

CIBSE Lifts Group



Wednesday 2 February 2022

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Firefighters lifts

Update



EN 81-72:2020 firefighters lifts

Addressed European Commission “HAS” comments

- Annex ZA – relationship between clauses and EHSRs

Identical technical requirements to EN 81-72:2015

Now cited to give a presumption of conformity:

- as a **harmonised** standard to Lift Directive
- As a **designated** standard to **Lifts Regulations**

EN 81-72:2015 will:

- be withdrawn as a standard 31 July 2022
- not be harmonised/designated after 27 Jan 2023

Full revision to address remainder of EC requirements



BS 8899 - Improvement of existing lifts for use by fire service

BS 8899:2016; *Improvement of fire-fighting and evacuation provisions in existing lifts – Code of practice*



Not appropriate to improve to “fire-fighting lift standard”
 Fire-fighting lift should conform to latest BS 5588-5:2004
 BS 5588-5:2004 references BS EN 81-72:2003 (firefighters lift)

Firefighters lift – must conform to BS EN 81-72 – fit pictogram

BS 8899 recommends improvement towards BS EN 81-72:2015
 – fix label in BS 8899 (not pictogram unless lift to BS EN 81-72)

Anything else is a modernized lift for fire service use
 – fix label in BS 8899 (not firefighters lift pictogram)

FEATURES OF LIFT FOR FIRE SERVICE OPERATIONS

Secondary power supply	<input type="checkbox"/>	Communication system	<input type="checkbox"/>
Water management and protection	<input type="checkbox"/>	Fire-fighting recall switch	<input type="checkbox"/>
Fire-fighting car and door controls	<input type="checkbox"/>	Car emergency trapdoor	<input type="checkbox"/>

[Improvement of existing lifts for use by the fire services](#)

BS 8899 - Identifying lifts for fire service use/ evacuation lift types LEIA

Why? Building responsible person likely to need help identifying what type of fire operation for their lifts

Is this complicated?

Lifts for fire service use might be one of:

- *firemens lift*
- *fire-fighting lift*
- *firefighters lift*
- *modernized lift for fire service use*

+ Evacuation lifts

+ Fire recall (remove recall and take lift out of service)

[Identifying lifts for fire service use & evacuation lift types](#)

Evacuation lifts

Background Latest draft standards



Evacuation lifts



Many pieces of work:

- Grenfell Tower Inquiry
- Building Safety Bill
- New Fire Safety Order (England) – watch this!
- Approved Document B (AD B) building regs – *research on means of escape (including lifts)*
- **London Plan draft guidance: “BS EN 81-76 once published, BS 9991/ BS 9999”**
- **Draft EN 81-76 - new public enquiry**
- **Draft BS 9991 - new proposals for evacuation lifts for residential buildings**



THE
LONDON
PLAN



THE SPATIAL DEVELOPMENT
STRATEGY FOR GREATER LONDON
MARCH 2021

London Plan 2021



New London Plan came into force in March 2021:

- policy D5 (inclusive design): minimum one evacuation lift per core (or more subject to capacity assessments)
- References fire safety guidance “*pre-consultation, for information*” which was revised in May 2021
 - Refers to driver assisted, automatic, and remote evacuation operation from prEN 81-76
 - Relevant British Standards: “*BS EN 81-76 when published, BS 9991, BS 9999*”

London Plan – evacuation lifts guidance

Until BS EN 81-76 published or other standards revised, follow BS 9991:2015, BS 9999:2017

Draft EN 81-76 - background



Work started at CEN in 2014(!) to draft EN 81-76;
Evacuation of persons with disabilities using lifts

- Despite CEN TS 81-76, little convergence across Europe
- Calls for disabled persons to be able to self-evacuate

Draft for Public Comment – 7 November 2019

Work “timed out” so new public enquiry 2Q2022

No guarantee of content of final EN 81-76 or even if BSI would publish

BS 9999:2017



BS 9999:2017, Annex G remains the only British Standard describing an evacuation lift

