LEGISLATION AMENDMENTS IN 2021 AND 2022

Presented by :

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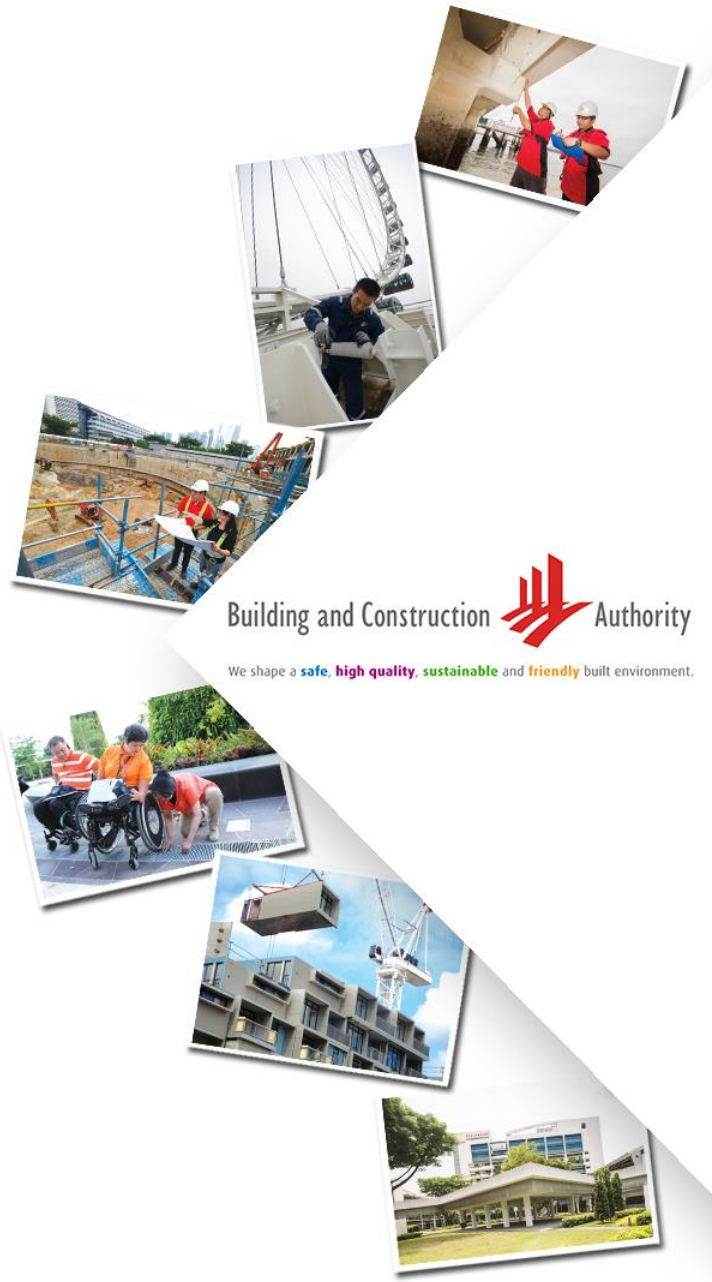

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Scope of Presentation






1) Recap of BC Act amendments in 2020

2) Fixed installations and exclusions

3) Fixed installation plan submission

4) Type testing of lifts

5) Other key BC Regulations amendments in 2021 and 2022

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BC Act Amendments in 2020






Key Requirements

1. Fixed installation plan submission
2. Type testing of lifts
3. Registration of fixed installation contractors
4. Reporting of safety incidents and safety risks
5. Retrofitting of fixed installations
6. Professionals- Specialist PEs, L&E inspectors, Technicians
7. Progressive wage model
8. Mechanised car parking systems

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Fixed Installations






Definition in Amended BC Act

"fixed installation" means any of the following machine-powered installations:

(a) an escalator;

(b) a lift;

(c) a mechanised car parking system,

and includes any supporting structure, machinery, equipment, apparatus and enclosure used or designed for use for operating a fixed installation

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Exclusions






Lifts Not Regulated Under Building Control Regs:

a) Lift designed to be used solely for the carriage, stacking, loading or unloading of goods or materials

