 81-72:2020, 5.8.8 e)
(c)	Are door safety devices bypassed if affected by heat or smoke?	Yes	EN 81-72:2020, 5.8.8 f)	Yes		Yes	EN 81-72:2020, 5.8.8 f)
(d)	Does the FFL operate separately from a group?	Yes, but only in case of firefighter operation required	EN 81-72:2020, 5.8.7 d)	Yes		Yes	EN 81-72:2020, 5.8.7
(e)	Is there a separate fire service communication system between FSAL, lift car and machine room (machinery spaces, control room/spaces) emergency and test panel? If yes, what type:	Yes	EN 81-72:2020, 5.12	No – EN81-20		Yes	EN 81-72:2020, 5.12
(i)	Jacking red phone	No		No		No	
(ii)	Mobile phone	No		No		No	
(iii)	Intercom	Yes	EN 81-72:2020, 5.12	WIP WIP (Warden Intercom Point) handset complying with AS1670.4-2018 is required. The WIP provides direct communication between the emergency lift and the EICIE (Emergency Intercom Control and Indicating Equipment) only	NCC2019 E4.9 AS1670.4-2015 Clause 5.3.3	Yes	EN 81-72:2020, 5.12
(iv)	Other, please specify	Yes, e.g., Central Command point	EN 81-72:2020, 5.12			No	
3.6	Firefighers' lift operation phase 2						
(a)	How are car doors closed?						
(i)	Constant pressure on car destination floor button until doors have closed?	Yes, constant pressure on car call button or door close button required.	EN 81-72:2020, 5.8.8 d)	Yes	NCC E3.10	Yes, constant pressure on car call button or door close button required.	EN 81-72:2020, 5.8.8 d)

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Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
(ii)	Constant pressure on door close button until doors have closed?	Yes, constant pressure on car call button or door close button required.	EN 81-72:2020, 5.8.8 d)	Yes	NCC E3.10	Yes, constant pressure on car call button or door close button required.	EN 81-72:2020, 5.8.8 d)
(iii)	Other?	Yes, 5.8.8 e) doors shall close when releasing door opening buttons before doors are fully open	EN 81-72:2020, 5.8.8 e			No	
(b)	Can additional car floor call be made while car is in motion?	Yes, but redirection, no additional call	EN 81-72:2020, 5.11.1	Yes		Yes	EN 81-72:2020, 5.8.8 c)
(c)	Is there provision to cancel registered car call?	Yes	EN 81-72:2020, 5.8.8 c)	Yes		Yes	EN 81-72:2020, 5.8.8 c)
(d)	When car arrives at floor, do doors remain closed until door open button is pressed?	Yes	EN 81-72:2020, 5.8.8 e)	Yes		Yes	EN 81-72:2020, 5.8.8 e)
(e)	Does it require constant pressure on the door open button until doors are fully open?	Yes, until doors are within 50 mm of fully open,	EN 81-72:2020, 5.8.8 e)	Yes		Yes, until doors are within 50 mm of fully open	EN 81-72:2020, 5.8.8 e)
(f)	Is there a car call registered indicator in the car?	Yes	EN 81-72:2020, 5.8.8 i)	Yes		Yes	EN 81-72:2020, 5.8.8 i)
(g)	Is there a car position indicator in						
(i)	Car?	Yes	EN 81-72:2020, 5.8.8 i)	Yes		Yes	EN 81-72:2020, 5.8.8 i)
(ii)	The FSAL?	Yes	EN 81-72:2020, 5.8.8 i)			Yes	EN 81-72:2020, 5.8.8 i)
3.7	Are there requirements for the operation of the lifts when there is a failure of the signals or interface between the fire alarm system or manually controlled signals to the lift controls?	Yes	EN 81-72:2020, 5.8.6	No		Yes	EN 81-72:2020, 5.8.6
4.0	**Emergency/Standby power**						
4.1	Is an emergency standby power system always required for FFL?	Yes	EN 81-72:2020, 5.9.1	No		Yes	
4.2	Can it power the FFL at rated load and speed?	Yes	EN 81-72:2020, 5.9.2	If supplied Yes		Yes	
(a)	Is it large enough to return all lifts in-group (including FFL and non-FFLs) to FSAL?	Country specific	EN 81-72:2020, Annex C	No		But not all at the same time	
(b)	If no, can operation be staggered?	Not specified		Yes		Not specified	

