HOUSING AUTHORITY LIFT AND ESCALATOR NSC

SAFETY AUDITING SYSTEM (HALENSAS) VERSION 1.3

Occupational Safety and Health Council 2022

Version 1 October 2022

Introduction

Background

Safety Audit has been incorporated as a contract requirement to Building and Engineering contracts since 1996 to audit contractors' safety management system (SMS) and their effectiveness in the implementation of the Safety Plans. The Occupational Safety and Health Council (OSHC) is the appointed consultant to develop and manage the Housing Authority Safety Auditing System (HASAS).

The auditing system has been reviewed regularly in respect of its coverage and safety standards, HASAS version 1.3 had included the expanding the scope of safety audit to cover safety performance of Building Services Nominated Sub-contracts (BS NSC) for Building Contracts tendered out since 1st Jul 2006.

Building Services Nominated Sub-contracts

The Project Building Services Engineer (PBSE) would inform OSHC of the names of the Nominated Building Services Subcontractors (NSC) once the tenders were awarded. OSHC would then request the appointed ASA to declare any conflict of interest before carrying out the safety audit on NSC. Re-selection of ASA would be necessary if there was a conflict of interest.

The ASA would prepare a Safety Audit Report for Main Contract and a Safety Audit Checklist Report for the respective NSC together with a Summary of Recommendations and Action Plan for Improvement after each audit on site. There will be an "Extract for Attention" highlighting imminent risk items for physical activities and weakness of key Elements or Sections with unsatisfactory performance (score less than 70% within that Element or Section) in the Summary of Recommendations.

Enhancement Details

Given the steady improvements in safety performance over the years, Housing Authority reckons the need of a system review to further enhance the effectiveness of the auditing system. The Housing Department Lift and Escalator NSC Safety Auditing System (HALENSAS) included the following enhancements

Safety Auditing System (HALENSAS) version 1.0 was launched on 1 January 2013.

Safety Auditing System (HALENSAS) version 1.1.1 was launched on 1 January 2017. Audit questions were increased from 40 to 60 in Part B, audit criteria for individual questions were updated with latest guidelines. Weighting of audit questions was adjusted.

Safety Auditing System (HALENSAS) version 1.2 was launched on 1 April 2019. Audit questions were increased from 28 to 53 in Part A and from 60 to 65 in Part B. More questions were covered in Part A to cover the Safety Management System. Element of Work in Confined Spaces was removed. Audit criteria for individual questions were updated according to the latest safety and health requirements and guidelines such as the verification of the effectiveness of stopping devices (car stopping device and emergency stop button) and landing door interlock to avoid unintended lift car movement before entering the lift car top or lift pit.

(a) Lift and escalator NCS audit is detached from the existing HASAS safety audit and conducted separately by the same ASA if no conflict of interest but in a date or dates; inform by HA where the lift and escalator activity is / are in an active stage.
(b) NSCs are audited maximum three times within the period where the critical processes of permanent lift installation are in active progress.
(c) Cover specific lift and escalator work activities and the main focus is on company's work process control – safe system of work.
(d) Audit standards are based on:
    i. Code of Practice for Safety at Work (Lift and Escalator), Labour Department
    ii. Code of practice for Safety at Work (Lift and Escalator) and safety guidelines publications by Construction Industry Council (CIC) covering various stages are outlined below -

    Volume 2 – During Lift Installation Stage Until Issue of Occupation Permit and Handing Over to Developer

    Volume 4 – Builder's Lift within Lift Shaft
(e) The ***ASA*** would prepare a Safety Audit Report for the NSC together with a Summary of Recommendations and Action Plan for Improvement after each audit on site. There will be an "Extract for Attention" highlighting weakness of key Sections in Part A and imminent risk Items for physical activities in Part B with unsatisfactory performance (score less than 70% within that Section) in the Summary of Recommendations.

Safety Auditing System (HALENSAS) version 1.3 will be effective from 1 October 2022. Audit questions would be decreased from 53 to 52 in Part A and increased from 65 to 69 in Part B. A new section for the Escalator Installation would be included. Audit criteria for individual questions would be updated and fine tuned.

Audit Elements of HALENSAS

A site audit is designed to cover specific lift and escalator work activities at pre-determined intervals by ASA.

The audit programme consists of two parts:

PART A: Process control programme - Safe systems of work

1. Process safety information
2. Process Hazard Analysis (PHA) / Risk Assessment
3. Development of safe methods
4. Implementing the system
5. Monitoring the system

PART B: Site verification checklist used by ASA as on site checking and verification for PART A.

6. Working At Height
7. Protection Against Falling Objects
8. Housekeeping
9. Lifting Operations
10. Welding / Cutting Operations and Equipment
11. Abrasive wheels
12. Portable Tools
13. Electrical Works
14. Dangerous Substances
15. Manual Handling and Mechanical Materials Handling
16. Noise
17. Escalator Installation
18. Miscellaneous

Computer Programme

The safety auditing system developed by OSHC incorporates the use of a computerised audit programme for ISAS, which is available from the OSHC.

Disclaimer

This auditing system is produced for accredited safety auditors (ASA) to conduct safety audits for Housing Authority projects. Compliance with this auditing system does not itself confer immunity from legal obligations. Individual organisations, contractors and sub-contractors are responsible for ensuring that they meet their occupational safety and health obligations under the relevant legislation.

HALENSAS version 1.3 Audit Definitions and General Audit Criteria for ASA

1. Definitions

The table below contains a definition of some of the general terms used throughout the legal requirements and audit criteria in this guide.

Term	Definition
Accredited Safety Supervisor (Construction)	The accreditation services of Accredited Safety Supervisor (Construction) (Accredited SS(CO)) are provided by the Hong Kong Safety and Health Certification Scheme under the OSHC. The services aim at ensuring that Accredited SS(CO)s possess the necessary qualifications and capability to perform their specified duties, such as to assist the safety officers in carrying out their duties; to supervise the observance by the workers of the safety standards; to conduct safety inspection and submit weekly reports in the approved form, etc.
Builders' Lift	A lift that is used for vertical transportation within a lift shaft at a construction site for this Guideline only.
Escalator installation activities	Include the following works: • Installation of enclosure of escalator • Installation of surrounds of escalator • Installation of supporting structure of escalator • Installation of lighting of escalator • Installation of electrical installations and appliances of escalator • Installation of handrails of escalator • Installation of steps, pallets, belt and combs of escalator • Installation of driving system of escalator • Testing and commissioning

Term	Definition
Hazards	A source of potential harm or a situation with a potential to cause injury, illness, loss or damage.
Hazard identification	Process of recognizing that a hazard exists and defining its characteristics.
Hazardous	"Hazardous" refers to the potency of causing harm to health.
Hazardous substances	Means a biological or chemical agent that has the potential or causing harm by reason of its being a compressed gas, or a flammable, oxidizing, poisonous, corrosive or reactive substance.
Imminent danger	The existence of any condition or practice in a construction site which could reasonably be expected to cause death or serious physical harm to any worker if construction operations were to proceed in the affected area or if workers were to enter the affected area before the condition or practice was eliminated.
Incident	Any event that has caused or has the potential to cause injury, illness or damage.
Lift installation safety plan / Safety Plan	Details on the risk assessments and method statements for the lift installation processes and the safety provisions to be adopted on site to ensure site safety of all lift installation procedures.
Lift installation activities	Include the following work in lift shaft: • Scaffolding erection, dismantle and removal • Plumb line setting • Installation of rail brackets and guide rail erection • Installation of landing sills and jambs • Machine room equipment installation • Electrical works • Car cage, rope & counterweight assembly • Landing door assembly • Lift car electrical installation • Lift pit equipment installation • Lift testing and commissioning
Monitor	To check, supervise, observe critically, or record the progress of an activity, action or system on a regular basis in order to identify change.
Material Safety Data Sheet (MSDS)	Material Safety Data Sheet – a sheet of information, usually provided by suppliers of chemical and other like products

Term	Definition
	setting out the nature and composition of the product as well as instructions for safe handling.
Occupational Exposure Limit (OEL)	"Occupational Exposure Limit (OEL)" refers to the airborne concentration(s) of individual chemical agents that represent levels that are regarded to impose no adverse health effects to nearly all workers on exposures by the route of inhalation.
Performance indicators	Common safety performance indicators include accident statistics, near miss incidents, safety audit scores, safety inspections, employees safety trained, senior management safety tours, employees' work safe behaviour and safety climate survey scores.
Permit-to-work systems	Permit-to-work systems use a preprinted checklist containing the safety measures from risk assessment report. A permit-to work certificate should be developed by an RSO and record the following: (a) the findings in the risk assessment report; (b) the effectiveness of the isolation and withdrawal from service; (c) the nature of work to be done; (d) the condition and safety precautions in the work place; and (e) the period during which workers may remain safely in the lift shaft.
Procedure	Specific steps or flow of the task that anyone can follow and able to achieve its pre-designed purpose and meet the required standards. A good procedure should be repeatable, reliable and traceable.
Process control	Means that processes are efficiently planned, executed, and effectively controlled such that the equipment, environment, personnel, documentation, and material employed constantly result in meeting safety requirements.
Process hazard analysis	An organized and systematic effort to identify and analyse the significance of potential hazards associated with a process.
Process safety information	Written information pertaining to the hazards and the technology of the process, and equipment in the process to enable people involved in operating the process to identify and understand the hazards posed the processes.
Risk	Combination of the likelihood and consequence(s) of a

