

Annex B: Response to feedback on Proposed Legislation in Relation to Fixed Installations (“FI”)

Lift, Escalator and Mechanised Car Parking System (MCPS)

1) Plan submission for Fixed Installation Works		
Proposed Amendments:	Compilation of Feedback Received:	BCA’s Response:
<p><u>FI Plan submission requirements</u></p> <p>a) <i>No one is allowed to carry out any fixed installation works (i.e. lift, escalator or MCPS installation or major alteration or replacement works) before the Commissioner of Building Control has approved the plans of the fixed installation works. The developer or fixed installation owner must apply for such approval by submitting plans that have been prepared, reviewed and certified by a qualified person appointed by the developer or fixed installation owner.</i></p>	<p><u>General comments</u></p> <ul style="list-style-type: none"> • Query on the rationale and necessity of this requirement (besides to identify potential issues at early stages), as such additional requirements will add to the demand for Qualified Person (Fixed Installation) (QP(FI)), which are limited in numbers. • Feedback on the need for a clear process of managing post-approval changes throughout the life cycle of the FI equipment to ensure that intellectual property is protected. <ul style="list-style-type: none"> i. Will BCA consider including regulatory requirements for FI contractor to disclose proprietary information on FI system to the QP(FI) appointed by developer/owner for plan submission? ii. Suggestion to require submission of certificates or Declaration of Conformity (with detailed reference made to test reports) without any company confidential or proprietary information. 	<ul style="list-style-type: none"> • The implementation of mandatory FI plan submission aims to ensure more thorough checks at the design stage. These upstream control (e.g. identifying potential issues at early stages) will help to ensure upfront compliance which will minimise abortive works and improve downstream operation safety of the fixed installation. • Parties could work out an agreement between themselves to protect the relevant intellectual property. If a Qualified Person (Fixed Installation) (QP(FI)) requires information beyond the submissions to assist him in properly certifying compliance of the FI, he should approach the FI contractor for such information. • We also wish to clarify that documents submitted to BCA for plan submission will not be freely available to the public domain.

	<p><u>Duty of appointing a QP for certification of FI plans</u></p> <ul style="list-style-type: none"> To clarify on whether the following parties can appoint the QP(FI) on behalf of the developer or FI owner: <ul style="list-style-type: none"> i. Lead Consultant (Architect) or the M&E Consultant of the building project ii. L&E or MCPS Contractor 	<ul style="list-style-type: none"> The appointment of QP(FI) can be performed by the developer/owner, the builder of the building works (if the developer/owner does not appoint the QP), or the FI contractor (if both the developer/owner and builder do not appoint the QP).
	<p><u>Duty of submitting FI plans to CBC</u></p> <ul style="list-style-type: none"> Query on whether the FI plan can be submitted by a PE(Mechanical) or PE(Electrical) after the plan is prepared, reviewed and certified by a QP(FI). Query on the difference in responsibility between the QP(FI) who submits the FI plan and the one who endorses the certification at the end of the installation. Suggestion to place the duty of submitting FI plans on the installer/contractor or manufacturer instead of the developer/owner. 	<ul style="list-style-type: none"> The approval for FI plans should be applied by the developer as it is the developer's intention to carry out such works. This is similar to the approvals for building plans (BP) and structural plans (ST) which are also applied by the developer. In obtaining the approvals, the developer must appoint a QP(FI) to submit the relevant plans, on its behalf, via CORENET to BCA. The QP(FI) who is appointed for FI plan submission will be responsible for the compliance of the design of the FI. The QP(FI) who is appointed to certify for the installation of the equipment will have to ensure that the equipment installed is in accordance with the approved plan, and is tested and commissioned properly.