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Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
4.3	Must it be capable of running additional lifts on phase 2? If yes, how many?	No		All FFL's		No	
4.4	Must emergency power source be a generator? If not what other system?	No,		No Secondary mains supply system		No, any other system.	
4.5	What is time (seconds) for the emergency power system to be in operation?	If capability of emergency power system then: EN 81-72:2020, 5.9.2: period equal to fire resistance of structure EN 81-72:2020, Annex C: typically 2 h If time for re-establishing of lift: EN 81-72:2020, 5.10: within 60 seconds If time for re-establishing of emergency power supply: Not defined	EN 81-72:2020, 5.9.2 EN 81-72:2020, Annex C EN 81-72:2020, 5.10	Not specified		Not specified	
(a)	Minimum			N/A			
(b)	Maximum			N/A			
4.6	Must the position of the lift be stored? Or is there a maximum distance the lift can move to re-establish position?	Yes N/A	EN 81-72:2020, 5.10	Not specified		Yes	EN 81-72:2020, 5.10
(a)	On loss of power?	No		N/A		No	
(b)	On restoration of normal power?	No		N/A		Yes	EN 81-72:2020, 5.10
(c)	If no: What length of time is it allowed to find its next floor level?	On restoration of primary or secondary power supply, the lift shall not move more than one floor and towards FSAL to establish its position, and available within 1 minute.	EN 81-72:2020, 5.10	N/A		On restoration of primary or secondary power supply the lift shall not move more than one floor and towards FSAL to establish its position.	EN 81-72:2020, 5.10
(d)	Must the correction travel journey automatically (if needed) be towards the FSAF?	Yes	EN 81-72:2020, 5.10	N/A		Yes	EN 81-72:2020, 5.10

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Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
4.7	When emergency/standby power is operational and the doors are closed should phase 1 be automatically repeated?	No		Not sure what they want here		Yes	
4.8	When doors are fully open do they stay open when power is restored?	Not specified		No - must close when on normal service		Not specified	
5.0	**Signals, fixtures, buttons, notices, etc.**						
5.1	Can the car controls be operated using firefighters' gloves?	Not specified		Yes The general response from firefighters was that they would only use the firefighter lift if it was safe to do so. Therefore, they would be using the firefighter lift in safe conditions where it would not be critical to have gloves on and would simply remove them. The removal of personal protective equipment (PPC) would be subject to a risk assessment by the Officer in charge if the practicality of operating the lift with gloves on was an issue.		Not specified	
5.2	Are smoke- or heat sensitive buttons prohibited (e.g. touch buttons)			No		Yes, the correct functioning of the lift control shall be ensured in smoke filled wells and/or machinery spaces;	EN 81-72:2020, 5.2.5 c)
(a)	in the lift car?	No				No	
(b)	on the landing?	Yes, devices on landings shall work at 0 - 65 °C or made non-operational	EN 81-72:2020, 5.2.5 a)			No	
5.3	Are the car buttons protected against water?	No		No		No	
5.4	Are the landing buttons and indicators protected against short circuit and earthing?	The landing control panels and landing indicators on other levels than fire service access level shall be protected to at least IPX3 according to EN 60529 unless they are electrically disconnected on initiation of the firefighters lift switch.	EN 81-72:2020, 5.11.2	No		The landing control panels and landing indicators on other levels than fire service access level shall be protected to at least IPX3 according to EN 60529 unless they are electrically disconnected on initiation of the firefighters lift switch.	EN 81-72:2020, 5.11.2