(Note: Lifts under a) are identified by the control buttons being outside the lift car)

b) Hoist designed to be used solely for lifting or feeding material directly into a machine

c) Stage or orchestra lift

d) Lift or hoist provided, in connection with any building which is being constructed, for the use of persons employed in the construction or for carrying materials used in the construction

e) [New] Lift or hoist affixed, attached or used in respect of any erection or equipment that is not a building (eg. cranes and metal tanks), intended for use solely by persons performing work at the erection or using the equipment

f) [New] a lifting platform not used for the transport of passengers, such as mast climbing work platform, building maintenance unit, suspended scaffold, mobile elevating work platform, and storage and retrieval system.

The Requirements have not been finalised

Cargo Lifts






For transport of goods, materials and <u>people</u>

- Controls are located inside the lift car
- Regulated by BCA
- To comply with BMSM (Lift, Escalator and Building Maintenance) Regulations 2016 and SS550

VS

<u>Solely</u> for transport of goods or materials

- Controls are located outside the lift car
- Regulated by MOM (in workplaces)

The Requirements have not been finalised

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Exclusions






Lifts Not Regulated Under Building Control Regs: *(Continued)*

g) Lift used as part of an amusement ride, as defined in the Amusement Rides Safety Act (Cap. 6A)

h) stairlift or a vertical platform lift that —

i) has a maximum vertical displacement of less than 1,000 mm during operation;
ii) exerts a maximum downward force of less than 150 N when the lift is in downward operation; and
iii) serves a single residential unit.

MCPS Not Regulated Under Building Control Regs:

a) Mechanised car parking systems used for the purpose of storage of vehicles and not for parking

b) Vehicle warehouse

c) Vehicle showroom

d) Vehicle workshop lifting device, used for maintenance

The Requirements have not been finalised

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Fixed Installation Plan Submission






Requirements

- Developer to appoint Qualified Person (QP), to prepare and submit fixed installation plans (hoistway plans, machine room plan etc), fixed installation data and other technical documentations to BCA for approval.
- Designs are to comply with the prevailing code requirements.
- Installation contractor to provide type test reports and certificates from acceptable certification body to the QP, as part of required technical documentations for submission to BCA.
- Key requirement – Type-testing requirements for safety components and entire equipment

Objectives

- Ensure **upfront compliance** with more thorough checks on design
- **Minimise abortive works and delays** due to non-compliances found later

The Requirements have not been finalised

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Fixed Installation Plan Submission






Engagement Sessions

- Since 2019, about 10 engagement sessions have been held with contractors and SPEs, to seek their comments on fixed installation plan submission requirements.

- Information to be provided in fixed installation plan submission have been developed, with inputs received during the engagement sessions.

The Requirements have not been finalised

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Fixed Installation Plan Submission






Key Information to be Provided in Lift Plans

(a) Site plan and floor plans (show location of machine rooms and lift shafts, plan and elevation views of access path to machine room).

(b) Machine room layout plan (both plan and elevation views, and should include entrance dimensions). Should include space around the controller and machinery to meet the minimum space requirement.

(c) Hoistway /shaft and lift car cross sectional plans, showing:

(i) Car position at top floor- Car top clearance
(ii) Car position at bottom floor - Car bottom clearance
(iii) Floor plan of occupancy space below pit (e.g. underground carpark)
(iv) Dimensions and position of Ladder
(v) Buffer stroke

The Requirements have not been finalised

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Fixed Installation Plan Submission






Key Information to be Provided in Vertical Platform Lift Plans

(a) Location and site plans.

(b) Equipment layout (elevation and plan view) to show car and lift way enclosure.

(c) Test certificate of programmable electronic systems in safety related applications for lifts (PESSRAL) component (if used), its report and test procedures.

The Requirements have not been finalised

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Fixed Installation Plan Submission






Key Information to be Provided in Stairlift Plans

(a) Location and site plans.

(b) Equipment layout (elevation and plan view) to show carriage size and clearances.

(c) Test certificate of programmable electronic systems in safety related applications for lifts (PESSRAL) component (if used), its report and test procedures.

The Requirements have not been finalised

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Fixed Installation Plan Submission






Key Information to be Provided in Escalator Plans

(a) Location and site plans.