	<p><u>Details of plan submission</u></p> <ul style="list-style-type: none"> • Request for details on the submission requirements (i.e. details required in the drawings) • Clarifications on FI plan submission procedure <ul style="list-style-type: none"> i. Whether the submission process will be the same as that for building plan, and to be made through CORENET. ii. Whether the plan submission for FI works will be required at the same time as building plan submission. • To clarify on whether FI plan submission is required for the following cases: <ul style="list-style-type: none"> i. Cyclical total lift replacement ii. Vertical platform lifts under the ASME A18.1 code iii. Replacement of lifts parts with the same design and specification iv. Lift-related building works (e.g. lift well construction works) 	<ul style="list-style-type: none"> • All new FI Installations and existing lifts undergoing major alterations or replacements (A/R), after the proposed provisions are made effective, will require plan submissions. BCA will provide guides on the submission processes as well as details on a list of major A/R works. • FI plan is not required to be submitted together with the BP. However, it should be noted that should the fixed installation plan cause a change to the approved BP, the QP(BP) would need to seek approval for amendments to the approved BP where applicable. • FI plans must be submitted and approved before any installation works of the FI commence.
	<p><u>Feedback</u></p> <ul style="list-style-type: none"> • Need to make it explicitly clear that for major A/R involving controller upgrading, ACOP and UCMP must be included in order to comply to the latest safety regulations. Some third parties claimed that when the controller is upgraded while retaining the traction machine, there is no requirement to provide ACOP and UCMP features, such as rope gripper, since the traction machine is retained. 	<ul style="list-style-type: none"> • Any major A/R work submitted for approval must comply with the latest standard. The law however does not apply retrospectively for the other components that are not modified/replaced. • Following any major A/R works, the QP(FI) appointed for the works must ensure that the works are carried out in accordance with the approved plans and recommission (including carrying functional test) the equipment to ensure that it can be operated properly and safely.