Fire safety in the design,
management and use of
buildings – Code of practice

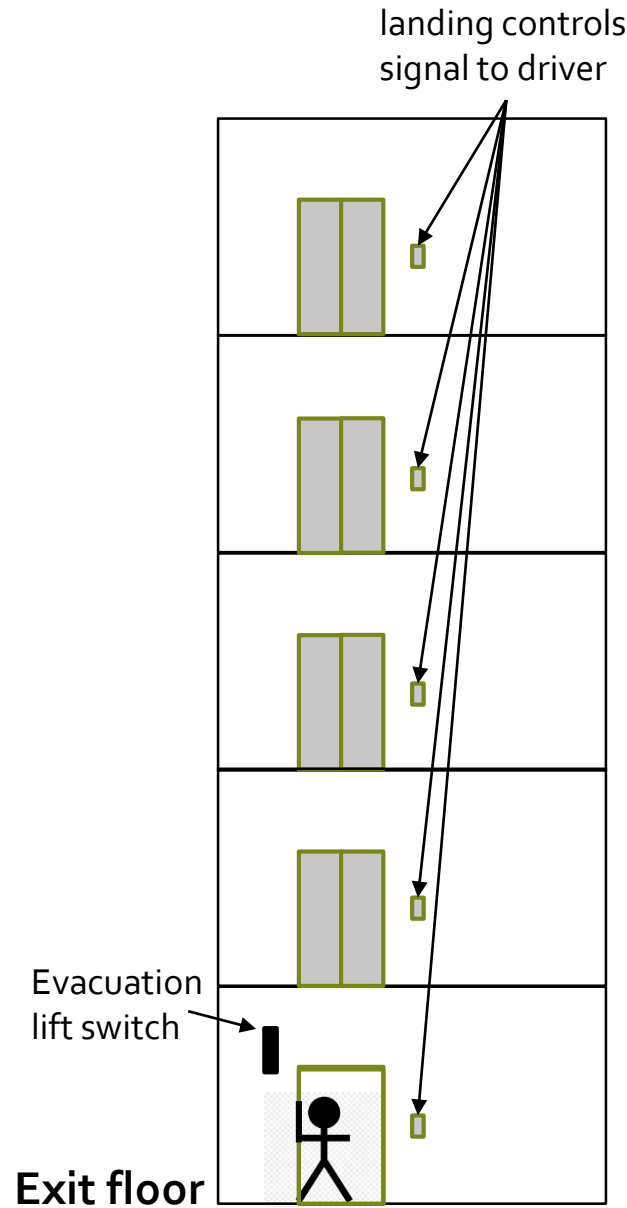
LEIA: Evacuation lift standards

Draft EN 81-76 – optional modes LEIA

The evacuation lift would have to have at least one of three optional modes:

- **Driver assisted evacuation** - similar to but with further developments from CEN TS 81-76/ BS 9999
- **automatic evacuation** – after fire alarm activation:
 - lift recalls to exit floor to allow passengers to exit
 - serves highest priority landing call/shuttles to exit
- **remote control** – control of lift car as for assisted evacuation mode from a control point remote from the lift car *Note: BSI commented against*

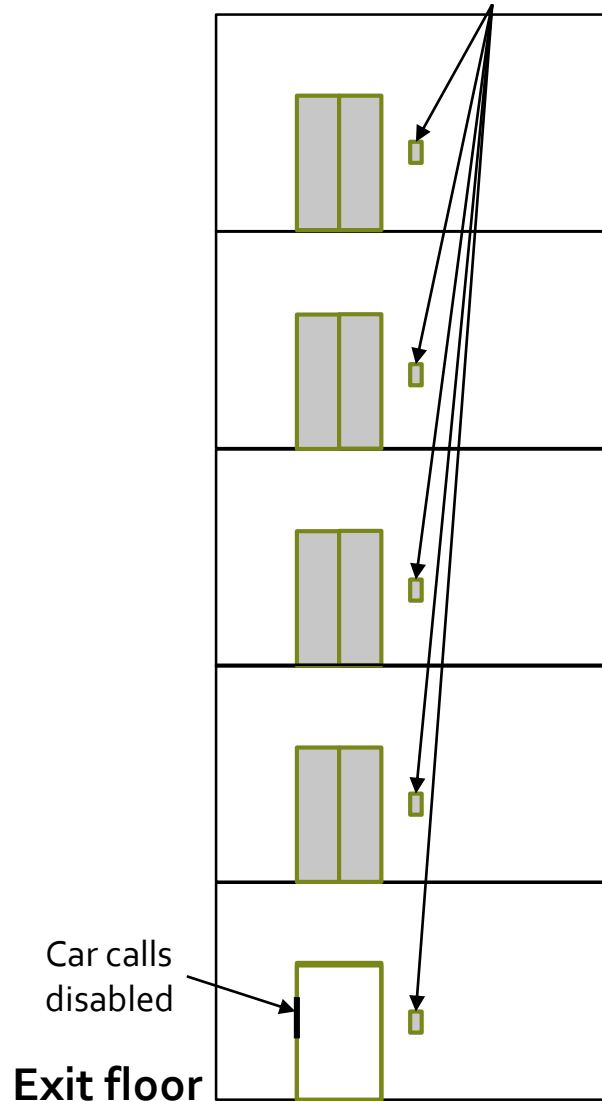
Driver assisted evacuation



- Similar to BS 9999 Annex G operation
 - Lift recalls to exit floor on fire alarm or from evacuation lift switch
 - Rescue team takes control of lift using evacuation lift switch
 - Lift car controlled from car controls only
 - Landing controls used to signal driver
- + Driver/rescue team can respond to site conditions
- Lift not available until driver takes control