Term	Definition
	specified hazardous event occurring.
Risk assessment	Overall process of estimating the magnitude of risk and deciding whether or not the risk is tolerable.
Safety plan	It is a document setting out the specific safety and health resources, responsibilities and procedures or practices for a construction project. In accordance with 14 elements of the F&IU (Safety Management) Regulation, the safety plan must include: • the names, positions and health and safety responsibilities of all persons at the workplace whose positions or roles involve specific health and safety responsibilities in connection with the construction project; • the arrangements in place for managing any work safety and health incidents that occur; • any site-specific health and safety rules and the arrangements for ensuring that all persons at the workplace are informed of these rules; and • the arrangements to collect and assess, monitor and review the SMS.
Safe system of work on Lift Shaft Works	To ensure the safety and health of workers engaged in lift shaft works, the Contractor should: (a) plan the lift shaft works; (b) provide lift shaft protection; (c) conduct a risk assessment and prepare a method statement on any lift shaft work; (d) design, construct, use and maintain lift shaft platforms properly; (e) develop and implement a permit-to-work system for any lift shaft work for close supervision on the adoption of safety precautions; (f) provide fall-arrest system and safety training to workers; and (g) pay special attention to buildings under Temporary Occupational Permit (TOP) arrangement
Safe work method statement	A safe work method statement is a document detailing how a particular task or activity will be carried out. It should detail the possible dangers / risks associated with a particular part of the

Term	Definition
	project and the methods of control to be established, to show how the work will be managed safely. The safe work method statements should include the following: • Organisation's letterhead showing the name and registered office address of the organisation • A description of the work to be undertaken • Description of the range of works methods which the work can be done • The potential hazards associated with the work and the safety controls that will be in place to minimize these hazards • Identification of safety and health legislation, codes or standards applicable to the work and where these are kept • The names and qualifications of those who will supervise the work, inspect and approve work areas, work methods, protective measures, plant, equipment and power tools • Identification of the plant and equipment that will most likely be used on site, e.g. ladders, scaffolds, grinders, fire extinguishers and …. etc. • Details of the inspection and maintenance checks that will be or have been carried out on the equipment listed • Show the signature of a senior management representative of the organisation and the date signed.
Safety audit	Safety audit means an arrangement for – (a) Collecting, assessing and verifying information on the efficiency, effectiveness and reliability of a safety management system (SMS); and (b) Considering improvements to the system
Safety inspections	A structured inspection of the workplace to check for obvious hazards and that appropriate safe work practices and risk controls are in place. Safety inspections are undertaken by competent persons using a relevant inspection checklist.
Safety supervisor	Means a person employed as a safety supervisor in an industrial undertaking under the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations (Cap.59, sub.leg.)
Work Safe Behaviour programme (WSB)	Refer to the guidebook "Implementing the Work Safe Behaviour (WSB) Programme" of OSHC for details.

2. General Audit Criteria for ASA

Term	General Audit Criteria
Arrangement	Auditor should verify the adequacy of auditee's arrangement for health and safety issues.
Appropriate Steps / measures	Auditor is reminded to comment on the existing procedures, arrangements and appropriate steps / measures (if any) and give recommendations where appropriate to help auditee to make continuous improvement.
Audit follow-up	In order to fulfill the legal requirement and improve the effectiveness of safety audits ASA should advise the auditee to prepare an action plan for the improvements if any after each audit. ASA needs to carry the independent verification that the auditee has undertaken corrective actions and that these actions effectively address the audit findings. The result of this verification must be commented and stipulated in the audit reports.
Clarification for Audit Report	Audit reports that need clarification because some of the audit questions may either require further elaboration or additional supporting evidence to support the answers. Auditors are reminded **NOT** to erase the previous note; a new **Clarified Notes** should be entered after the previous **Notes.**
Evidence	The collection of documentary evidence should be sufficient. That is, the amount of evidence should form a sufficient condition for the claim to be true. Since each audit report is part of the continual assessment process of the safety management system, duplicated submission of documentary evidence is not necessary and so not encouraged. In particular, Documents verified in the previous audit, such as training certificates to show competence, need not be submitted again unless there is a substantial change, as when one such certificate has been renewed or there is a new and / or replacement staff member.
Internal Safety Audit	Internal safety audit has been used as one of the monitoring tools for assessing the effectiveness and thoroughness of the inspections. The internal audit should be a planned audit according to a written procedure in safety plan and conducted only by competent, trained personnel with independence as far as practicable.

Term	General Audit Criteria
	The following situations are not desirable and unacceptable as it will defeat the purpose of monitoring. - Internal safety audit was conducted by contractor's safety officer or project manager who has actually participated in the job. - The findings and recommendations of the audit report mainly focused on the physical conditions rather than the safety management system, in particular, the assessment of the effectiveness and thoroughness of inspection. • Competence – the person responsible for the internal audit should be properly trained such as with a certificate for safety auditing or equivalent; • Independence – the person responsible for the internal audit should not be involved in the project. They could be assigned from head office, team member from other project or outside consultants; • Planned and Coverage – according to a written procedure in safety plan and the Auditing System adopted for internal safety audit should include the assessment of the safety management system and the actual implementation on site. If an internal audit report provided does not fulfill the requirement on **competence, independence, planned and coverage**, the answer should be "No".
N/A	Auditor should **NOT** put down 'N/A' for processes or items which exist on site but are not active during the audit. For example, welding or manual handling operation which may not be observed at the time of audit but will be foreseeable existed in the past and future in site. Auditor should comment on the efficiency and reliability of safe system of work and / or process control of these items or processes in the corresponding audit questions. However, 'N/A' can put down to those audit questions specifically for checking the safety guarding of a machine which is not found in the site at the time of safety audit.

Term	General Audit Criteria
Procedure	Auditor should verify the adequacy of auditee's procedures for health and safety issues.
Safety audit	ASAs must not just putting down a 'YES', 'NO' or 'N/A', but should base on the general principles in auditing that highlighted by the three key works, namely "Effectiveness", "Efficiency" and "Reliability" during the auditing processes in collection of information, the assessment and verification of information. ASAs are required to assess the compliance of safety and health of safety management system and site works in accordance with audit criteria with justification and evidence, give appropriate recommendation for improvement of the existing safety management system site works in the safety report.
Safety control measures stipulated in the contract Specification	ASAs are required to cover those safety and health related issues required in the contract Specifications during audits as follow: ● Before the audits, ASAs should consult the HA project team to obtain information on OSH related contract specification. ● ASAs should add the information in their audit plans as the audit criteria for their audits. A Section 'Information from HA project team' should be added in the audit plan and nil return is required. ● During the physical inspection of the audit, ASAs should check the OSH contract specification as specified in the audit plan. Photos should be taken to support whether suitable safety control measures are implemented accordingly. ● Scores should be deducted from the relevant questions if deficiencies are identified. Recommendations should be made.
Safety Training is not equivalent to control measure	The main purposes of providing safety training are to workers aware of the safety and health at work and competent in performing the necessary safety practices. Safety training alone belongs to lower level under the hierarchy of safety control and should not be considered as evidence of a control measure in

Term	General Audit Criteria
	abating the high risk processes. Auditee should come up with control measures which based on the risk assessment.
Site audit findings from Housing Authority and inspection reports from Labour Department	The HASAS Management Office will forward the findings related to OSH to corresponding ASAs for their follow-up in the next safety audit under HASAS. ASAs are reminded that these follow-up actions should be one of the priority areas that required extra attention and close examination. ASAs are also required to verify and comment on the follow-up actions of the contractors in the audit report or inspection report.
Statutory Inspection Form(s)	Name and designation of the person responsible for regular inspection should be clearly stated in the statutory inspection form such as Form 1 for Weekly Inspection of Lifting Appliances, Form 4 for Weekly inspection for Excavation and Form 5 for Fortnightly Inspection of Scaffold. As this is a mandatory requirement, the form should be properly filled in name and designation otherwise the answer should be "No".
Weekly Inspection Checklist and Safety Supervisor Daily Inspection – Form 3A	Auditor is required to assess and comment on the quality of inspection checklist records. The following items show some of the main points that auditor need to pay particular attention: ● Coverage of the inspection checklist or report should be adequate to cater for all activities on site; ● The location, area, date for non-conformity spotted, the priority of rectification action, the person responsible for rectification etc. should be clearly stated and recorded; ● Non-conformity identified in the checklist / form should be reflected and followed up in section / report for corrective actions; ● Non-conformity that may cause imminent danger such as no guardrail for floor edge / working platform or floor opening not covered etc. should require a prompt remedial action rather than allowance of rectification a couple of days after the inspection. ● Repeating of the same non-conformity in form 3A reflects problems in the efficiency, effectiveness and reliability of inspection program on site.

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HALENSAS version 1.3

Module	***HOUSING AUTHORITY LIFT AND ESCALATOR NSC SAFETY AUDITING SYSTEM (HALENSAS) VERSION 1.3***
PART A	**Process Control Programme**
Section 1	**Process Safety Information**

Question 1.1 **Weighting: 3**

Is there a written safety policy with commitment prepared?

Audit Criteria

1. The safety policy should be project specific. If the policy is modified from the corporate policy, it should be stated so in the chapter on "Safety Policy" in the safety plan and the project team should be well aware of it.
2. The safety policy contains a general organisation commitment to a workplace free from injury & illness.
3. Safety policy states management's commitment to meet legal obligations for occupational safety and health as minimum.
4. Safety policy states employees' commitment to look after the safety and health of themselves and the people they work with and to co-operate with management's initiatives for safety and health.
5. If the commitment to progressive improvement is not stated in the policy, the answer should be "No".
6. The safety policy is signed by the most senior management assigned for the project and is dated.
7. Safety policy acknowledges management's primary responsibility for safety and health in the workplace.
8. Regular review of safety policy should be endorsed by safety committee and disseminated to the relevant site personnel through posting on notice board or briefing.

Question 1.2 **Weighting: 3**

Is there a safety plan containing procedures to identify tasks involving high or known risks that safe systems of work are required?

Audit Criteria

1. There is a project specific safety plan
2. The safety plan should contain procedures to identify tasks involving high or known risks that safe systems of work are required.

Reference :

CIC safety guideline (volume 2 During Lift Installation Stage until Issue of Occupation Permit and Handing Over to Developer)

Section 6.1 Prior to the commencement of any lift installation work, the Main Contractor should liaise with the Lift Installation Contractor and prepare a lift installation safety plan with details on the risk assessments and method statements for the lift installation processes and the safety provisions to be adopted on site to ensure site safety of all lift installation procedures.

Question 1.3 **Weighting: 3**

Is there a complete and accurate process information addressing the hazards of the tasks that may be encountered in different stages or aspects such as design, technologies, materials and equipment?