	<ul style="list-style-type: none">• For total replacement of lift, since the existing shaft structure construction remains unchanged, the pit depth and overhead clearance should comply to the previous code, SS550:2009 without having to go through the onerous process of waiver application to BCA.• To require additional assessment and functional testing, or to require the replacement of all inter-related safety components (e.g. Overspeed Governor and Safety Gears) during a major A/R to ensure interoperability, as it is difficult to ensure the safe functioning and interoperability of a system made up of a mixture of old and new safety components.• In cases of major alteration, modernization or (partial) replacement works, all associated safe working provisions should be improved at the same time and shall comply (as much as reasonably possible) to the latest standards.	
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<p><u>Type Testing Requirement</u></p> <p>b) <i>For lifts, as part of plan approval, type testing certificates are required to be submitted. These type testing certificates will have to be issued by recognised certification bodies, after they have carried out type testing for the following lift safety components and the entire lift model. The certification bodies will be prescribed in the Regulations.</i></p> <ol style="list-style-type: none"> 1. <i>Car door locking device</i> 2. <i>Landing door locking device</i> 3. <i>Safety gear</i> 4. <i>Overspeed governor</i> 5. <i>Car and counterweight buffers</i> 6. <i>Safety circuits containing electronic components and programmable electronic systems in safety related applications for lifts (PESSRAL)</i> 7. <i>Ascending car overspeed protection (ACOP)</i> 8. <i>Unintended car movement protection (UCMP)</i> 9. <i>Rupture valve/one-way restrictor (for hydraulic lifts only)</i> 	<p><u>Clarifications</u></p> <ul style="list-style-type: none"> • Query on whether the type testing requirement for the “entire lift model” is on top of the type test certification for the list of 9 safety components. • To clarify if type test certificates have to be submitted for both Permit-to-Operate (PTO) application and at the plan submission stage. <p><u>Suggestions</u></p> <ul style="list-style-type: none"> • To include the fire test certificates of lift landing doors under the list of required type test certificates • To require the 5-yearly full-load test of safety gears to be conducted with the lift running at full speed (currently not stipulated in SS550:2020) • To include Approved Body in UK under the list of CB currently available 	<ul style="list-style-type: none"> • Yes. • Type test certificates only need to be submitted at the plan submission stage. • SCDF currently requires the submission of the Certificate of Conformity (CoC) during the Temporary Fire Permit/Fire Safety Certificate application, and this CoC includes the fire test certification already. Hence, lift landing door’s fire test certificates are not included under the submission to BCA. • BCA will forward the suggestion to the Working Group of SS550 for consideration in future review of the standard. • Thank you for the feedback. BCA will review the list of Acceptable Certified Bodies (ACBs).
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	<ul style="list-style-type: none">• To have provisions to cover for lifts with variants (out of the model range specifications) and 'one-off' special design. Type-testing for the entire lift may not be practical for modernisation since not all parts are changed.	<ul style="list-style-type: none">• After the proposed provisions are made effective, all new lifts must be type-tested to ensure that they comply with SS550:2020 or EN81-20. Their safety components must be type-tested in accordance with EN81-50.• In the event a manufacturer decides to modify a type-tested lift model with a new component that is not included in the current model range, the lift with the new component must be type-tested again to comply with SS550: 2020 or EN81-20.
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2) Duties of QP and FI Inspectors during Testing and Commissioning		
Proposed Amendments:	Feedback Received:	BCA's Response:
<p>a) No duty will be imposed on a qualified person and fixed installation inspector (assisting the qualified person) to supervise the fixed installation works i.e. works carried out for installation of a fixed installation.</p> <p>b) At the testing and commissioning stage, the qualified person or fixed installation inspector is required to examine and inspect the fixed installation works and supervise the installation contractor's testing of the fixed installation. The qualified person will then submit his certification to the Commissioner of Building Control that the fixed installation works has been examined, inspected and tested in accordance with the necessary requirements as part of the application for permit to operate the fixed installation.</p> <p>c) In addition, on completion of the testing and commissioning of the fixed installation works, the qualified person is to submit a test report (documenting his checks performed in sub-paragraph b) above) of the fixed installation works as part of the</p>	<ul style="list-style-type: none"> To clarify on the responsibilities of the FI inspector (FII) when assisting QP(FI) in the EIT. To clarify on whether fixed installation contractors can train their own pool of FII for QP(FI) to appoint for assistance (both at T&C and plan submission stages), as QPs may not be familiar with all brands/types of equipment, and will benefit from the knowledge of inspectors who are directly trained under the fixed installation contractor. To clarify if Qualified Person refers to SPE (L&E) or PE(Civil), and who are referred to as fixed installation inspectors. 	<ul style="list-style-type: none"> If an FI inspector is appointed to assist the QP(FI) during T&C, the FI inspector will need to exercise due diligence when conducting the examination (E) and inspection (I) of the fixed installation, and ensure that the testing (T) of the fixed installation is in accordance with requirements. He is responsible for notifying the Commissioner of Building Control should he know of any contravention during EIT, and he is also responsible for the EIT findings which he will be providing to the QP(FI). No, the FI Inspectors will need to be independent from the FI contractor and their associates to avoid any conflict of interest. QPs relating to FI works refer to QP(FI) who are specialist professional engineers in the specialised area of lift and escalator engineering, i.e. SPE(L&E). FI inspectors refer to individuals who meet the registration requirements and are accredited by the Lift & Escalator Inspector Joint Accreditation Committee (JAC) as a L&E Inspector (LEI).

application for a permit to operate the fixed installation. The details of the test report will be provided separately in BCA's submission guide for qualified persons.

3) Registration of FI Contractors

Fixed installation contractors will be required to be registered before they are permitted to perform fixed installation works and maintenance of the fixed installations. To be registered, a person is required to meet the requirements in the following table. In addition, a paid up capital of minimum \$50,000 is required. The registration of fixed installation contractors are tiered as set out below.

Criteria	Lifts		Escalators		MCPS	
	Lift Installation Contractors	Lift Service Contractors	Escalator Installation Contractors	Escalator Service Contractors	MCPS Installation Contractors	MCPS Service Contractors
Manpower	Three P2 or Three T2	Contractors maintaining > 1000 lifts: Three P2 or Three T2	Three P2 or Three T2	Contractors maintaining > 1000 escalators: Three P2 or Three T2	One P0 or One T0	One P0 or One T0
		Contractors maintaining 500-1000 lifts: Two P1 or Two T1		Contractors maintaining 500-1000 escalators: Two P1 or Two T1		
		Contractors maintaining < 500 lifts: One P0 or One T0		Contractors maintaining < 500 escalators: One P0 or One T0		

P2 means a Professional qualification with a degree in Electrical/Electronics or Mechanical Engineering or equivalent or Building Services or equivalent from a recognised institution, with at least 5 years of experience.