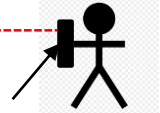
Automatic evacuation operation LEIA

Lift responds to landing controls
– priority based on strategy



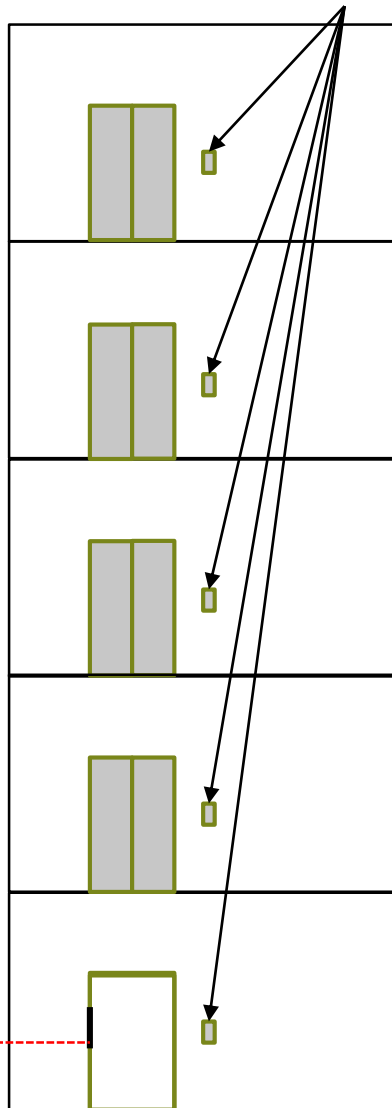
- Lift recalls to exit floor and then may continue in service from BMS signal
- Lift serves landing calls – priority based on evacuation strategy e.g. evacuate the fire floor first, then two floors above and two floors under, and then rest of the building; or the distance from the exit floor with the furthest landing call getting highest priority
- + Lift could be used – not needing driver
- Building systems to ensure lift is safe to use?
How to prioritise disabled users?
Guidance on call prioritization?
Suitable for buildings with transient users?

Remote assisted evacuation



landing controls signal
to remote panel

remote evacuation control
panel and assistant



- Lift recalls to exit floor on fire alarm
 - Assistant takes control of lift using remote control panel
 - Communication system between remote panel, lift car and each landing
 - Video monitoring at remote panel of lift car and each landing
- + Might be useful where no team on site
- Lift not available until driver takes control
- Security of link to remote panel?
- Competence/training of remote assistant?

Exit floor

BS 9999:2017



Fire safety in the design,
management and use of
buildings – Code of practice

BS 9999:2017; *Fire safety in the design, management and use of buildings – Code of practice*

- fire safety of buildings *except* residential and will be revised after BS 9991 has been revised
- BS 9999:2017, Annex G - lift with additional protection for the managed evacuation of disabled persons

BS 9991:2015



Fire safety in the design,
management and use of
residential buildings –
Code of practice

BS 9991:2015; *Fire safety in the design, management and use of residential buildings – Code of practice*

- *Initial comments - call for automatic operation*
- *Draft for public comment (DPC) - driver operated and option of automatic evacuation operation (similar to prEN 81-76)*
- *Huge number (1866!) of DPC comments being worked through*

Final content of BS 9991 for evacuation lifts uncertain

Evacuation using non evacuation lifts

BS 9999:2017, 45.9:

- *“a lift that is not explicitly designed for evacuation may be used for evacuation, provided that it **provides the same functionality as an evacuation lift**”*
- recommends fire risk assessment should be undertaken to evaluate whether the lift meets recommendations in Annex G.

Fire risk assessment - responsibility of the building designer who might request input from lift contractor on lift feasibility

BS EN 81-73 has been specified for “self-evacuation lifts” – this is inappropriate because:

- **BS EN 81-73 removes the lift from service**
- **BS EN 81-73 scope excludes lifts used for evacuation**

BS 9991:2015



BSI Standards Publication

Fire safety in the design,
management and use of
residential buildings –
Code of practice



BS 9999:2017



BSI Standards Publication

Fire safety in the design,
management and use of
buildings – Code of practice

Evacuation lifts - what next?

BS 9991 revision – comment resolution

prEN 81-76 draft for public comment

- expected May 2022
- we should comment
- standard published in 2023?
- use National foreword and Annex

BS 9999 revision will follow BS 9991 revision

***Until these are published, BS 9999:2017
Annex G is the only evacuation lift described
in British Standards***

Evacuation – existing buildings

Michelle Agha-Hossein (BSRIA, Actuate UK)
at COP26: *80% of buildings that we have
today will still be in use in 2050*

Improving building safety, like sustainability,
will be primarily a challenge of upgrading
existing buildings

BS 9991, BS 9999, any future BS EN 81-76
will set a benchmark for new buildings

Existing buildings might be more interesting!
Revision of BS 8899 to provide guidance?



Thanks for listening

Any questions?

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