Audit Criteria

1. The safety plan should contain a consideration on aspects such as design, technologies, materials and equipment.
2. Lift shaft platform is designed by RSE.
3. Lift shaft platform drawings should be available.
4. The safety plan should address the following exceptionally high risk conditions such as:
    i. lift shaft used as rubbish chute
    ii. material hoists or for material transportation by lifting appliances
    iii. lift shaft protection and safe means of access
    iv. transportation routes and hoisting methods for escalator components

Reference :

CIC safety guideline (volume 2)

Section 6.2 The lift installation safety plan should contain chapters to outline:

(a) the type of lift to be erected. In case of a machine-room-less lift or a jump lift, copies of lift configurations should be attached to the plan;

(b) the plant and equipment of the lift installation works: the use of bamboo or metal scaffold, guided-SWP, platform lift or, in case of jump lift installation, the use of a heavy-duty lift appliance;

(c) the positions of floor openings in a lift machine room, structural links in the ceiling of a lift shaft and structural anchors and eye bolts for the uses of a guided-SWP, a trimmed scaffold and independent lifelines;

(d) the type of a heavy-duty lifting appliance to hoist up lift shaft platforms and machine components of a jump lift to upper level of a lift shaft;

(e) if a guided-SWP or a platform lift is used, the provision of lift shaft fencing in addition to lift shaft protection cages specified in Figure 5 of Volume 1 of the Guidelines;

(f) the administration of permit-to-work systems on hazardous trade processes such as hot work and electric arc process;

(g) if the building is under TOP arrangement, the corresponding safety and protection measures; and

(h) the Risk Assessment Report.

(i) Planning Team should prepare a pre-work check reference.

CIC safety guideline (volume 4 Builders' Lift within Lift Shaft)

Section 6.4 Planning and Coordination

6.4.1 The Main Contractor should establish a planning team consisting of representatives from managerial staff, supervisory staff, safety personnel and workers from both Main Contractor and Lift Contractor. The team should coordinate on matters relating to the Builders' Lift installation.

6.4.2 The Planning Team should assess the result of risk assessment and coordinate the safety control measures accordingly.

6.4.3 The Lift Contractor should brief the Competent Lift Workers and Lift Workers, if any, on the safety measures to be implemented before the workers commence the Builders' Lift installation work.

6.4.4 Any work / processes that deviate from the agreed safety plan should be reviewed and agreed by the Planning Team before execution.

6.4.5 The Main Contractor should make all necessary arrangements to facilitate the maintenance of the Builders' Lift.

Code of practice for Safety at Work (Lift and Escalator)

All the work carried out on lifts / escalators should be conducted by workers authorized by the proprietors or contractors. They should be strictly supervised and instructed clearly in the work to be performed and how it is to be done in a manner that is safe and without risk to health (Section 6.1).

Question 1.4 **Weighting: 3**

Is the process information available to all who need it?

Audit Criteria

1. Working procedure and instructions should be available on site.
2. All site personnel are clearly instructed as to what procedure they should follow.
3. Auditee should place warning notices and safe working procedures near lift shaft openings at prominent locations to remind all site personnel to take all necessary safety precautions when entering the lift shaft.

Reference :

CIC safety guideline (volume 2)

Section 6.4 A planning team comprised of site managerial and supervisory representatives from the Main Contractor, the Lift Installation Contractor and subcontractors, including Project Manager / Engineer, site agent, registered safety officer (RSO), site supervisor and any related personnel who will be involved in the lift installation works or any other lift shaft works (as defined in Volume 1 of the Guidelines), should be lined up to participate in the planning process and the endorsement of the lift installation safety plan.

Section 6.17 A copy of the lift installation safety plan should be kept on site for inspections by relevant government officers.

CIC safety guideline (volume 4)

Section 6.2.4 Job specific risk assessments shall be conducted before the commencement of work.

Section 6.2.5 Method statements taking into account the results of the assessments should be formulated and implemented.

Section 6.2.7 All necessary information, instruction, training and supervision shall be provided to all personnel involved.

Code of practice for Safety at Work (Lift and Escalator)

Section 5.1 All personnel, including workers, supervisors and engineers, who might at any time be authorized by the proprietors or contractors to work on a lift / escalator installation should be instructed in appropriate basic safety procedures, including those recommended in the codes. Also the information on appropriate first-aid treatment should be given to the worker, with practical training including in the event of receiving electric shock.

Section 5.2 All the engineers / supervisors should receive further safety training relating to the hazards associated with the installation, thorough examination, inspection, testing, services / maintenance, repair, and dismantling of lifts / escalators and knowledge of safe working practices to be adopted to avoid those hazards, the statutory safety regulations, standards and codes.

Question 1.5 **Weighting: 3**

Are all codes and standards used for design documented?

Audit Criteria

1. Relevant requirement for all codes and standards should be sufficiently identified in the project safety plan.
   - Construction Sites (Safety) Regulations, Chapter 59I [CSSR]
   - Lifts and Escalators Ordinance, Chapter 618
   - Code of Practice on Building Works for Lifts and Escalators, Buildings Department
   - Code of Practice for Lift Works and Escalator Works, Electrical & Mechanical Services Department (EMSD)
   - Code of Practice for Safety at Work (Lift and Escalator), Labour Department
   - Guidelines of Safety of Lift Shaft Works Volume 2, CIC
   - Guidelines of Safety of Lift Shaft Works Volume 4, CIC

Question 1.6 **Weighting: 3**

For the high risk tasks, is there sufficient information regarding the hazards?

Audit Criteria

1. Task specific risk assessment and method statement should be prepared for high risk activities.

Guidance

Address the following exceptionally high risk conditions critically:

i. Safe means of access to and egress from each place of work.
ii. Material transportation by lifting appliances.
iii. Adequate working space and precautions taken when working at any electrical equipment.
iv. Working at height.
v. Work near dangerous moving parts

Question 1.7 **Weighting: 3**

Is there an arrangement for selection and procurement of appropriate protective clothing / equipment?

Audit Criteria

1. Arrangement includes the provision of safety information, written specifications and related data.
2. Auditor should verify the provided PPE standards are related to the risk control measures recommended in the PHA / risk assessment. Otherwise, the answer should be “No”.
3. The identification and selection of PPE to be used can take reference to corporate safety plan with due to consideration of their applicability and suitability.
4. Contractor should provide each of operatives and site supervisory staff (also includes all visitors) with safety helmets with ventilation vents and Y-type chin straps.

Reference :

CIC safety guideline (volume 2)

Section 11.8 All workers, including other trade worker, if any, should be provided with suitable safety harnesses and fall arrestors when they are required to work inside a lift shaft. They should be instructed to wear the harnesses with their lanyards attached to fall arrestors and to lock fall arrestors onto independent lifelines or suitable anchorages.

Section 11.9 All workers, including other trade workers, should be provided with reflective vests when they are required to work inside a lift shaft. They should be instructed to wear reflective garment (vest or equivalent) when they remain inside a lift shaft.

CIC safety guideline (volume 4)

Section 13.1 The Lift Contractor should provide suitable personal protective equipment (PPE) (such as safety helmets with chin straps, safety gloves, hearing protectors, eye protectors, respirators, safety shoes and safety harnesses where necessary) for Lift Workers to use.

Question 1.8 **Weighting: 3**

Is there a safety organisation chart covering necessary personnel with responsibility and communication lines for safety management?

Audit Criteria

1. The project safety organisation chart should be project-specific.
2. The name and position should be clearly showed.
3. The project safety organisation chart should include sufficient personnel which including a top management for the project accountable for leading occupational

safety and health, senior management, site supervisory staff and safety personnel.

4. All positions which can impact safety and health have appropriate safety and health responsibility and communication lines identified in the chart.
5. At least one safety supervisor should be employed for the contract.
6. Safety Supervisor(s) shall be accredited under the Hong Kong Safety and Health Certification Scheme managed by the OSHC.

Question 1.9 **Weighting: 3**

Have the occupational safety and health responsibilities of each grade or position in the organisation clearly been defined?

Audit Criteria

1. Safety organisation chart is developed with assignment of safety responsibility of each grade or position in the organisation.
2. Everyone on site should know their job duties with safety responsibility once they are employed with written job duty list or through briefing.

PART A

Section 2 Process Hazard Analysis (PHA) / Risk Assessment

Question 2.1 **Weighting: 3**

Is there a process hazards analysis (PHA) / risk assessment appropriate to the complexity and hazards of the process?

Audit Criteria

1. There should be a written procedure for formulating PHA / risk assessment.
2. Information sources such as site records, safety inspections findings, incident reports, reports from workers should be considered.
3. High-risk activities such as lifting operation of plant and equipment should be identified in the PHA / risk assessment
4. Auditor should comment and advise the auditee's PHA / risk assessment for all the lift and escalator activities anticipated.

Reference:

Code of Practice on Safety Management

The contractor should establish and maintain a programme for identification of job hazards, assessment of risks, development, implementation and maintenance of safety procedures and risk control measures and review. The programme should aim at:

(a) recording known hazards; (Code of Practice on Safety Management Section 5.11.1)

CIC safety guideline (volume 2)

Section 8.3 The assessment should include but not limited to hazards related to falling objects, fall-from-height, collapse of platform / supporting structures for platform or lifting appliances, defective lifting appliance and lifting gear, improper rigging, absence of lighting and ventilation, electrocution, fire, etc as are relevant to the lift installation works. The assessment should include fire safety measures in carrying out lift shaft works, especially when, if unavoidable, hot works are to be carried out. With reference to each operation involved in the lift installation process, the assessment should recommend safety precautions and state the person responsible to execute the safety measures. The risk assessment report should be signed by the RSO and jointly endorsed by the Project Manager / Engineer of the Lift Installation Contractor and the Project Manager or a site agent of the Main Contractor.

CIC safety guideline (volume 4)

Section 8.2 A task-specific risk assessment should be conducted by the Planning Team before the commencement of Builders' Lift installation works. The RSO should be consulted for completeness of the risk assessment process.