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Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
5.5	Are FFLs required to be identified by a sign or other identification?	Yes, A firefighters lift switch shall be marked with a firefighters lift pictogram in accordance with Annex G and it shall be clearly indicated to which lift it is associated.	- EN 81-72:2020, 5.8.1 - EN 81-72:2020, 5.8.9.1 b) 1) - EN 81-72:2020, 5.8.9.2 c) 1) - EN 81-72:2020, 5.11.4 - Annex G (normative)	No but it's a good idea		Yes, A firefighters lift switch shall be marked with a firefighters lift pictogram in accordance with Annex G and it shall be clearly indicated to which lift it is associated.	
5.6	Is a keypad permitted to be used in the FFL? If yes,	Yes	EN 81-72:2020, 5.11.3	Yes		Yes	
(a)	Is there a minimum size for the keypad buttons?	Yes, size and type.	EN 81-72:2020, 5.11.3	Yes			
5.7	Are there any special or hidden controls permitted or required?	No		No		No	
6.0	**Operational Test**						
6.1	Are there handover acceptance tests for FFLs?	Yes	EN 81-72:2020, 6	Yes		Yes	EN 81-72:2020, 6 TRVB 150 S:2018
6.2	Is an officially signed test certificate necessary?	Country specific		No			Yes, TRVB 150 S:2018
6.3	Are there specified testing and maintenance requirements for the lifts and related evacuation systems such as fire alarms, communications, signage?	Verification of firefighting operations functionality shall be part of maintenance instructions.	EN 81-72:2020, 6	Yes		Verification of firefighting operations functionality shall be part of maintenance instructions.	EN 81-72:2020, 6
6.4	Is there a specified frequency for testing?			Annually		Yes, at least every 24 months.	Yes, TRVB 150 S:2018
(a)	Specified components or operation to be tested?	Country specific		No		Yes	
(b)	Interface between lifts and building systems?	Country specific		No		Yes	
(c)	Is it a full or partial test as in 6(a)?	Country specific		Partial		Full	
7.0	**Firefighting concepts**						

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Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
7.1	Is there an official firefighter's concept/method for fighting fires in buildings using FFLs?	Yes	EN 81-72:2020, Annex A	Yes but ask each states Fire Fighters Each fire service agency has their own set of operational response guidelines for all types of incidents. The use of firefighter lifts generally comes under the guideline for hi- rise structure fires. The overall concept/approach is consistent across all agencies.		Yes	e. g. EN 81-72:2020, Annex A Depending on the building
7.2	If yes, please submit details as a separate report	See EN 81-72:2020, Annex A		No report provided. General concept/approach is as follows: Prior to using firefighter lifts, a risk assessment by the officer in charge should be undertaken. The considerations may include: — Is there a UPS? — Fire location in relation to lift — Load capacity of lift — Fire water ingress to lift system — Floors (span) of lift operation — etc If the firefighter lifts are deemed safe to use, then the following steps/considerations are undertaken: — Recall firefighter lifts to ground floor using fire service recall switch		See EN 81-72:2020, Annex A	
				— Lifts under control of the Fire Services switch must be operated/controlled by a member of the fire service at all times. — Consider lifts when isolating power supplies — Consider lifts which may be a designated egress path in some instances			

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Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
				— Transport crews and equipment in lift. The lifts must be exited at least one floor below the fire floor. Firefighters must utilise the fire-isolated stairs from there. — Lifts should not be used to access basement areas, due to high risk of smoke ingress.			
7.3	Where are the connections for firefighter hoses?	Water supply at floor levels	EN 81-72:2020, Annex A, A.4	Stairways / landings etc.	NCC2019 E1.3 AS2419.1-2005 Clause 3.2.3.2		
7.4	Are there requirements for protection of the equipment, particularly electronic components, to keep the lifts running as long as possible during high temperature or other severe conditions?	Only electrical devices at landings	EN 81-72:2020, 5.2.5 c)	No		No	
(a)	If yes, Is there a specified temperature?	Electrical devices at landings 0 - 65 °C	EN 81-72:2020, 5.2.5 c)	N/A			
7.5	What type of monitoring of the lifts is required?	No requirement		None		No requirement	
(a)	If yes, Is monitoring information required to be sent to the building management system?	Country specific		N/A			
7.6	Are power supply, communication and monitoring cables and wiring protected with enhanced structural requirements and fire ratings?	Yes	EN 81-72:2020, 1.2	For lifts mains supply wiring only		Yes	EN 81-72:2020, 1.2
8.0	**Evacuation concepts**						
8.1	Is there an official evacuation concept/method for buildings using lifts?	Country specific		Guide only NCC performance based		Country specific, depends on the building	
8.2	If yes, please submit details as a separate report			Download from: https://www.abcb.gov.au/Resources/Publications/Education-Training/Lifts-Used-During-Evacuation			
8.3	Are lifts used for Occupant Evacuation?	Typically not. Only under firefighters control in FFL operation mode	EN 81-72:2020	Refer to 8.1 and NCC DP7		Typically not.	