P1 means a Professional qualification with a degree in Electrical/Electronics or Mechanical Engineering or equivalent or Building Services or equivalent from a recognised institution, with at least 3 years of experience

P0 a Professional qualification with a degree in Electrical/Electronics or Mechanical Engineering or equivalent or Building Services or equivalent from a recognised institution.

T2 means a Technical qualification with a diploma in Electrical/Electronics or Mechanical Engineering or equivalent or Building Services or equivalent from a recognised institution, with at least 8 years of experience.

T1 means a Technical qualification with a diploma in Electrical/Electronics or Mechanical Engineering or equivalent or Building Services or equivalent from a recognised institution, with at least 5 years of experience.

T0 means a Technical qualification with a diploma in Electrical/Electronics or Mechanical Engineering or equivalent or Building Services or equivalent from a recognised institution, with at least 3 years of experience.

A recognised institution means a university, institution or polytechnic recognised and accepted by:

- i) Professional Engineers Board (PEB)
- ii) Board of Architects (BOA)

For purposes of registering a person as a Professional Engineer under the Professional Engineers Act or registering a person as a Registered Architect under the Architects Act.

Proposed Amendments:	Feedback Received:	BCA's Response:
<See above>	<p><u>Comments</u></p> <ul style="list-style-type: none"> • The proposed system does not improve the lift service contractor registration requirements, hence suggest not to change the current system. However, agree that the lift installation contractor should employ a minimum number of qualified lift installation specialist. 	<ul style="list-style-type: none"> • The proposed registration requirement is a policy change directed at ensuring a progressive raise in the technical competency of the firms to match the amount/type of works that they wish to take on, for both service and installation contractors.

<p><See above></p>	<p><u>Queries</u></p> <ul style="list-style-type: none"> • Query on which qualifications can be considered under T0. • To clarify how the new registration requirements will reconcile with current ME09 and RW02 requirements, and how it will affect current contractors especially if the current contractors are not able to meet the manpower requirements. • To clarify on the party allowed to supply new lifts in Singapore – Lift service contractors or installation contractors. 	<ul style="list-style-type: none"> • Technical diploma from local Polytechnic in Electrical/Electronics or Mechanical Engineering or equivalent, or Building Services or equivalent can be considered under T0, T1 or T2. • The new registration requirement does not affect ME09 registration. RW02 registration in the future will be separated into RW02A and RW02B respectively. We will be updating the industry subsequently on the transition plans for the current contractors. • Public sector procurement will still require ME09 registration separately. • Contractors who are unable to meet the criteria would be given a 6 months window to meet the manpower requirement. • Suppliers of new lifts to Singapore do not need to get approval or be registered under BCA. However, the lifts will need to be installed and maintained by BCA-registered installation and service contractor respectively, and in accordance with requirements stipulated under the BC Acts and Regulation such as plan submission, type testing, and maintenance requirements.
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	<p><u>Feedback and suggestions</u></p> <ul style="list-style-type: none"> • Relatively big jump in the new registration requirement from current requirement, especially for contractors with >1000 lift/escalator, hence suggest for a reduction in the number of years of experience required, and to allow for a mixture/substitution of P and T personnel in each tier. • Suggestion: To reduce the maximum number of L&E equipment allowed to be maintained by the small contractors, but increase the number of Technical personnel required • Suggestion: For companies that install/service both lifts and escalators, to allow the designated staff to be in various categories within the company • The minimum Paid-Up Capital for MCPS Contractors should be higher (e.g. \$100,000) to ensure that contractors are established professional industry players which are competent and well-resourced. • This new legislation may create a negative impact for the industry to approach rare senior technical personnel in the market just to fulfil this requirement • PEB/BOA does not have a listing of recognised institution for local polytechnics 	<p>Thank you for the feedback and suggestions, we will review them.</p> <ul style="list-style-type: none"> • To clarify, the proposed manpower requirement would allow for a mixture of P and T personnel. • To clarify, the same technical person could be submitted for different workheads (e.g. RW02A and RW02B) as long as they meet the requirements in each workhead and belong to the same company.
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4) Lifts and MCPS not regulated under the BC Regs		
Proposed Amendment:	Feedback Received:	BCA's Response:
<p><u>Lifts and MCPS that will not be regulated under the proposed subsidiary legislations</u></p> <p><i>The following lifts and MCPSES will not be regulated under the proposed subsidiary legislations under the Building Control Act, as they are not carrying any persons, or not used by the general public, or assessed to pose low risks.</i></p> <p><u>Lifts</u></p> <ol style="list-style-type: none"> <i>1. A lift designed to be used solely for the carriage, stacking, loading or unloading of goods or materials.</i> <i>2. A hoist designed to be used solely for lifting or feeding material directly into a machine.</i> <i>3. A stage or orchestra lift.</i> <i>4. A 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.</i> <i>5. A lift or hoist affixed, attached or used in respect of any erection or equipment that is not a building (e.g. cranes and metal tanks), intended for use solely by persons</i> 	<ul style="list-style-type: none"> To add the phrase “and where the controls are outside of the platform” for item 1 under Lifts – Otherwise, people may interpret that Goods Lifts are included in this exclusion since it is indicated that no passengers are allowed in the lift. 	<p>Thank you for the suggestion, we will review it.</p>