Section 8.3 The assessment should include but not be limited to hazards relating to falling objects, fall-from-height, collapse of platform / supporting structures for platform or lifting appliances, defective lifting appliance and lifting gear, improper rigging, absence f lighting and ventilation, electrocution, fire, etc. as are relevant to the Builders' Lift installation works. The assessment should include fire safety measures, especially if hot work is unavoidable and required to be carried out. With reference to each operation involved in the Builders' Lift Work, result of the assessment should include recommendation of safety precautions and appointment of the person responsible for executing the safety measures. The risk assessment report should be signed by the RSO and jointly endorsed by the Project Manager / Engineer of the Lift Contractor and the Project Manager or a site agent of the Main Contractor.

Question 2.2 **Weighting: 3**

Does the process hazard analysis (PHA) / risk assessment address the process hazards, previous incidents, failures of administrative and engineering controls and also human factors?

Audit Criteria

1. The PHA / risk assessment conducted should be appropriate to the complexity of the process and it should also identify, evaluate, and control the hazards involved in the process.
2. The PHA / risk assessment should focus on equipment, instrumentation, utilities, human actions (routine and non-routine), and external factors that might impact the process.
3. Identification of any previous incident which had a likely potential for the adverse consequences in the workplaces should be made.
4. Engineering and administrative controls applicable to the hazards and their interrelationships such as appropriate application of detection methodologies to provide warning alarms should be considered.
5. Human factors should be included when conducting the review of worker / process and worker / equipment interface.

Reference:

CIC safety guideline (volume 2)

Section 8.3 The assessment should include but not limited to hazards related to falling objects, fall-from-height, collapse of platform / supporting structures for platform or lifting appliances, defective lifting appliance and lifting gear, improper rigging, absence of lighting and ventilation, electrocution, fire, etc. as are relevant to the lift installation works. The assessment should include fire safety measures in carrying out lift shaft works, especially when hot works are to be carried out. With reference to each operation involved in the lift installation process, the assessment should recommend safety precautions and state the person responsible to execute the safety measures. The risk assessment report should be signed by the RSO and jointly endorsed by the Project Manager / Engineer of the Lift Installation Contractor and the Project Manager or a site agent of the Main Contractor.

CIC safety guideline (volume 4)

Section 8.2 A task-specific risk assessment should be conducted by the Planning Team before the commencement of Builders' Lift installation works. The RSO should be consulted for completeness of the risk assessment process.

Section 8.3 The assessment should include but not be limited to hazards relating to falling objects, fall-from-height, collapse of platform / supporting structures for platform or lifting appliances, defective lifting appliance and lifting gear, improper rigging, absence of lighting and ventilation, electrocution, fire, etc. as are relevant to the Builders' Lift installation works. The assessment should include fire safety

measures, especially if hot work is unavoidable and required to be carried out. With reference to each operation involved in the Builders' Lift Work, result of the assessment should include recommendation of safety precautions and appointment of the person responsible for executing the safety measures. The risk assessment report should be signed by the RSO and jointly endorsed by the Project Manager / Engineer of the Lift Contractor and the Project Manager or a site agent of the Main Contractor.

Question 2.3 **Weighting: 3**

Is there a standard PHA / risk assessment methodology?

Audit Criteria

1. There should be written procedure for formulating PHA / risk assessment.
2. Identified hazards should be assessed to determine their likely impact and appropriate risk controls should be developed.
3. PHA / risk assessment sheets only consist of activities, potential hazard, control measures and actions, without probability and consequence should be considered inadequate and the answer should be "No".
4. A proper PHA / risk assessment should be written on an assessment sheet with risk rating for determining priority for controlling hazards and implementation schedule.
5. Auditor should comment on the content of the PHA / risk assessment report.

Reference:

Code of Practice on Safety Management

The relevant industrial undertaking should establish and maintain a programme for identification of job hazards, assessment of risks, development, implementation and maintenance of safety procedures and risk control measures and review. The programme should aim at:

(a) identifying new hazards;
(b) evaluating the risks associated with the hazards;
(c) analyzing the effects or the potential effects resulting from these risks, and
(d) developing and implementing means to eliminate the risks or to reduce them to a tolerable level. (Code of Practice on Safety Management Section 5.11.1)

The risk associated with a hazard is a reflection of the likelihood that the hazard will cause harm and the severity of that harm. The two elements of risk, i.e. likelihood and severity, are independent of each other. The vast majority of hazards are relatively

straightforward and requiring only a simple method of risk rating. The method incorporates a judgment as to whether or not a risk is tolerable (Code of Practice on Safety Management Section 5.11.4)

Question 2.4 **Weighting: 3**

Has the PHA / risk assessment methodology been employed by a team knowledgeable of the process operations?

Audit Criteria

1. The PHA / risk assessment should be conducted by the working team / assessment team on each type of lift installation / alteration and escalator installation works. The working team / assessment team members shall include Engineer / Site Supervisor and RSO.
2. The PHA / risk assessment should be conducted by competent person with sufficient training (not less than a two-day, 12 hours, risk assessment course organized by OSHC or equivalent. Persons who have attended a 27-hr "Safety Training Course for Site Management Staff" training course are considered as trained personnel. RSO is considered as a competent person to conduct risk assessment.)

Reference:

Code of practice for Safety at Work (Lift and Escalator)

As an essence of a safe system of work for lift / escalator, an initial site safety assessment should be made to the work site by a person who is competent to do so before the commencement of every lift / escalator work. Such an experience engineer / supervisor, with adequate experience of safety and health at lift and escalator works (Section 6.6.1)

CIC safety guideline (volume 2)

Section 8.2 As an essence of a safe system of work, a risk assessment should be conducted by the planning team formed under paragraph 6 (Vol 2) on each type of lift installation works, with close attention on those risks from jump lift and machine-room-less lift installations. The RSO should be consulted for completeness of the risk assessment process.

CIC safety guideline (volume 4)

Section 6.4.1 The Main Contractor should establish a planning team consisting of representatives from managerial staff, supervisory staff, safety personnel and workers

from both Main Contractor and Lift Contractor. The team should coordinate on matters relating to the Builders' Lift installation.
Section 8.2 A task-specific risk assessment should be conducted by the Planning Team before the commencement of Builders' Lift installation works. The RSO should be consulted for completeness of the risk assessment process.

Question 2.5 **Weighting: 3**

Does the PHA / risk assessment identify and cover all foreseeable hazards?

Audit Criteria

1. The PHA / risk assessment should identify all foreseeable hazards for the operations.
2. Auditor should comment on the content and coverage of the PHA / risk assessment report.
3. If critical hazards for work acitivites were not identified, the answer should be "No". Auditor should clearly point out areas which need improvement and provide corresponding recommendation to auditee.

Reference:

CIC safety guideline (volume 2)

Section 8.3 The assessment should include but not limited to hazards related to falling objects, fall-from-height, collapse of platform / supporting structures for platform or lifting appliances, defective lifting appliance and lifting gear, improper rigging, absence of lighting and ventilation, electrocution, fire, etc as are relevant to the lift installation works. The assessment should include fire safety measures in carrying out lift shaft works, especially when hot works are to be carried out. With reference to each operation involved in the lift installation process, the assessment should recommend safety precautions and state the person responsible to execute the safety measures. The risk assessment report should be signed by the RSO and jointly endorsed by the Project Manager / Engineer of the Lift Installation Contractor and the Project Manager or a site agent of the Main Contractor.

CIC safety guideline (volume 4)

Section 8.3 The assessment should include but not be limited to hazards relating to falling objects, fall-from-height, collapse of platform / supporting structures for platform or lifting appliances, defective lifting appliance and lifting gear, improper rigging, absence of lighting and ventilation, electrocution, fire, etc. as are relevant to the Builders' Lift installation works. The assessment should include fire safety

measures, especially if hot work is unavoidable and required to be carried out. With reference to each operation involved in the Builders' Lift Work, result of the assessment should include recommendation of safety precautions and appointment of the person responsible for executing the safety measures. The risk assessment report should be signed by the RSO and jointly endorsed by the Project Manager / Engineer of the Lift Contractor and the Project Manager or a site agent of the Main Contractor.

Question 2.6 **Weighting: 3**

Are the recommended risk control measures appropriate for the identified hazards and risk evaluation?

Audit Criteria

1. Auditor should verify the appropriateness of the written control measures for each identified hazards.

Reference:

CIC safety guideline (volume 2)

Section 8.3 The assessment should include but not limited to hazards related to falling objects, fall-from-height, collapse of platform / supporting structures for platform or lifting appliances, defective lifting appliance and lifting gear, improper rigging, absence of lighting and ventilation, electrocution, fire, etc as are relevant to the lift installation works. The assessment should include fire safety measures in carrying out lift shaft works, especially when hot works are to be carried out. With reference to each operation involved in the lift installation process, the assessment should recommend safety precautions and state the person responsible to execute the safety measures. The risk assessment report should be signed by the RSO and jointly endorsed by the Project Manager / Engineer of the Lift Installation Contractor and the Project Manager or a site agent of the Main Contractor.

CIC safety guideline (volume 4)

Section 8.4 The Lift Contractor and the Planning Team should carefully identify and assess the safety risks associated to each operation in the method statement of the Builders' Lift Work. A method statement for the Builders' Lift Work should be prepared, taking into consideration all safety measures from the risk assessment reports. The related precautionary measures should be disseminated to all relevant parties to ensure that the measures are properly understood and strictly followed.

Question 2.7 **Weighting: 6**

Have the recommendations given in PHA / risk assessment promptly been followed?

Audit Criteria

1. Lift / escalator contractor should establish a system to promptly address the PHA / risk assessment findings and recommendations.
2. The recommendations should be followed in a timely manner and documented.

Question 2.8 **Weighting: 3**

Has the PHA / risk assessment result been communicated to all employees involved?

Audit Criteria

1. The PHA / risk assessment result be documented.
2. Communication channels should be established to ensure the PHA / risk assessment is available / assessable to employees.
3. Training on PHA / risk assessment should be provided to all employees involved.

Reference:

CIC safety guideline (volume 2 and 4)

Section 8.1 When hazards cannot be physically eliminated and some elements of risks remain, a safe system of work will be required. The system should be able to identify the potential risks and develop the corresponding intervention measures. It should be effectively communicated and should be precisely and fully implemented by all project participants. Workers, supervisors, engineers and project managers should be trained with the necessary skills and be fully aware of the potential risks and the precautions they need to adopt.