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Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
8.4	Is there a Standard or Code for evacuation requirements? If yes:	TS 81-76:2011 Evacuation of disabled persons using lifts		No		TS 81-76:2011 Evacuation of disabled persons using lifts	
(a)	Are the requirements part of the building code or other standards?	TS 81-76:2011, lift requirements, if national officially introduced national codes and evacuation concept define: number, size, location of evacuation lifts depending on evacuation concept	TS 81-76:2011	No		No, depends on the evacuation concept of the individual building	
(b)	Are the requirements dependent on building height, size or type?	Depending on evacuation concept	TS 81-76:2011	No		Yes and occasionally more.	
(c)	Are the requirements mandatory or guidelines?	Country specific		Guidelines			
(d)	Are there requirements or policies implemented by Fire Authorities or firefighters pertaining to lifts used for evacuation?			Varies between states. Policies are implemented in some states. For example: Metropolitan Fire Brigade (MFB) Victoria has a guideline – GL-31: Use of Lifts for Evacuation See link: https://www.mfb.vic.gov.a u/Industry/Workplace/Fire -Safety-Guidelines.html			
8.5	If lifts are used for evacuation, is there a reduction in exit stairways used for egress?	Country specific		No		No	
8.6	Are buildings required to have a Fire Safety and Evacuation plan and does it include the lifts?	Country specific		Requirements vary between states and type of building. For example: NSW legislation – Work Health & Safety Regulation Division 43 requires evacuation plans. Lifts are not included, unless via a performance solution to DP7		Depending on the individual case.	
8.7	Is there a defined or specified automatic operation for lifts during evacuation?	No		No		No	
8.8	If the evacuation system is not automatic, is the evacuation coordinated by firefighters or others such as building wardens?	Yes, Attendant controlled evacuation TS 81-76:2011 Evacuation of disabled persons using lifts		No		Yes, Attendant controlled evacuation TS 81-76:2011 Evacuation of disabled persons using lifts	

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8.9	Is training of the occupants required or performed?	Not specified		Varies between states and occupancy type. For example: Class 2 (residential) in NSW – No Class 5 (office) in NSW – Yes (in accordance with building emergency plan)		Not specified	
(a)	If yes, are there regular drills?			Yes			
8.10	Is the evacuation system provided for all building occupants or just those with limited accessibility?	Just for those with limited accessibility		All		Just for those with limited accessibility	
8.11	Are evacuation announcements or signage coordinated with the lift system provided?	Yes		No		No national regulation for evacuation applicable.	
8.12	Is the hoistway and machine room protected, i.e., enhanced fire/smoke protection, structural requirements, etc. for lifts used for evacuation?	Yes		No		No national regulation for evacuation applicable.	
8.13	Is there a protected lobby or safe area for use by occupants waiting to use lifts for evacuation? If yes,	Yes		No		Yes	
(a)	Is there direct access from the lobby to an exit stairway?	Recommended Defined by national building regulations		Yes		Recommended Defined by national building	
(b)	What protection is provided for the lobby in terms of enhanced fire/smoke protection, structural requirements, sprinklers, pressurization, access doors, ventilation, temperature control and monitoring, water, etc.	National Requirements.		No			
(c)	Is there a specified size for the protected lobby?	The minimum dimensions of each safe area are given by national regulations		No		The minimum dimensions of each safe area are given by national regulations	
(d)	Are there requirements for communications systems in the protected lobby (e.g., Noise levels)?	No		No			
(e)	Are there performance requirements for the communication system,	No		No			

