

1. Title	Implement the periodic examination and testing of lifts
2. Code	EMLEIT302A
3. Range	Arrange and implement the periodic examination and testing of lifts at field locations.
4. Level	3
5. Credit	3
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Working principles and periodic examination report for lifts devices</p> <ul style="list-style-type: none"> ◆ Understand the working principles of lifts devices including: <ul style="list-style-type: none"> • the devices in machine room • the devices inside the lift car • the devices in landings • the devices inside the lift shaft • the devices in the lift pit ◆ Understand the requirements of periodic examination report including: <ul style="list-style-type: none"> • driving motor with associated overload protective devices • brakes with associated components, ensuring no wearing, corrosive and dirty for effect upon the normal operation • control equipment and safety equipment • mechanical and electrical interlocking devices of car door and landing doors • overspeed governor, safety gear and the associated devices • buffer testing at low speed with the car empty • car door safety edges / re-opening devices and door operation • alarm and intercom device • fireman lift operation • insulation resistance and electrical continuity • hydraulic lift control circuit • testing at low speed with the car empty for the hydraulic lift safety devices such as clamping device and pawl device • mechanical creeping and electrical anti-creep • rope / chain attachment & termination devices • the sheaves including driving sheave and deflection sheave • the gearboxes and generators <p>6.2 Methods and procedures for periodic examination and testing of lifts</p> <ul style="list-style-type: none"> ◆ Formulate the inspection and testing procedures of lift devices which are the requirements in periodic examination and testing report including: <ul style="list-style-type: none"> • the devices in machine room

	<ul style="list-style-type: none"> • the devices inside the lift car • the devices in landings • the devices inside the lift shaft • the devices in the lift pit <p>◆ Effectively use protective barriers or guards to implement and assign safety measures at work sites including:</p> <ul style="list-style-type: none"> • safety procedures for shutdown • safety works for working • safety procedures for resumption operation <p>◆ Effectively use different kinds of tools, instruments and testing and examination forms to carry out and assign a completed inspection and testing work including:</p> <ul style="list-style-type: none"> • dynamic examination (mechanical) such as <ul style="list-style-type: none"> ▸ jack ▸ suspension ▸ safety gear ▸ energy dissipation buffers ▸ energy accumulation buffers ▸ brakes ▸ overspeed governor ▸ landing door lock devices ▸ ascending car overspeed protection devices • static examination (electrical) such as <ul style="list-style-type: none"> ▸ insulation resistance to earth ▸ earthing ▸ conductor protection ▸ inverting and phase-failure protection • dynamic test such as <ul style="list-style-type: none"> ▸ safety contact/circuit ▸ car top control devices ▸ clearances and runbys ▸ door tests • measurements of the electrical system such as <ul style="list-style-type: none"> ▸ particulars of lift motor ▸ particulars of MG set drive motor /converter ▸ current and speed tests (at mid-point of travel) ▸ overcurrent protection device
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	<ul style="list-style-type: none"> • measurements of the hydraulic and electrical systems such as <ul style="list-style-type: none"> ▸ static pressure of hydraulic oil with rated load in the car ▸ any leakage of hydraulic oil when subject to 200% of full load pressure applied between the non-return valve and the jack ▸ particulars of the pump motor ▸ particulars of the pump ▸ current and speed tests (at mid-point of travel) ▸ operating pressure of the pressure relief valve ▸ operation of the check valve ▸ operation of the rupture valve ▸ operation of the manual lowering valve ▸ precautions against any overheating of the hydraulic oil • overspeed governor tests such as <ul style="list-style-type: none"> ▸ car overspeed governor ▸ counterweight overspeed governor • car safety gear tests such as <ul style="list-style-type: none"> ▸ stopping distance in the test ▸ sloping of 5% from the car floor horizontal after the lift car being brought to a halt • counterweight safety gear tests such as <ul style="list-style-type: none"> ▸ safety gear operating properly when being engaged at rated speed with the car empty • ascending car overspeed protection means tests such as <ul style="list-style-type: none"> ▸ overspeed governor tests ▸ speed reducing element tests • buffer tests such as <ul style="list-style-type: none"> ▸ car buffers ▸ counterweight buffers • traction checks such as <ul style="list-style-type: none"> ▸ with the car empty when travelling upwards at rated speed ▸ with the rated load 125% when travelling downwards at rated speed ▸ with the counterweight resting on the buffers, is it possible for the empty car to be raised under power • emergency stopping distance such as <ul style="list-style-type: none"> ▸ what was the stopping distance of the car travelling in down direction at rated speed and carrying 125% of the rated load
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		<ul style="list-style-type: none"> • anti-creep device / system such as <ul style="list-style-type: none"> ▸ pawl device ▸ clamping device ▸ electrical anti-creep system • duty cycle test such as <ul style="list-style-type: none"> ▸ does the lift operate satisfactorily for a period of at least 0.5 hour when running with rated load and full travel • general inspection (lift work) such as <ul style="list-style-type: none"> ▸ does the fireman's lift operate properly ▸ are the emergency instructions displayed in the machine room ▸ type of the emergency alarm device ▸ does the overload device operate properly ▸ is the maximum load indicated in the car ▸ does the emergency operation system function correctly in accordance with the design code ▸ does the emergency lighting of the car comply with the design code ▸ are the hoistway emergency doors in compliance with the code of practice on building works for lifts ▸ does the artificial lighting in the lift well comply with the design code ▸ are the safely means of access to equipment in compliance with the code of practice on building works for lifts ▸ are CCTV camera provided in lift car and CCTV monitors provided in management office/machine room • general inspection (other works) such as <ul style="list-style-type: none"> ▸ are the provisions for ventilating the machine room adequate ▸ are the machine room conditions satisfactory ▸ is the machine room artificial lighting adequate ▸ are the machine room doors/locks comply with the code of practice on building works for lifts
6.3	Professionalism in full periodic safety inspection and testing of lifts	<ul style="list-style-type: none"> ◆ Apply manufacturer's repair instructions, the code of practice for lift design and construction and code of practice for lift work to implement and assign full periodic safety inspection and testing work for lifts

7. Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <ul style="list-style-type: none"> (i) Capable to arrange and assign full periodic safety inspection and testing procedures for lifts systematically and through effective communication; and (ii) Capable to implement full periodic safety inspection and testing of lifts under general or complicated situations in compliance with the prescribed standards of the code of practice for lift design and construction.
8. Remarks	<p>The credit value of this unit of competency is set on the presumption that the person already possesses knowledge and skills in implementing lift debugging or commissioning.</p>