Code of practice for Safety at Work (Lift and Escalator)

The site agent or client's representative should be informed and recorded on the log book whenever work is to be carried out on the lift / escalator. Communication channels should be established among the worker-in-charge on site, the site agent, client's representatives, trade representatives and subcontractors so that assistance can be sought in case of need. Besides, any special precautions or procedures needed to be taken in that particular work site can be made known to all persons involved (Section 6.4).

Question 2.9 **Weighting: 3**

Are all PHA / risk assessment and preventive measures to the recommendations kept

for all phases of the operations?

Audit Criteria

1. PHA / risk assessment for all phases of the operations should be kept.

Reference:

Code of practice for Safety at Work (Lift and Escalator)

The technical data of the lift / escalator should be recorded in a register or file, drawn up once the lift/escalator is put into service. This register or file should be kept up-to-date and compose of:

1. A technical section indicating the technical data of the lift / escalator, including modifications or alterations. Layout drawings and wiring diagrams including amendments should also be attached; (Section 6.5.1)
2. A section where inspection reports with dates, tests with observations as well as records of any accidents are kept (Section 6.5.2)

Question 2.10 **Weighting: 3**

Is there an arrangement to review and update the PHA / risk assessment?

Audit Criteria

1. The PHA / risk assessment should be reviewed regularly.

2. The PHA / risk assessment should be reviewed if there is any significant change for the working procedure. Apart from the regular review, the PHA / risk assessment should also be reviewed or updated if there was an accident happened or a suspension notice received from Labour Department to a process or an activity. Otherwise, the answer to this question should be “No” if no review or updating.

Reference:

CIC safety guideline (volume 4)

Section 8.5 The risk assessment should be regularly reviewed. If there is any significant change to the Builders’ Lift Work concerned, re-assessment should be made to mitigate the risks as far as possible.

PART A

Section 3 Development of safe methods- operating procedures and practices

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Question 3.1 **Weighting: 3**

Are there clear written procedures for all phases of operations which address safety

systems, safety precautions and limits?

Audit Criteria

1. Written procedures with clear instructions for safely conducting work activities for all phases of work should be provided.
2. Written procedures should contain descriptions of tasks that to be performed and safety and health precautions to be taken.

Question 3.2 **Weighting: 3**

Are there clear written process procedures for developing method statements and permit-to-work system?

Audit Criteria

1. A clear written procedure for developing method statement should be available.
2. There are clear written procedures for developing the permit-to-work system to cover all hazardous trade processes.
3. Permit-to work system is implemented.
4. Display of permit-to-work is required.

Reference:

Code of practice for Safety at Work (Lift and Escalator)

For escalator, after making the site safety assessment, a method statement should be provided (Section 6.6.1 (j))

CIC safety guideline (volume 2)

Section 10.5 Permit-to-work system should be implemented for the following hazardous trade processes:

(a) Other trade workers are required to work inside the lift shaft where lift workers are installing a lift. In this case, the Main Contractor should, after consultation with the Lift Installation Contractor, issue a certificate of permit-to-work system endorsed by both the Main Contractor and Lift Installation Contractor to that effect;

(b) When lift workers are required to work below a guided-SWP or a platform lift, the Lift Installation Contractor should implement a permit-to-work system, with a control measure that the switch key of the appliance is kept by a lift worker staying below the platform;

(c) Lift workers are required to work in a deep lift pit. Safety precautions, such as provision of safe access and egress, fall-arrest-system, work-in-pair, proper

lighting and ventilation, should be adopted and implemented by the Lift Installation Contractor;

(d) Hot work or electric arc process is conducted inside or near a lift shaft. The Lift Installation Contractor should also ensure that suitable fire precautions are taken to prevent hot sparks from the process falling onto combustible materials or suspension / safety ropes of a guided-SWP. At the work spot, suitable protective screen of fire retardant nature, such as tarpaulin should be used. If tarpaulin is being used as protective screen, its fire retardant characteristics should meet the requirements of BS 5867-2: 2008 (Type B performance requirements) or other equivalent standards; and

(e) Lift workers are required to work on the car top of an assembled lift car. The permit-to-work system should include the adoption of a switch lock on the Inspection Operation Panel on the car top or similar alternative measure to that effect.

CIC safety guideline (volume 4)

Section 11 Implementation of a Permit-to-Work System

11.1 The Lift Contractor should develop and implement a permit-to-work system for controlling hazardous trade processes of Builders' Lift Work. Each permit should specify its length of validity in terms of shift and the type of trade workers who are required to work inside the lift shaft. However, under no circumstances should any work be allowed to be carried out below a suspended load, including a Builders' Lift car, machine room or heavy parts, etc. being lifted.

11.2 The following are some examples of hazardous trade processes:

(a) Conducting hot work or electric arc welding inside or near a lift shaft;
(b) Rope replacement work;
(c) Builders' Lift-jumping work;
(d) Builders' Lift dismantling work; and
(e) Paint spraying process with the use of flammable liquid.

11.3 A permit-to-work should be recorded in writing with the following details:

(a) Work to be undertaken;
(b) Procedures involved;
(c) Precautions needed;
(d) Emergency procedures in place;
(e) Persons authorized to undertake the work;
(f) Time scale of the work to be undertaken; and
(g) Restrictions on the workplace or equipment.

Question 3.3 **Weighting: 3**

Are occupational safety and health rules available in written form?

Audit Criteria

1. It is necessary to have general safety rules and specific safety rules to cater for various working condition. General safety rules are for reminding persons on site of the general safety issues that should be followed such as wearing safety helmets, safety shoes, prohibition of smoking, etc. The general safety rules should be regarded as the basic measures / practices to be followed by all site personnel including site staff and workers.
2. Specific safety rules should be developed with reference to legal requirement and codes of practice.

Question 3.4 **Weighting: 3**

Are the written working procedures, method statements, permit-to-work and in-house safety rules reviewed regularly?

Audit Criteria

1. The written working procedures, method statements, permit-to-work and in-house safety rules should be reviewed as often as necessary to assure that they reflect current operating practices.
2. The procedures should be up-to-date.

Question 3.5 **Weighting: 3**

Are the working procedures and in-house safety rules readily accessible?

Audit Criteria

1. The working procedures and in-house safety rules should be readily accessible to site personnel.

Question 3.6 **Weighting: 6**

Are there training need analysis and training plan to ensure all site personnel received appropriate safety training?

Audit Criteria

1. Auditor should comment on the training need analysis and training plan. The training plan should include at least the following items otherwise the answer should be “No”.

(a) provision of schedule of training (with tentative date)
(b) location of training
(c) trainer / training provider
(d) the targeted trainees
(e) specification of the courses
(f) type of refresher course to be provided

2. The training courses should at least include mandatory safety training, specific safety training, tool-box training, safety management training, training for operating plant and equipment, etc.
3. Site management staff should attend a training comparable to the 27-hr "Safety Training Course for Site Management Staff" provided by the OSHC or CIC covering safety legislation, elements in safety management and its concepts, safety inspection, accident investigation, risk assessment, work safe behaviour, safety climate index, safe design and CDM, etc.
4. Upon completion of the 27-hr "Safety Training Course for Site Management Staff" course for 5 years, site management staff should attend and complete a revalidation course to revalidate his / her certificate before continuing to engage in his / her role.
5. The safety supervisor should have successfully completed a safety supervisor training or equivalent. The safety supervisor training should be a training comparable to the construction safety supervisor training programme (course duration 43 hours) organized by the OSHC or CIC (course duration is 42 / 43 hours).
6. The employees responsible for carrying out high risk activities should receive relevant silver card training on courses including but not limited Bamboo Scaffolder and Metal Scaffolder, Lift Mechanic and Construction Materials Rigger or Construction Materials Rigger and Signaller.

Reference :

CIC safety guideline (volume 2)

Section 6.6 The content, frequency, and duration of safety and health training for lift workers should be specified in a lift installation safety plan.

CIC safety guideline (volume 4)

Section 14.1 The Lift Contractor should assess the training needs of all Lift Workers. In addition to induction safety training to all Lift Workers, regular safety and health training in relation to Lift Works should also be provided to the workers concerned.

Question 3.7 **Weighting: 3**

Are the working procedures used for safety training?

Audit Criteria

1. The working procedures should be available to form a foundation of training needs for workers.
2. If workers are not fluent in English / Chinese, procedures need to be prepared in a second language that understood by the workers.
3. Pictorial / graphical presentation of safe working procedures / method statements is required for better understanding of front-line personnel.

Reference :

CIC safety guideline (volume 2)

Section 6.6 The content, frequency, and duration of safety and health training for lift workers should be specified in a lift installation safety plan.

CIC safety guideline (volume 4)

Section 14.2 Lift Workers should be explained of the findings of risk assessment reports, the safety procedures of a method statement and the implementation of a permit-to-work system by the Lift Contractor. The safety and health training should include the proper use of PPE and emergency preparedness.

Question 3.8 **Weighting: 3**

Is there an emergency plan with drill programme for effective and prompt response to all emergency situations?

Audit Criteria

1. Auditor should verify the development of emergency plan is corresponding to the potential risks.
2. The emergency situations should at least include fire and accident.
3. Auditor should comment on the adequacy of the programme to cover all emergency situations.
4. The emergency contact list should be displayed prominently.

Question 3.9 **Weighting: 3**

Is there an emergency team and emergency equipment prepared to respond to emergency situations that may affect the safety of the site?

Audit Criteria

1. Auditor should verify the auditee has provided sufficient and competent staff with clearly defined responsibilities for the emergency team.
2. Auditor should verify the emergency team's personnel roles, line of authority and communication corresponding to emergency situations of auditee.
3. Auditor should verify the emergency equipment and first aid facilities on site.

Question 3.10 **Weighting: 6**

Does the safety training on working procedures include emergency preparedness?

Audit Criteria

1. Training in how to handle emergent conditions should be accomplished as well as what to do in emergencies.
2. Communication for emergencies should be available for working team.

