LCIBSE LSoVT

Licentiate members and Engineering Technicians contribute to the design, development and maintenance of products, processes or services. They apply proven techniques and procedures to the solution of practical engineering problems.

A. Knowledge and understanding

Licentiates shall use engineering knowledge and understanding to apply technical and practical skills.

This competence is about having knowledge of the technologies, standards and practices relevant to the applicant's area of work and having evidence of maintaining and applying this knowledge.

The Vertical Transportation Evidence Examples included below cover only some of many areas of vertical transportation work and are intended as prompts for the applicant to include specific examples related to their area of work.

Objective	Evidence Examples	Vertical Transportation Evidence Examples
A1. Review and select appropriate techniques, procedures and methods to undertake tasks.	- Evaluating potential methods of carrying out an engineering task and selecting the most appropriate solution. - Recognising a difficulty and then identifying an approach to resolve it. - Identifying an improvement in a technique, procedure, process or method. - Interpreting and carrying out test procedures.	Describe how you have evaluated potential methods of carrying out an engineering task and selecting the most appropriate solution, for example: a. installation methodology for new or modernised lift/escalator equipment b. selecting and applying appropriate lift technologies on a project considering traction (geared and gearless), Machine roomless (MRL), hydraulic, rack and pinion, rigid chain technology, etc. c. equipment selection of components forming a lift system d. testing methodology for installed or modernised lift/escalator equipment e. Maintenance methods for various types of equipment

Objective	Evidence Examples	Vertical Transportation Evidence Examples
		Explain how you have recognised a difficulty and then identified an approach to resolve it, for example: a. unusual equipment faults needing a non-standard approach to resolving it (with reflection on fault-finding techniques used). b. responding to project design requirements for a non-standard lift/escalator solution. Demonstrate how you have identified an improvement in a technique, procedure, process or method, for example: a. Gaining safe access to lift/escalator equipment for maintenance, inspection and/or test purposes. b. improving lift or escalator equipment to meet user requirements Give examples of how you have interpreted and carry out test and inspection procedures, for example: a. undertaking lift and escalator commissioning tests b. applying alternative test procedures using alternative test sheets and methods. c. understanding rejection criteria for different components, e.g. suspension ropes. d. understanding when and why to call for supplementary tests or examinations.
A2. Use appropriate scientific, technical or engineering principles.	- Drawing on your technical knowledge to complete a task. - Performing calculations using standard formulae. - Analysing performance or test data or comparing performance information with published material.	Explain how you use your technical knowledge to complete a task, for example: a. fault-finding on a lift. b. routine maintenance on an escalator. c. traffic analysis

Objective	Evidence Examples	Vertical Transportation Evidence Examples
		Demonstrate your awareness and basic understanding of the design principles and associated calculations for key elements of design, for example: a. safety gear slide distances. b. voltage drop c. suspension-media factor of safety. d. machine torque. e. hydraulic pressure. f. guide rail stresses and deflection. g. traffic analysis Analysing performance or test data or comparing performance information with published material, for example: a. checking test results against relevant standards and/or specifications. b. evaluating data from a drive system, monitoring or fault logs. c. evaluating ride quality measurements.

B. Design, development and solving engineering problems

Licentiate Members shall contribute to the design, development, manufacture, construction, commissioning, decommissioning, operation or maintenance of products, equipment, processes, systems or services.

This competence is about the ability to apply engineering knowledge effectively and efficiently to the individual tasks which need to be undertaken in the applicant's role.

Objective	Evidence Examples	Vertical Transportation Evidence Examples
B1. Identify problems and apply appropriate methods to identify causes and achieve satisfactory solutions.	- Using knowledge to identify a problem or an opportunity for improvement. - Investigating a problem to identify the underlying cause. - Identifying a solution to a problem or an improvement opportunity. - Contributing to the design of an item or process.	Explain how your use your knowledge and experience to identify a problem, the cause and the solution, for example: a. a door lock tipping in service b. electrical overloads tripping c. machine traction issues d. lift traffic flow and performance issues
B2. Identify, organise and use resources effectively to complete tasks, with consideration for cost, quality, safety, security and environmental impact.	- Balancing these factors in selecting appropriate materials. - Identifying precautions as a result of evaluating risks and other factors. - Considering how waste can be minimised, recycled or disposed of safely if recycling is not possible. - Contributing to best practice methods of continuous improvement. - Improving the quality of an operation or process.	Identify, organise and use resources effectively to complete tasks, with consideration for cost, quality, safety, security and environmental impact, for example: a. Give examples of differing approaches used for selection of products or equipment to meet project or stakeholder objectives. b. Discuss the consequences of neglect or error, for example in the selection of equipment, use or maintenance choices. c. Appreciate cost/benefit calculations and whole life costing. Show why you do things in a certain way. d. Explain how waste, such as shipping materials for equipment on site, can be minimised, recycled or disposed of safely.