(b) Design plans showing <u>safety zone, clear height, and structural support</u>.

(c) Factory acceptance test reports.

(d) Programmable electronic systems in safety related applications for escalators (PESSRAE) system test procedures.

The Requirements have not been finalised

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Fixed Installation Plan Submission






Key Information to be Provided in MCPS Plans

(a) Location or site plan, plan view, elevation view, sectional view of the MCPS, including:
- (i) Location and layout of the site
- (ii) Location of the MCPS marked in colour or otherwise
- (iii) Indication of the entrance and exit of the vehicle, user exit door and emergency door in the plan view
- (iv) Indication of components of the MCPS such as the number of stacks, the entrance level, the storage area in the elevation and sectional views

(b) Layout drawing of transfer area indicating the location of the vehicle and the size of the transfer area, including length, width and height of the transfer area.

(c) Drawing showing the location and dimension of the anti-fall device.

(d) Position and coverage of sensors in the transfer area.

The Requirements have not been finalised

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Fixed Installation Plan Submission






Key Information to be Provided in MCPS Plans

(e) Location and position of the control panel which contains the press to hold button, start and stop buttons and emergency-stop button.

(f) Location and coverage of door protective device.

(g) Documents with description on MCPS's concept of operation (eg. operation and maintenance.

The Requirements have not been finalised

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Type Testing of Lifts






Type test reports (components & product test reports) and certificates of lifts[NOTE] to be submitted for:

a. Lift model

b. Lift Safety Components:

i. Car/Landing Door Locking Device

ii. Safety Gear

iii. Overspeed Governor

iv. Buffers

v. Safety Circuits containing Programmable Electronics Systems in Safety Related Applications for Lifts (PESSRAL)

vi. Safety Circuits containing Electronic Components

vii. Ascending Car Overspeed Protection Means (ACOP)

viii. Unintended Car Movement Protection Means (UCMP)

ix. Rupture Valve/One Way Restrictor (for Hydraulic Lifts)

NOTE: This refers to lifts other than vertical platform lifts and stairlifts only.

The Requirements have not been finalised

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Type Testing of Lifts






- For safety components (excluding PESSRAL)

Must be type tested in accordance with EN81-50, and certified by Certification Bodies accredited by State authorities such as EU and China.

- For PESSRAL

Must be type tested in accordance with EN81-50, and certified by Certification Bodies accepted by BCA.

- For Lift Model

The lift must be type tested to certify its compliance with SS550 or EN81-20, and certified by Certification Bodies accepted by BCA.

Note: Details of the acceptable certification bodies will be announced on a later date, when the Regulations are ready.

The Requirements have not been finalised

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Key BC Regs Amendments in 2021/2022






A) Design and installation-related

1. Major alteration or replacement works

- Major A/R works include changes in the design or upgrade of components in fixed installations that are likely to have impact on the safety. Plan submission and approval by BCA are required before the works can be carried out.
- Current major A/R works in the BMSM (Lift, Escalator and Building Maintenance) Regs have been expanded, to include a wider scope of works and to provide greater clarity to the industry.

The Requirements have not been finalised

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Major Alteration or Replacement Works






Lift

(a) Adding, changing or removing any safety device of a lift, including ascending car over speed protection, unintended car movement protection, safety gear, car/landing door lock, buffer, governor, rupture valve of hydraulic lifts

(b) Adding or changing any programmable electronic systems in safety related applications for lifts (PESSRAL) hardware or software

(c) Adding or changing the mass and internal dimensions of a lift car, including lift car finishing

(d) Changing the rated load/maximum passenger capacity or speed of a lift

(e) Changing the travel distance of a lift

(f) Changing the lift control operation (including changing the software, controller, driving machine or brakes)

(g) Changing the number, type or size of the hoisting ropes supporting a lift car or its counterweight

(h) Changing the size of the guide rails of a lift

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Major Alteration or Replacement Works






Lift

(i) Changing the lift landing door system, lift car door system and their control interfacing (door entrance protection are excluded)

Note:

i) Door system consists of door motor, door hanger, door track, door closer, door panel, switches, interlocks, electrical contacts and linkages.

ii) Control interfacing means any interface between the door motor and controller, and interface between the controller and sensors related to the door system.

iii) Door entrance safety protection are devices that can detect obstructions between the door panels (e.g. photo cell, safety edge, light curtain and images sensor).