Reference:

CIC safety guideline (volume 2)

Section 11.5 The safety and health training should include drills on steps and procedures to be followed in case of emergency or accident. Records of safety training should be properly kept.

CIC safety guideline (volume 4)

Section 14.2 Lift Workers should be explained of the findings of risk assessment reports, the safety procedures of a method statement and the implementation of a permit-to-work system by the Lift Contractor. The safety and health training should include the proper use of PPE and emergency preparedness.

PART A

Section 4 Implementing the system

Question 4.1 **Weighting: 6**

Are there appropriate steps taken to ensure the PHA / risk assessment results used to develop safe working procedures / method statements / permit-to-work?

Audit Criteria

1. Procedures should be available to ensure PHA / risk assessment is used to develop safe working procedures / method statements / permit-to-work and it should also address the followings :
    - The hazards of the process;

- Performed by a competent person or team;
- Promptly address the PHA / risk assessment findings and recommendations.

Reference:

CIC safety guideline (volume 2)

Section 9.3 Method statements for any lift installation works should be prepared, taking into consideration of all safety measures from the risk assessment report. The related precautionary measures should be disseminated to all relevant parties to ensure that they are properly understood and followed.

CIC safety guideline (volume 4)

Section 8.4 The Lift Contractor and the Planning Team should carefully identify and assess the safety risks associated to each operation in the method statement of the Builders' Lift Work. A method statement for the Builders' Lift Work should be prepared, taking into consideration all safety measures from the risk assessment reports. The related precautionary measures should be disseminated to all relevant parties to ensure that the measures are properly understood and strictly followed.

Question 4.2 **Weighting: 3**

Is there a written specification of the control measures for each hazard, which includes safe systems of work, protective clothing / equipment and training?

Audit Criteria

1. Safe work procedure should be developed and implemented such as lockout / tag out; confined space entry; hot work permit; control over entrance etc.
2. Work procedures / method statement / permit-to-work should include specific instructions or details on what steps to be taken or followed.
3. The written control measures should include the applicable safety precautions, training and appropriate information.

Reference:

CIC safety guideline (volume 2)

Section 9.4 The specific safety procedures when applying scaffold-less, jump lift or machine-room-less lift installation methods:

(a) the use of installation appliances;

(b) a heavy-duty lifting appliance to convey machine components of a jump lift to an upper level of a lift shaft; and

(c) the use of scaffolds or a guided-SWP in the installation of a machine-room-less lift.

Section 9.5 If a guided-SWP or a platform lift is used for the lift installation works, the following specific safety precautions, but not limited to, should be adopted:

(a) the control switches, safety devices and / or pedal brakes of the appliance should be functionally checked by a competent person at the beginning of each work shift;

(b) a notice prescribing the maximum number of workers working on the platform should be clearly displayed on the appliance facing the lift shaft opening. In no circumstance should the appliance be overloaded with workers on the platform;

(c) no worker is allowed to work alone on the platform;

(d) no works should be carried out while the appliance is moving;

(e) no other worker should be allowed to enter the lift shaft when the appliance is operating;

(f) worker(s) should immediately anchor safety harness(es) to the independent lifeline(s) before entering the platform;

(g) all portable tools should be properly placed in the tool box and bag when working on the platform;

(h) the platform of the appliance should be properly stopped at appropriate level above the lift pit and locked in an inoperative mode. The switch key should be kept by the worker working inside the lift shaft. A warning notice should be posted at the control of the platform to that effect before entering the lift pit for works;

(i) lift car and frame assembly works should be carried out preferably at the lowest level;

(j) if the lift car and frame assembly works are carried out at the lowest level, the guided-SWP should be properly stopped at appropriate level above the lift pit and locked in an inoperative mode. The switch key should be kept by the worker working inside the lift shaft and a warning notice should be posted at the control panel of the platform to that effect; and

(k) if the lift car and frame assembly works are carried out at the highest level, the guided-SWP should be properly stopped at one level below and locked in an inoperative mode. The switch key should be kept by the worker working inside the lift shaft and a warning notice should be posted at the control panel of the platform to that effect.

Section 11.4 Competent lift workers and lift workers should receive the following training:

(i) mandatory safety training (Green Card) from government recognised organisation;

(ii) not less than half day lift installation related safety training by a lift

installation contractor; and

(iii) advanced safety training (Silver Card) from CIC / CICTA.

CIC safety guideline (volume 4)

Section 8.1 When hazards cannot be physically eliminated and some elements of risks remain, a safe system of work will be required. The system should be able to identify the potential risks and develop the corresponding intervention measures. It should be effectively communicated and should be precisely and fully implemented by all project participants. Workers, supervisors, engineers and project managers should be trained with the necessary skills and be fully aware of the potential risks and the precautions they need to adopt.

Question 4.3 **Weighting: 3**

Is there a written specification for managers and supervisors or personnel responsible for ensuring the implementation of the control measures for each hazard?

Audit Criteria

1. There is written arrangement of the responsibilities of manager, supervisor and personnel for ensuring the implementation of the control measures in lift installation / escalator installation safety plan.
2. Managers and supervisors or personnel responsible for ensuring the implementation of the control measures should be involved in developing safety working procedures / method statements / permit to work.

Question 4.4 **Weighting: 3**

Have the developed safety working procedures / method statements / permit to work been communicated to relevant personnel?

Audit Criteria

1. Verifying the safety records of the briefings, training and tool box talks is needed.
2. It should cover the known potential hazards, the emergency action plan, and safe work practices, and ensuring compliance with the standard.

Reference:

CIC safety guideline (volume 2 and 4)

Section 8.1 When hazards cannot be physically eliminated and some elements of risks remain, a safe system of work will be required. The system should be able to identify the potential risks and develop the corresponding intervention measures. It should be

effectively communicated and should be precisely and fully implemented by all project participants. Workers, supervisors, engineers and project managers should be trained with the necessary skills and be fully aware of the potential risks and the precautions they need to adopt.

Question 4.5 **Weighting: 6**

Are there appropriate steps taken to ensure plant, personal protective equipment, and training provided are in accordance with safety working procedures / method statements / permit-to-work?

Audit Criteria

1. Verifying the arrangement on the provisions required by the safety working procedures / method statement and permit-to-work system is required.

Reference:

CIC safety guideline (volume 2)

Section 10.1 The Main Contractor should continue to manage and administer the permit-to-work system for controlling access to the lift shaft after handing over the lift shaft to the Lift Installation Contractor. The Main Contractor and the Lift Installation Contractor should ensure that all the safety provisions stipulated under the lift installation safety plan are readily in place before applying for the permit-to-work system inside the lift shaft.

Section 10.2 After handing over a lift shaft to the Lift Installation Contractor, a permit from the Main Contractor should be granted to the Lift Installation Contractor for the commencement of the lift installation works.

Section 10.3 The Main Contractor should endorse all permit-to-work systems for all hazardous trade processes. If any such hazardous trade processes involve the safety and health of lift workers only, the systems should be endorsed by the Main Contractor and the Lift Installation Contractor.

Section 10.4 Permit-to-work systems should be enforced on the hazardous trade processes and implemented by Main Contractor and Lift Installation Contractor respectively according to the nature of the hazardous trade processes. Each permit should specify its length of validity in terms of shift and the type of trade workers who are required to work inside the lift shaft.

Section 10.5 The following hazardous trade processes indicate some examples:

(a) other trade workers are required to work inside the lift shaft where lift workers are installing a lift. In this case, the Main Contractor should, after consultation with the Lift Installation Contractor, issue a certificate of permit-to-work system endorsed by both the Main Contractor and Lift Installation Contractor to that

effect;

(b) when lift workers are required to work below a guide-SWP or a platform lift, the Lift Installation Contractor should implement a permit-to-work system, with a control measure that the switch key of the appliance is kept by a lift worker staying below the platform;

(c) lift workers are required to work in a deep lift pit. Safety precautions, such as provision of safe access and egress, fall-arrest-system work-in-pair, proper lighting and ventilation, should be adopted and implemented by the Lift Installation Contractor;

(d) hot work or electric arc process is conducted inside or near a lift shaft. The Lift Installation Contractor should also ensure that suitable fire precautions are taken to prevent hot sparks from the process falling onto combustible materials or suspension / safety ropes of a guided-SWP. At the work spot, suitable protective screen of fire retardant nature, such as tarpaulin should be used. If tarpaulin is being used as protective screen, its fire retardant characteristics should meet the requirements of BS 5867-2: 2008 (Type B performance requirements)7 or other equivalent standards; and

(e) lift workers are required to work on the car top of an assembled lift car. The permit-to-work system should include the adoption of a switch lock on the Inspection Operation Panel on the car top or similar alterative measure to that effect.

CIC safety guideline (volume 4)

Section 11 Implementation of a Permit-to-Work System

11.1 The Lift Contractor should develop and implement a permit-to-work system for controlling hazardous trade processes of Builders' Lift Work. Each permit should specify its length of validity in terms of shift and the type of trade workers who are required to work inside the lift shaft. However, under no circumstances should any work be allowed to be carried out below a suspended load, including a Builders' Lift car, machine room or heavy parts, etc. being lifted.

11.2 The following are some examples of hazardous trade processes:

(a) Conducting hot work or electric arc welding inside or near a lift shaft;

(b) Rope replacement work;

(c) Builders' Lift-jumping work;

(d) Builders' Lift dismantling work; and

(e) Paint spraying process with the use of flammable liquid.

11.3 A permit-to-work should be recorded in writing with the following details:

(a) Work to be undertaken;

(b) Procedures involved;

(c) Precautions needed;

(d) Emergency procedures in place;
(e) Persons authorized to undertake the work;
(f) Time scale of the work to be undertaken; and
(g) Restrictions on the workplace or equipment.

Question 4.6 **Weighting: 6**

Have all site personnel received necessary training according to the training plan?