Objective	Evidence Examples	Vertical Transportation Evidence Examples
		e. Improving the quality of an operation for example to a lift or escalator. f. Demonstrating organisation and storage of materials on the jobsite to complete an installation, maintenance, repair or modernisation task g. Manage a team of maintenance or callout mechanics to meet defined objectives in terms of maintenance visits, callback response time, etc.

C. **Responsibility, management and leadership**

Licentiate members shall accept and exercise personal responsibility.

This competence is about the ability to plan and manage the applicant's own work effectively and efficiently. It is also about the ability to consider and identify improvements to maintain quality in their work.

Objective	Evidence Examples	Vertical Transportation Evidence Examples
C1. Work reliably and effectively without close supervision, to the appropriate codes of practice.	- Completing challenging tasks successfully within your area of work. - Identifying issues which fall outside of your current knowledge and seeking advice. - Identifying standards and codes of practice relevant to a new task.	a. Be aware of what you don't know and seek advice. b. Identifying standards and codes of practice relevant to a new task, e.g. safe working, firefighters lift design, inspection standards, etc. c. Maintaining a portfolio of lifts or escalators. d. Give an example of a project that you have worked on with challenges that you have overcome. e. Demonstrate where you have learnt a new skill on a project and how you have asked for assistance to learn this skill. f. g. Finding standards relating to new tasks, such as working on an escalator for the first time.
C2. Accept responsibility for the work of themselves or others.	- Fully understanding drawings, permits to work, instructions or other similar documents after appropriate checking, and identifying issues. - Inspecting work carried out by others. - Checking the status of equipment, the work environment and facilities and taking appropriate actions before commencing work.	For example: a. Isolating and checking that equipment is not live before working b. Work safely and effectively with other people working on the same equipment. c. Demonstrate how you have assessed the work of others.

Objective	Evidence Examples	Vertical Transportation Evidence Examples
C3. Accept, allocate and supervise technical and other tasks.	- Ensuring that the scope of a task is clear before accepting and/or allocating it to others. - Querying any aspect of a task which is not clear and/or providing an explanation if a query is raised by others. - Learning from your own experience and/or providing constructive feedback when supervising or working with others.	For example: a. Ensuring that the scope of a task is clear before accepting and/or allocating it to others b. Querying any aspect of a task which is not clear and/or providing an explanation if a query is raised by others c. Learning from your own experience and/or providing constructive feedback when supervising or working with others

D. Communication and interpersonal skills

Licentiate members shall use effective communication and interpersonal skills.

This competence is about the ability to work with others constructively, to explain ideas and proposals clearly and to discuss issues objectively and constructively.

Objective	Evidence Examples	Vertical Transportation Evidence Examples
D1. Communicate effectively with others, at all levels, in English.	- Contributing to meetings and discussions. - Preparing communications, documents and reports on technical matters. - Exchanging information and providing advice to technical and non-technical colleagues.	For example: a. Report on maintenance, inspection, installation or testing work completed b. Engage in meetings at work and toolbox talks, reporting of issues arising from work to technical and non-technical colleagues and managers c. Develop and present the content of a toolbox talk for colleagues Demonstrate an ability to communicate in a clear, concise, and collaborative manner. Show how you have assisted other team members in achieving a common goal.
D2. Work effectively with colleagues, clients, suppliers or the public.	- Contributing constructively as part of a team. - Successfully resolving issues in discussions with team members, suppliers, clients and/or others. - Persuading others to accept suggestions or recommendations. - Identifying, agreeing and working towards collective goals.	Show how you have helped another person work towards the right outcome.
D3. Demonstrate personal and social	- Knowing and managing own emotions, strengths and weaknesses.	For example:

Objective	Evidence Examples	Vertical Transportation Evidence Examples
skills and awareness of diversity and inclusion issues.	- Being confident and flexible in dealing with new and changing interpersonal situations. - Creating, maintaining and enhancing productive working relationships, and resolving conflicts. - Being supportive of the needs and concerns of others, especially where this relates to diversity and inclusion.	a. Have you taken any courses to develop your soft skills such as emotions, strengths, and weaknesses. b. Explain where you have had to deal with a challenging situation. This might be a difficult client or a problem with a staff member. Explain how you approached and overcame this. c. How have you supported the different needs and requirements of your team? d. Describe how you have brought people from different backgrounds and with different types of relevant experience together to achieve a positive outcome on a project. e. Describe how you have helped to overcome the challenges faced when bringing people with different perspectives together.

E. Personal and professional commitment

Licentiate Members shall demonstrate commitment to CIBSE's Code of Professional Conduct, recognising obligations to society, the profession and the environment.

This competence is about ensuring that the applicant is acting in a professional and ethical manner in their work and in their dealings with others. A Licentiate Member should set a standard and example to others with regard to professionalism.

Objective	Evidence Examples	Vertical Transportation Evidence Examples
E1. Understand and comply with relevant codes of conduct.	- Demonstrating compliance with CIBSE's Code of Professional Conduct. - Working within all relevant legislative and regulatory frameworks, including social and employment legislation.	Show how you comply with CIBSE's Code of Professional Conduct Show how you keep up to date with all relevant legislative and regulatory frameworks, including social and employment legislation Provide evidence of working to relevant parts of codes of practice company/organisational policies and procedures relevant to their work Show how you relate the code of conduct to your role.
E2. Understand the safety implications of their role and apply safe systems of work.	- Providing evidence of applying current safety requirements, such as risk assessment and other examples of good practice you adopt in your work. - A sound knowledge of health and safety legislation, for example: HASAW 1974, CDM regulations, ISO 45001 and company safety policies.	Providing evidence of applying current safety requirements, such as risk assessment and other examples of good practice you adopt in your work Demonstrate a sound knowledge of health and safety legislation as applicable to the markets in which you work, for example in the UK: HASAW 1974, LOLER, PUWER, CDM regulations, ISO 45001 and company safety policies. Evidence of working to relevant parts of safe working codes of practice such as in the UK BS 7255, BS 7801, BS 9102, LEIA Site Safety Handbook relevant to their work

Objective	Evidence Examples	Vertical Transportation Evidence Examples
E3. Understand the principles of sustainable development and apply them in their work.	- Recognising how sustainability principles, as described in the Engineering Council's Guidance on Sustainability, can be applied in your day-to-day work. - Identifying actions that you can and have taken to improve sustainability.	Explain how you operate and act in your day to day life to act responsibly, taking into account environmental, social and economic outcomes. How do you take action to reduce environmental impact? This might be different approached to design, implementing software or reduction of materials.
E4. Carry out and record the Continuing Professional Development (CPD) necessary to maintain and enhance competence in their own area of practice.	- Undertaking reviews of your own development needs. - Planning how to meet personal and organisational objectives. - Carrying out and recording planned and unplanned CPD activities. - Maintaining evidence of competence development. - Evaluating CPD outcomes against any plans made. - Assisting others with their own CPD.	Explain how you are progressing your development? CPD activities or training, attending conferences, research etc. How are you recording evidence of this development? How have you set goals and worked toward these goals. Explain how you have worked with your team to support them to achieve their goals. Are you part of any industry groups, explain this and what your role is.
E5. Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner.	- Understanding the ethical issues that you may encounter in your role - Giving an example of where you have applied ethical principles as described in the Engineering Council's Statement of Ethical Principles. - Giving an example of where you have applied or upheld ethical principles as defined by your organisation or company.	Explain what the ethical issues mean to you and how this is applied in your work. You can pick a few of the principles and give examples where you have applied this to your life or work. Example where you have stood by your design decisions, even if pressure to take shortcuts.