(j) Changing the pit depth and overhead clearances

(k) Changing the design of traction sheave

(l) Changing the roping configuration and compensation system

(m) Changing the number of landings served by the lift car

(n) New occupancy space being provided below lift pit

The Requirements have not been finalised

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Key BC Regs Amendments in 2021/2022






A) Design and installation-related

2. Minor alteration or replacement works- submission of record plans

Note: The works must also comply with the relevant standards (eg. SS550) as well as the relevant agencies' requirements (eg. SCDF, LTA, URA, BCA's barrier free access requirements, etc).

Examples

a) Change in naming of equipment, eg. Lift A to Lift 1.

b) Change in area of lift machine room.

c) Change in position of equipment.

d) Change in number of car park lots in MCPS.

The Requirements have not been finalised

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Key BC Regs Amendments in 2021/2022






A) Design and installation-related

3. Test reports for 1st PTO application following installation or major A/R works

- During examination, inspection and testing before 1st application of PTO, SPE is to ensure that the installation is in compliance with code and approved plans, and the testing and commissioning results are in compliance with code.
- SPE is to submit test reports to document these checks, along with their certification during 1st PTO application.
- Details of the test reports will be provided in BCA's submission guide.

The Requirements have not been finalised

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Key BC Regs Amendments in 2021/2022






B) Maintenance and operation-related

1. Owner to ensure that contractors carry out periodic maintenance in accordance with the relevant standards, requirements, and prescribed frequency.
   - To ensure that the necessary maintenance, repair and replacement works are carried out, and maintenance done according to the prescribed frequency

2. Contractor to transfer keys or passwords to owner for access and maintenance of fixed installation, no later than 7th day after termination of maintenance agreement.

The Requirements have not been finalised

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Key BC Regs Amendments in 2021/2022






B) Maintenance and operation-related

3. Duties of SPEs

- Responsibility of the examination, inspection and testing (EIT) will rest with the SPE. SPE has to take ownership of the EIT results, and certify the EIT.
- To ensure that the equipment are installed in accordance with approved plans and requirements, SPE to conduct examination and inspection (EI) of fixed installations, after the works are completed. SPE also conducts EI during annual renewal of PTO.
- Contractor to conduct testing (T) of fixed installations under the supervision of the SPE, after the works are completed and during annual renewal of PTO.
- Check for compliance with maintenance outcome requirements during annual EIT.
- Notify BCA of unauthorised alteration or replacement works done on the fixed installation during annual EIT.

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Key BC Regs Amendments in 2021/2022






B) Maintenance and operation-related

4. Standardisation of requirements- to comply with both manufacturer's recommendations and design standards.
   - Examination, inspection and testing
   - Periodic maintenance
   - Examination, inspection and testing of major A/R works

5. Maintenance frequencies for lifts serving single residential units.
   - Owners could consult their lift contractors and manufacturers to work out a maintenance regime (including the frequency of maintenance) for their lifts to be fit for operation, based on their needs.
   - PTO and annual inspection by SPE is still required

The Requirements have not been finalised

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Key BC Regs Amendments in 2021/2022






C) General

1. Reporting safety risks (defects) in building products (eg. components in lift, escalator and MCPS)

   Examples

   a) ACOP

   b) UCMP

   c) Safety gear

   d) Lift car and landing door locking device

   e) Overspeed governor and linkages with safety gear

   f) Escalator control system

   g) Escalator braking system

   h) MCPS load carrier

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Key BC Regs Amendments in 2021/2022






C) General

2. Reporting safety incidents

   Examples

   a) Death or injury

   b) Fire or smoke sighted from equipment

   c) Upriding escalator suddenly reversing direction

   d) Failure of brakes in MCPS

3. Particulars of reporting for safety risks and safety incidents

   Examples

   a) Safety risks- building products (ie. eg components) used and the associated risks

   b) Safety incidents- fatality, injury or property damaged involved

The Requirements have not been finalised

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Thank You