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	Country →	28 EU countries, Macedonia, Serbia, Turkey, Iceland, Norway and Switzerland		Australia		Austria	
Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
(f)	Is emergency lighting provided?	In the lift car	EN 81-20:2020	Yes		In the lift car	EN 81-20:2020
8.14	Is there signage to indicate which lifts are to be used for evacuation?	Yes	TS 81-76:2011, 5.5.1.1	No		Yes	TS 81-76:2011, 5.5.1.1
8.15	Is emergency or backup power required for lifts used for evacuation? If yes,	No		No		Yes	
(a)	What is the length of time required for emergency or backup power to be available?			N/A		minimum 30 minutes for non FFLs.	
(b)	Is the emergency or backup power required for just one lift at a time or multiple lifts?			N/A			
9.0	**Other items not listed above (please give details)**						
9.1	Are there future regulation changes being planned that could affect these responses? Elaborate if possible.	TS 81-76:2011 (Evacuation of persons with disabilities using lifts) is in rework with significant changes.	TS 81-76:2011	Yes use of lifts for egress with pressurised lobbies. Revision to Guide			

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Table A.2 — Canada, United States and Japan

	Country →	Canada		United States		Japan	
Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
1.0	**Building Requirements**						
1.1 (a)	What building code is effective in your country?	National Building Code of Canada	NBCC	International Building Code	IBC	Building Standard Law of Japan and relating Notification and	
1.1 (b)	Is a protected lobby in front of FFL required?	Yes		Yes	3007.6	Yes	BSLJ-EO 129.13.3.3
1.2	Is there a particular building type or minimum building height requirement for:					---	
(a)	Firefighters' Lift(s)?	"High" Building 36 m (Residential – 18 m)		"High-Rise Building" > 120 ft. Two Fire Service Access Elevators (FFAE), or all elevators, whichever is less	403.6.1	Yes. Over 31 meters in building height	BSLJ 34.2
(b)	Lift Evacuation Systems? – Brief Description	none		Not required - Permitted	403.6.2	No	
(c)	Stretcher Use?	Yes – one elevator per building	3.5.4.1	Yes – one elevator per building	3002.4	No.	
(d)	Is there any requirement for every landing in the building to be served by the Firefighters' Lift?	Yes	3.2.6.5	Yes	3007.1	Yes but some exception such as floor for only storage	BSLJ-EO 129.13.3.3.1
1.3	Is smoke control required in:						
(a)	lift well?	Yes	3.2.6.6	Yes	3007.5	Yes	BSLJ-EO 112.18.2 (b)
(b)	lobby?	No		Yes	3007.6.2	Yes	BSLJ-EO 129.13.3.3.3
1.4	Does the building design reduce water flowing into lift well during a fire? If yes, is there:	No		Yes		Recommendation Inclination in front of landing door	JEAS A505B 3.2
(a)	Protection from sprinklers?			Yes	3007.3	Not specified	
(b)	Protection from FF hoses?			Not specific		Not specified	
1.5	Can lifts other than FFL be used for evacuation?	Yes		Yes		Not prohibited Some cases are available due to individual evacuation planning	
1.6	Can lifts with partial well enclosures be used as FFLs?	All lifts in the building have Firefighters Emergency Operation (FEO) Ph. 1 and 2.	A17.1/B44 2.27.3	No, but all lifts in the building have Firefighters Emergency Operation (FEO) Ph. 1 and 2.	3007.5 A17.1/B44 2.27.3	No	BSLJ-EO 129.13.3.4
1.7	Can FFLs be part of a group of non-FFLs? If yes:	Yes		Yes		Yes (In ordinary condition, FFLs are used as a part of group operation)	