<p>performing work at the erection or using the equipment. <i>[New]</i></p> <p>6. 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. <i>[New]</i></p> <p>7. A lift used as part of an amusement ride, as defined in the Amusement Rides Safety Act (Cap. 6A).</p> <p>8. A stairlift or a vertical platform lift that —</p> <p>(i) has a maximum vertical displacement of less than 1,000 mm during operation;</p> <p>(ii) exerts a maximum downward force of less than 150 N when the lift is in downward operation; and</p> <p>(iii) serves a single residential unit.</p> <p>9. A lift installed in any ship or aircraft. <i>[New]</i></p> <p>10. A lifting device that does not move along any guide or guides. <i>[New]</i></p> <p><u>MCPS</u></p> <p>1. Mechanised car parking systems used for the purpose of storage of vehicles and not for parking of vehicles.</p> <p>2. Mechanised car parking systems installed in vehicle warehouses</p>		
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<p>3. Mechanised car parking systems installed in vehicle showrooms</p> <p>4. Mechanised car parking systems installed in vehicle workshops used for maintenance of vehicles.</p> <p>[New] means the equipment is currently not excluded from the BMSM (Lift, Escalator and Building Maintenance) Regulations 2016.</p>		
5) Reportable Matters		
Proposed Amendment:	Feedback Received:	BCA's Response:
<p><i>Under the amended Building Control Act ("Amended Act"), stakeholders such as the fixed installation contractor, fixed installation owner and qualified person have duties to notify the Commissioner of Building Control of safety risks (defects) in building products in fixed installations, within 72 hours after the person first becomes aware of reasonably suspects that a reportable safety risk has arisen or may have arisen involving the use of a building product.</i></p> <p><u>List of 'Building product' under Lifts</u></p> <ol style="list-style-type: none"> 1. Speed-monitoring and speed-limiting device 2. Device to prevent the car from 	<ul style="list-style-type: none"> • To clarify if the relevant parties will need to report all safety risks (defects) of the safety components even if no incident has occurred. • To clarify if the fixed installation needs to be shut down with the incident site preserved for cases of reportable safety incidents. 	<ul style="list-style-type: none"> • The objective of reporting safety risks (defects) is for early identification and rectification of any design, manufacturing, or installation issues of the fixed installation that may affect its performance, which may pose as inherent safety risks. Hence, it is crucial that such defects are reported even if no incident has occurred, so as to prevent them from occurring in the future. However, do note that normal breakdown of equipment does not classify as reportable safety risk. • For safety incidents, the owner should shut down the fixed installation and preserve the site as soon as he becomes aware of the incident.