Audit Criteria

1. Verification is necessary for site personnel to have received relevant training through sample checking on site.
2. Verification of the safety training programme that has been identified and implemented is necessary.
3. Site management staff (project manager, project engineer, or similar rank or above stationed on site) should attend a training comparable to the 27-hr "Safety Training Course for Site Management Staff" provided by the OSHC or CIC covering safety legislation, elements in safety management and its concepts, safety inspection, accident investigation, risk assessment, work safe behaviour, safety climate index, safe design and CDM, etc.
4. Upon completion of the 27-hr "Safety Training Course for Site Management Staff" course for 5 years, site management staff should attend and complete a revalidation course to revalidate his / her certificate before continuing to engage in his/ her role.
5. The safety supervisor should have successfully completed a safety supervisor training or equivalent. The safety supervisor training should be a training comparable to the construction safety supervisor training programme (course duration 43 hours) organized by the OSHC or CIC (course duration is 42 / 43 hours).
6. The employees responsible for carrying out high risk activities should receive relevant silver card training on courses including but not limited to Bamboo Scaffolder and Metal Scaffolder, Lift Mechanic and Construction Materials Rigger or Construction Materials Rigger and Signaller.

Reference:

CIC safety guideline (volume 2)

Section 11.3 Apart from the induction safety training provided by the main contractor, the planning team should plan and arrange regular safety and health training for workers, in relation to the implementation of lift installation works in accordance with

the lift installation safety plan by the lift installation contractor. Workers engaged in lift installation work should be briefed by the lift installation contractor on the findings of the risk assessment report, the safety procedural steps of a method statement and the implementation of a permit-to-work system. The main contractor shall provide induction safety training to all lift installation contractors.

Section 11.4 Competent lift workers and lift workers should receive the following training:
(i) the mandatory safety training (Green Card) from a government recognized organisation;
(ii) not less than half day lift installation related safety training by a lift installation contractor; and
(iii) Safety Training Course for Construction Workers of Specified Trade (Silver Card) from Construction Industry Council Training Academy (CICTA).

CIC safety guideline (volume 4)
Section 14.1 The Lift Contractor should assess the training needs of all Lift Workers. In addition to induction safety training to all Lift Workers, regular safety and health training in relation to Lift Works should also be provided to the workers concerned.

Question 4.7 **Weighting: 6**

Are there procedures to ensure the proper use of protective clothing / equipment and the provision of training and instruction?

Audit Criteria

1. Auditor should verify there is procedure(s) to instruct, train and practice in use of PPE.
2. Training should refer to the manufacture’s instruction and the importance of following them.
3. Ensure proper use of PPE through routine supervision and through monitoring via safety inspection.
4. The answer should be “No” if worker(s) does not use his / her PPE properly.

Question 4.8 **Weighting: 6**

Have drills and exercises for all emergency situations been conducted and evaluation reports been prepared in accordance with the programme?

Audit Criteria

1. Auditor should verify the drill evaluation report.
2. Check records of drills and verify with workers or staff on site.
3. Comment on the effectiveness of the drills is necessary.
4. Weaknesses uncovered during drills of the emergency are quickly corrected.

Reference :

CIC safety guideline (volume 2)

Section 11.5 The safety and health training should include drills on steps and procedures to be followed in case of emergency or accident. Records of safety training should be properly kept.

Question 4.9 **Weighting: 3**

Are workers provided with appropriate masks with high protection level and high breathability?

Audit Criteria

1. It is strenuous for workers to wear a mask for extended periods of time. Therefore, apart from the protection level of face masks, their breathability and comfortability also matters to users. Delta P (i.e. Differential Pressure) is the measurement value of mask breathability, which reflects its airflow resistance. The higher the value of Delta P, the higher the air flow resistance of a mask.
2. The masks provided to workers shall comply with the following requirement:
3. High protection level such as ASTM Level 3 or equivalent;
4. Low Delta P (Delta P $\leq$3).
5. Purchasing record such as receipt should be submitted as documentary evidence.
6. Verification is necessary for sampled workers met on site. The answer should be "Yes" if at least 90% of random sampled workers are provided with appropriate masks. Otherwise, the answer should be "N/A" since this is not a compulsory item.

PART A

Section 5 Monitoring the system

Question 5.1 **Weighting: 6**

Have the effectiveness of safety working procedures, method statements or specialised permit-to-work been regularly checked by field inspection?

Audit Criteria

1. Verifying the inspection records is required.
2. Inspections should be carried out at regular intervals.

Reference:

CIC safety guideline (volume 2)

Section 6.7 Before the handover of a lift shaft, the planning team should develop a 'handover checklist' for checking and recording the conditions of the lift shaft to be taken over by the Lift Installation Contractor.

Section 7.1 The Main Contractor and the Lift Installation Contractor should keep proper records of all inspection records for safety provisions.

CIC safety guideline (volume 4)

Section 6.3

6.3.1 Builders' Lift shall be only be operated by a Competent Operator.

6.3.2 The Lift Contractor shall employ a Registered Examiner to carry out a test and examination of the Builders' Lift after installation, every major alteration or alteration of height of the Builders' Lift before allowing it to be used, so as to ensure it is in safe working order and a proper state of repair.

6.3.3 Builders' Lift shall be properly maintained and periodically inspected, cleaned, oiled and adjusted by Lift Contractor.

6.3.4 Registered Examiner shall be employed to carry out a test and examination of Builders' Lift at intervals not exceeding six months.

6.3.5 Builders' Lift Work shall be carried out by Competent Lift Worker(s) or Lift Workers under supervision by Competent Lift Worker(s).

Question 5.2 **Weighting: 3**

Has a comprehensive inspection checklist and inspection programme been developed and stipulated in the safety plan?

Audit Criteria

1. The inspection programme and inspection checklist should be project-specific.
2. Auditor should comment on the adequacy of the inspection programme and the coverage of inspection checklist.
3. Inspection checklists and forms are available with a schedule which sets out when inspection is done.
4. Electronic inspection checklist on online platform / mobile applications with proper storage function for the contract period could be accepted as inspection records.

Reference:

CIC safety guideline (Volume 2)

Section 6.9 Strict supervision should be administered on both routine works and hazardous trade processes. For routine works, site supervisions of the Lift Installation Contractor should conduct pre-work check on a half-day basis with focus on the use of safety devices including personal protective equipment (PPE). For hazardous trade processes inside a lift shaft, the planning team should appoint suitable personnel to oversee the permit-to-work systems.

Question 5.3 **Weighting: 3**

Are monitoring team members chosen for their knowledge, experience, and familiarity with the task?

Audit Criteria

1. Verify the qualifications and experience of monitoring team members.
2. Safety inspection should be conducted by special assigned personnel such as safety supervisor or someone trained (at least completed a one-day (8 hours) safety inspection training course or 27-hr "Safety Training Course for Site Management Staff" provided by the OSHC or CIC or equivalent) to take up the monitoring role.

Reference:

CIC safety guideline (Volume 2)

Section 6.9 Strict supervision should be administered on both routine works and hazardous trade processes. For routine works, site supervisors of the Lift Installation Contractor should conduct pre-work check on a half-day basis with focus on the use of safety devices including personal protective equipment (PPE). For hazardous trade processes inside a lift shaft, the planning team should appoint suitable personnel to oversee the permit-to-work systems.

Section 9.8 Any design and method statement for the construction of anchorages, including those temporary anchorages, for material and equipment lifting, plant operation, installation of lift appliance, connecting independent lifeline, or any other uses must be checked by a Registered Professional Engineer (either appointed by the Main Contractor or the Lift Installation Contractor) for certification of the load bearing capacity and the fixing details of the anchorages.

CIC safety guideline (Volume 4)

6.3.5 Builders' Lift Work shall be carried out by Competent Lift Worker(s) or Lift Workers under supervision by Competent Lift Worker(s).

Question 5.4 **Weighting: 6**

Are there appropriate steps taken to ensure that the site inspections and follow up actions are implemented in accordance with the inspection programme?

Audit Criteria

1. Planned safety inspection should be done daily for the whole project with records for follow-up and analysis.
2. Identified problems are recorded and appropriate corrective action is developed.
3. Inspection reports are provided to relevant managers and supervisors for follow up action.
4. Person to follow up the non-conformance items should be identified and target date for completion should be specified.
5. Corrective action reports show that safety problems are resolved in a timely manner.

Question 5.5 **Weighting: 6**

Are there appropriate steps taken to collate and analyse the results of safety inspections and causes / trends in accident / incident?

Audit Criteria

1. Inspection records should be kept.
2. Trend analysis of safety inspection results should be done at least half yearly to provide reference for preventive safety programme.
3. Maintaining accident statistics and performing trend analysis serve the purposes of identifying trends and developing action plan to prevent recurrences. The arrangement should include:
    a. The establishment of classifications of accident to group similar data for analysis.
    b. Examples are the use of histogram or bar chart to show that a particular type of accident is increasing or decreasing in a period of time to assist the identification of the seriousness and to arrive at a control strategy.
    c. Use the analysis to provide objective support and justification for budget requests, training programs, or other management safety initiatives.

Reference

Code of practice on safety management

Sections 5.5.4 A contractor should keep full records of each inspection with details

of both positive and negative findings. Such reports should be analysed to identify repeated substandard situations and their underlying causes. Records of inspections should be kept for a period of not less than 3 years.

Question 5.6 **Weighting: 3**

Has internal safety audit / safety review been conducted to ensure continuous improvement to the safety management system?

Audit Criteria

1. Internal safety audit / safety review should be conducted to assess the effectiveness and thoroughness of the safety management system. If an internal audit report provided does not fulfill the requirement on competence, independence and coverage, the answer should be "No".
2. There is an arrangement for internal audit and yet if the first internal safety audit is not due when the first audit is conducted, the answer should be "N/A".
3. Internal safety audit / safety review should be conducted not less than once in each six months period beginning with the day on which the undertaking comes into existence.
4. If the internal safety auditor is an employee of the contractor, the contractor should only require him / her to carry out work relating to conducting the safety audit.

Auditor Guidance

1. Safety audit / safety review for assessing the safety management system specified in "Code of Practice on Safety Management" issued by Labour Department would be considered acceptable.
2. For Lift NSC has the corporate level safety audit / review conducted for new installation division complied with "Code of Practice on Safety Management" would be acceptable. The contract should be visited during the safety audit / review if the contract is commenced and available.