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Table A.2 *(continued)*

	Country →	Canada		United States		Japan	
Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
(a)	What are maximum number of lifts in one well?	Not specified in NBCC		4	3002.2	Up to 2 units for FFL	BSLJ-EO 129.13.3.4
(b)	Must there be a solid dividing wall between FFL and rest of lifts in a common well?	Yes	3.2.6.5 (3)	Yes	3007.5	Yes	BSLJ-EO 129.13.3.4
1.9	What is the required ambient temperature range?	As specified by elevator manufacturer/installer		As specified by elevator manufacturer/installer			
(a)	In machine room?					+5 °C~+40 °C	JIS A 4307-1:2019 0.4.16 BSLJ-EO 129.9.3 MLIT-N No.1413(2000) and its interpretation
(b)	In machinery space?					+5 °C~+40 °C	Same as above
(c)	In control room?					+5 °C~+40 °C	Same as above
(d)	In control space?					+5 °C~+40 °C	Same as above
(e)	In lift well					+5 °C~+40 °C	Same as above
(f)	On lobby side of landing doors					Not specified	
1.10	What is the maximum time(s) for FFL to travel from fire service access level to top floor?	60 sec	3.2.6.5 (2)	Not specified		60 m/min(1 mps) or over and also approx. 60 seconds from FSAL to highest floor	BSLJ-EO 129.13.3.11
1.11	Must a single FFL serve all floors of a building including those with sky lobbies?	Yes	3.2.6.5 (2)	Yes	3007.1	No, one FFL may not need to service all floors. If the number of landing on the ground floor is 20 or more, multiple FFLs may share, but in that case, one statutory unit with multiple FFLs that can service all floors is considered. And number of installed FFL is in accordance with the maximum floor area.	BSLJ-EO 129.13.3.3.1 (e)
1.12	What fire test standard is used for lift landing doors?	ULC S104 UL 10B	3.2.6.5 (3)	UL 10B NFPA 252	716.2	Landing doors shall be satisfied according to below structural requirement " FFL's entrances shall be made of or covered with incombustible materials."	JEAS-207A BSLJ MLIT-N No.1428 (H12)
1.13	Do lift landing doors of FFLs have to be thermally insulated?	No		No		No	

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Table A.2 *(continued)*

	Country →	Canada		United States		Japan	
Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
1.14	What is minimum fire rating (minutes) of lift landing doors for FFLs?	90	3.1.8	90	716.2	Not specified FFL lobby shall be enclosed as fire preventive section with 60 min duration, so FFL landing door itself not to be required specific fire rating.	BSLJ-EO 129.13.3.3.3
1.15	Do the lift landing doors resist smoke penetration?	No		No		Yes, but It is not required if the construction prevents smoke from penetrating the lift lobby	BSLJ-EO 112.14.2 (b)
1.16	Are liquid based sprinklers permitted?	Yes	3.2.2.18	Yes	903	---	
(a)	In the machine room	Yes		Yes		Yes(Not mentioned)	
(b)	In machinery spaces	Yes		Yes		Yes(Not mentioned)	
(c)	In control rooms	Yes		Yes		Yes(Not mentioned)	
(d)	In control spaces	Yes		Yes		Yes(Not mentioned)	
(e)	In the hoistway top	Yes		Yes		Yes(Not mentioned)	
(f)	In the lift lobby	Yes		Yes		Yes, but depends on the building design(Not mentioned)	
(g)	In the hoistway pit	Yes		Yes		Yes(Not mentioned)	
1.17	Are liquid based sprinklers required?	Yes	3.2.2.18	Yes	903		
(a)	In the machine room	Yes		Yes		No	
(b)	In machinery spaces	Yes		Yes		No	
(c)	In control rooms	Yes		Yes		No	
(d)	In control spaces	Yes		Yes		No	
(e)	In the hoistway top	Yes		Yes		No	
(f)	In the lift lobby	Yes		Yes		(This question depends on building design. So we as lift industry person would like to suspend to answer.)	
(g)	In the hoistway pit	Yes		Yes		No	
1.18	Are liquid based sprinklers prohibited?	No		No			
(a)	In the machine room	No		No		No(Not mentioned)	
(b)	In machinery spaces	No		No		No(Not mentioned)	
(c)	In control rooms	No		No		No(Not mentioned)	
(d)	In control spaces	No		No		No(Not mentioned)	