<p><i>falling or uncontrolled movements</i></p> <p>3. <i>Device for locking landing doors</i></p> <p>4. <i>Interlocking device to prevent, during normal operation of a lift —</i></p> <p style="padding-left: 40px;">(a) <i>the starting movement of the car, whether or not deliberately activated, unless all landing doors are shut and locked; and</i></p> <p style="padding-left: 40px;">(b) <i>the opening of a landing door when the car is still moving and outside a designated landing zone</i></p> <p>5. <i>Overspeed limitation device (such as an overspeed governor and links with safety gear)</i></p> <p>6. <i>Energy-dissipating buffer</i></p> <p>7. <i>Energy-accumulating buffer that is —</i></p> <p style="padding-left: 40px;">(a) <i>non-linear, and</i></p> <p style="padding-left: 40px;">(b) <i>with damping of the return movement.</i></p> <p>8. <i>Programmable Electronic Safety Systems in Safety Related Applications for Lifts (PESSRAL)</i></p> <p>9. <i>Safety device fitted to jacks of hydraulic power circuits where these are used as a device to prevent falls</i></p> <p>10. <i>Electric safety device in the form of safety circuits containing electronic components</i></p>	<ul style="list-style-type: none"> • To clarify if the fixed installation needs to be shut down with the incident site preserved for cases of reportable safety risk. • Suggested edits: <ul style="list-style-type: none"> (a) Replace item 1 to 'Brake' (b) Remove item 11 → This is because failure or breakdown of electronic components are quite normal 	<ul style="list-style-type: none"> • For safety risks, the owner only needs to shut down the equipment if the safety risks pose imminent danger.
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<p>11. Lift control system (including the application programming or converter of integrated driving machine)</p> <p>12. Lift landing and car doors</p>		
<p>6) Regulating new and existing MCPS</p>		
<p>Proposed Amendment:</p>	<p>Feedback Received:</p>	<p>BCA's Response:</p>
<p>a) <i>The legislative requirements for MCPS will take effect six months after the Regulations are gazetted. New MCPS in building projects and retrofitting works performed on existing MCPSES for which the first plan submission to the Commissioner of Building Control is made on or after the six-month gazetting period will need to comply with the prescribed standards and the new legislative requirements.</i></p>	<ul style="list-style-type: none"> • Query on whether PTO and annual inspection are mandatory for MCPS owners who use the MCPS only as static parking lots. • Query on whether the owner of an MCPS can deviate from the periodic maintenance frequency recommended by the MCPS manufacturer. 	<ul style="list-style-type: none"> • PTO and annual examination, inspection and testing are required for MCPS that is operational. We understand that some MCPS are used as static parking lots at the entrances level, and as long as they are used, they will require a PTO and undergo the annual examination, inspection and testing. It is advised that the owners of these MCPS consult LTA before turning the MCPS into static parking lots. • The owner will need to follow the maintenance frequency based on manufacturer's recommendation.
<p>7) Duties of stakeholders in major A/R works</p>		
<p>Proposed Amendment:</p>	<p>Feedback Received:</p>	<p>BCA's Response:</p>
<p>Currently in BSM Regulations 2016: 17 (4) <i>Upon completion of any major alteration or replacement works on a lift, the specialist professional engineer must examine, inspect and test every part of the lift that was</i></p>	<ul style="list-style-type: none"> • To clarify if the current requirement under BSM Regulations 2016's section 17 (4)(b) (requirement to comply with applicable standards for major alteration or replacement works) will be ported over to the new regime. 	<p>The new regulation will require the QP(FI) to ensure that the design and installation for the different types of fixed installation to be in accordance with <u>both</u> the manufacturer's recommendations and the applicable standard for the relevant fixed installation.</p>

<p><i>altered or replaced to ensure that the design and installation of each altered or replaced part is in accordance with</i></p> <p>—</p> <p>b) <i>in the case of any other lift, the applicable standard in Part 2 of the Second Schedule.</i></p>		
8) Miscellaneous		
Proposed Amendment:	Feedback Received:	BCA's Response:
<p>NA</p>	<ul style="list-style-type: none"> • Query on whether different QP(FI) can be appointed at the various stages (e.g. plan submission and T&C), and whether a different QP(FI) can be appointed if there is a need to re-submit plans (e.g. if the previous plans submitted were rejected or require amendments). 	<ul style="list-style-type: none"> • Yes, different QP(FI) can be appointed for different stages. The developer may also change the appointment of QP(FI) in the course of the project when it deems necessary.