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Table A.2 *(continued)*

	Country →	Canada		United States		Japan	
Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
(e)	In the hoistway top	No		No		No(Not mentioned)	
(f)	In the lift lobby	No		No		No(Not mentioned)	
(g)	In the hoistway pit	No		No		No(Not mentioned)	
1.19	Is power to the lifts removed if sprinklers are activated in the machine room and/or hoistway?	No	CEC	General – Yes FSAE - No	3005.5 3007.4	Not mentioned (Usually there is no sprinkler installed in the machine room and well, so no mention in relating codes)	
1.20	Are there requirements to prevent water entering the hoistways of lifts used for evacuation?	No		Yes	3007.3	No (Currently, there is no relevant code in Japan because non-FFL elevators are not supposed to be used for evacuation. However as FFL, there is a related standard shown on the right.)	JEAS-A505B 3.2 Recommendation for building design; Lobby of FFL should be constructed not entering water into the well.
(a)	If yes, how is the water protection implemented? Is it a building design requirement or a lift requirement?			Approved Building Design		Not mentioned	
1.21	What is the maximum floor height in a blind hoistway?	Max 11 m between doors	A17.1/B44 2.11.1.2	Max 11 m between doors	A17.1/B44 2.11.1.2	The maximum floor height is not stipulated, but the maximum distance between emergency landing entrances for landing at the nearest floor during an earthquake is stipulated as 42 m at maximum. In addition, the well rescue exit for passengers is specified within 10 m.	MLIT-N No.1536 (H12)
1.22	Can FFLs also be used for moving goods (freight)?						
(a)	As a single lift in a residential building?						
(b)	As part of a group installation?						
1.23	Are there any situations where Firefighter's Lifts or lifts used for evacuation are required to have machine room, i.e. they are not permitted to be MRL lifts?	No		No		No, MRL are permitted but some requirements in the answer of Q1.23 shall be satisfied. There is no provision for elevator evacuation.	MLIT-N No.601 (H28)

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Table A.2 *(continued)*

	Country →	Canada		United States		Japan	
Number	**Question**	**Answer**	**Code Reference**	**Answer**	**Code Reference**	**Answer**	**Code Reference**
1.24	In the case of MRL lifts used as Firefighter's Lifts or for evacuation, are there specific requirements for devices used for rescue operations to be located at a specific location?	No - Same for all lifts		No - Same for all lifts		It is necessary to install major units such as drive unit & controller above the lowest floor level	MLIT-N No.601 (H28) Clause 1.3.(c)
1.25	Is pressurization of the hoistways, stairways and lobbies required or permitted?	Permitted		Permitted	909	Permitted for lift lobby Not specified for lift well and stairway	
(a)	If yes, is there a limit on pressurization differentials at lift doors?	No		No		Not mentioned	
2.0	**Firefighters' lift (elevator) basic requirements**						
2.1	What is minimum rated load (kg)?	900 kg	3.2.6.5 (2)	3,500 pounds (1588 kg)	403.6.1	1 150 kg	BSLJ-EO 129.13.3.6
2.2	What are minimum car sizes (mm)?	2,2 m^2	3.2.6.5 (2)	Elevator car to be of such a size and arrangement to accommodate an ambulance stretcher 24 inches by 84 inches (610 mm by 2134 mm) with not less than 5-inch (127 mm) radius corners, in horizontal, open position	3002.4		
(a)	Internal width	Varies – See Table E-1 (1370 min.)	A17.1/B44 E-8	Varies – See also ICC A117.1	ICC A117.1 – 407.4.1	1800 mm	BSLJ-EO 129.13.3.6
(b)	Internal depth	Varies – See Table E-1 (1295 min.)	A17.1/B44 E-8	Varies – See also ICC A117.1	ICC A117.1 – 407.4.1	1500 mm	BSLJ-EO 129.13.3.6
(c)	Internal height	2025	2.14.2.4	2025	2.14.2.4	2 300 mm	BSLJ-EO 129.13.3.6
2.3	What are minimum entrance sizes (mm)?		A17.1/B44 2.11.1.1		A17.1/B44 2.11.1.1		
(a)	Width	900	E-5	900	A117.1 – 407.4.1	1 000 mm	BSLJ-EO 129.13.3.6
(b)	Height	2030	2.11.1.1	2030	2.11.1.1	2 100 mm	BSLJ-EO 129.13.3.6
2.4	Can the FFL car have decorative finishes?	Yes	2.14.2	Yes	2.14.2	Yes	
(a)	If yes, to what standard?	A17.1/B44	2.12	A17.1/B44	2.14.2	Make or cover with incombustible material	BSLJ-EO 129.13.3.12 MLIT-N No.1428 (H28)
2.5	Does the lift car have:						

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