Question 5.7 **Weighting: 6**

Have the safety practices, work safe behaviour been regularly observed and interviews with relevant staff been conducted regularly?

Audit Criteria

1. Work Safe Behaviour Program should be used to observe and reinforce work safe behaviour and practices of staff.

2. Appoint competent WSB observers who have completed the 12-hour Work Safe Behaviour Workshop organized by the OSHC or equivalent. Upon successful completion of the 12-hour "Train-the-Trainer for Work Safe Behaviour and Safety Climate Index Survey" course (WSBCIST) offered by OSHC, personnel could deliver internal training of WSB observers. The course duration of this internal training of WSB observers should be at least 3 hours. The senior management officer and Competent Observer(s) shall not be the Safety Manager or Safety Officer.
3. WSB should cover at least one high risk site activity such as working at height (of not more than 15 observation items on each observation checklist) at any one time.
4. Morning briefings, tool-box talks and daily meetings to promote work safe behaviour and safe practices should be implemented.
5. Use a work safe behaviour programme with reference to the guidebook "Implementing The Work Safe Behaviour (WSB) Programme" issued by the OSHC.
6. Contractor should identify the major high risk activities according to the construction cycle.
7. Based on the major high risk site activities identified, create and develop relevant work safe behaviour checklists and conduct observations with observed data analysed for behaviour interventions. It should be not more than 15 observation items on each observation checklist.
8. Analyse the work safe behaviour result and prepare the WSB report.
9. Develop and implement an action plan according to the analysed result .
10. The effectiveness of WSB programme should be evaluated.
11. Auditor is required to verify the progress of WSB Programme during safety audit. Otherwise, the answer should be "No".

Question 5.8 **Weighting: 3**

Have safety contest awards or recognition for good safety performance of individual been conducted regularly?

Audit Criteria

1. Each project should organize "Safety Worker / Staff" Award promotion programme half yearly as a start for the Initial Stage.
2. The award should have some forms of recognition of the safety performance of the staff either in cash coupon, trophy, certificate, or the like.
3. A simple presentation ceremony of the award is also accepted as part of the safety promotion programme. It can be held before the monthly safety

committee meeting, during morning briefing, or on similar occasions.

4. Alternatively, other equivalent safety promotion activities to improve the workers' sense of safety awareness and to present awards could be done such as: safety award given and the safety records of each group in each month announced.
5. There should be a venue, an event or an occasion that specified in the safety plan to present the safety contest awards or recognition for good safety performance of individual.

Question 5.9 **Weighting: 3**

Does the committee meeting meet regularly and have representatives from all parts of every area of responsibility?

Audit Criteria

1. Safety committee meeting should be held monthly and verification is necessary through both verification of meeting minutes and interview of committee members.
2. Auditor should comment on the composition of the representatives of the safety committee.

Auditor Guidance

1. The answer should be "Yes" if lift NSC representative(s) had attended site safety committee meeting organized by the main contractor.
2. For lift company has the divisional safety committee meeting, the arrangement would be acceptable.

Question 5.10 **Weighting: 6**

Does the committee meeting cover all the appropriate occupational safety and health matters?

Audit Criteria

1. Auditor should comment on the appropriateness of matters discussed in the committee meeting.
2. Auditor should verify the meeting minutes and interview of committee members.
3. Safety committee meeting should actively monitor and recommend action on occupational safety and health performance.
4. The agenda for the site safety meetings should include discussion on the causes of accidents and the preventive measures.

Auditor Guidance

1. The answer should be “N/A” if lift NSC did not organize its own safety committee meeting.

Question 5.11 **Weighting: 6**

Have prompt actions been taken according to the recommendations of the committee?

Audit Criteria

1. The agenda and minutes of the safety committee meetings are circulated in the site so everyone has the chance to raise issues and to know what is going on.
2. Safety committee plays an active role in managing and improving site safety and health.

Auditor Guidance

1. The answer should be “N/A” if lift NSC did not organize its own safety committee meeting.

Question 5.12 **Weighting: 6**

Is there a detailed procedure to ensure that all accidents / incidents and dangerous occurrences are promptly reported and recorded?

Audit Criteria

1. The investigation procedure should be project specific. If the investigation arrangement is modified from the corporate one, it should be stated so in the chapter on “Accident / Incident Investigation” in the safety plan and the project team should be well aware of it.
2. Auditor should check the document such as the safety plan to find out whether there is a procedure that can meet the criteria of prompt reporting and recording of accident and dangerous occurrence (including time frame). The detailed procedure refers to procedure that is capable of ensuring all accidents and dangerous occurrences are promptly reported and recorded.
3. Definition of accident and incident is to be defined to ensure all site personnel understand the difference.
4. Report accidents, incidents and dangerous occurrence as defined in the Factories and Industrial Undertakings Regulations to LD in the prescribed Form 2 with Supplementary Information on Accidents on Construction Sites & Dangerous

Occurrence Report Form.

5. Notify the CM immediately of all 'reportable accidents' as defined under the Factories and Industrial Undertakings Regulations and of the accidents, incidents to be reported in prescribed forms using smartphone or the web through the Housing Authority Safety Alert Module and followed by submission of a hard copy of the completed documents to the CM under the accident, incident reporting procedures of the HD set out at the Housing Authority Site Safety Website and comply with the procedures.
6. Auditors need to comment on “prompt” reporting and recording. It should be within a reasonable period of time such as serious accident immediately reported to site agent / project manager etc. Reporting to Labour Department as required by regulation can be used as a reference.
7. A reporting system should be developed with help of flowchart for easy understanding and communication. It should be displayed on site.
8. Auditor should also interview site personnel such as workers, foreman, etc. to verify the effectiveness of the procedure.
9. There should be no “N/A” even though there is no accident. Auditor should verify the accident reporting procedures as well as verify with site personnel to ensure they understand the procedure. The answer should be “No” if there is no detailed procedure or the verification confirms procedure not effective.

Question 5.13 **Weighting: 6**

Is there a detailed procedure to ensure that all accidents / incidents and dangerous occurrences are promptly investigated?

Audit Criteria

1. Auditor should check the document such as the safety plan to find out whether there is a procedure that can meet the criteria of prompt investigation of accident and dangerous occurrence (including time frame). The detailed procedure refers to procedure that is capable of ensuring all accidents and dangerous occurrences are promptly investigated.
2. Auditors need to comment on “prompt” investigation. It should be within a reasonable period of time such as serious accident is immediately investigated by the safety officer / project manager etc.
3. Auditor should also interview site personnel such as workers, foreman, etc. to verify the effectiveness of the procedure.
4. There should be no “N/A” even though there is no accident. Auditor should verify the accident reporting procedures as well as verify with relevant site personnel

such as project manager / site agent (or personnel who is responsible for carrying out the investigation) to ensure they understand the procedure.

5. The answer should be "No" if there is (a) no detailed procedure; (b) not ALL accidents / dangerous occurrences investigated promptly; (c) the verification confirms procedure not effective.
6. Auditor should verify the auditee has provided competent and well trained staff with clearly defined responsibilities for accident / incident investigation and reporting.
7. Trained personnel (at least completed a one-day (8 hours) accident investigation training course organized by OSHC or equivalent) to carry out accident / incident investigation.
8. Simple incident can be done by individual but serious one should be done by a team consists of Registered Safety Officer (RSO).
9. There should be an investigation report on the detailed cause of the accident or dangerous occurrences and measures to prevent recurrence.

Auditor Guidance

1. Persons who have attended a 27-hr "Safety Training Course for Site Management Staff" training course and Registered Safety Officer are considered as trained personnel.

Question 5.14 **Weighting: 6**

Does the accident / incident investigation report cover at least the circumstance, causes of accident and recommendations for preventing the recurrence of accident / incident?

Audit Criteria

1. Accident / incident investigation is a reactive monitoring function in SMS. It helps to find out the root causes of incidents and come up with remedy action to prevent recurrence of accidents.
2. Auditor is required to comment on the whole accident report. If there are too many accidents, auditor can get the overall summary of the causes of the accident before deciding which accident reports are sampled to comment. Generally, serious accidents such as fatal or dangerous occurrence (DO) should be the priority. Accidents that are frequently occurred should also look into. The comment could be purely based on the information of the accident report. Where necessary, verification with knowledgeable person will help in arriving at a

desirable and acceptable recommendation.

3. A copy of the selected accident report(s) with related information (if any) should be submitted as evidence for OSHC verification.
4. If the recommendations on the report could not prevent the recurrence of similar accident / incident, the answer should be “No”. The answer could be “N/A” if there is no accident.
5. If the quality of audit reports such as skill of writing, investigation technique, etc (not including the basic principle of having the recommendations capable to prevent the recurrence of similar accident) need improvement, the answer could be “Yes” and the auditee should be advised accordingly. At the same time, the related audit questions concerning the competence of the person responsible for accident investigation should be suitably reflected. Please be reminded that even though the persons-in-charge are generally considered competent based on their title / training certificate obtained, auditor still can comment on their competency based on the audit findings ending up with “non-conformity”.
6. All accident / incident reports should be endorsed by Project Manager / in-charge. Relevant remedy action with responsible action party should be addressed with tentative rectified date.
7. Standard accident / incident reporting forms as well as statement of facts from witness should be developed serving as supporting evidence.
8. Root Cause Analysis was submitted onto the Safety Alert Module for serious / fatal accidents, accidents involving hospitalization in Intensive Care Unit and operations, dangerous occurrences, near miss / incidents with potential serious consequence.

Question 5.15 **Weighting: 6**

Have prompt actions been taken on the basis of the results of the investigations?

Audit Criteria

1. Auditor should check the document such as the safety plan to find out whether there is a procedure that can meet the criteria of prompt actions are taken on the basis of the results of the investigation.
2. Auditors need to comment on “prompt action”. It should be within a reasonable period of time such as control measures for serious accident are taken immediately.
3. Auditor should also interview site personnel such as workers, foreman, etc. to verify the effectiveness of the procedure.
4. Brief facts of accident in form of “Safety Alert” should be published as reminder

and promotion.

5. Accident / incident cases, investigation results and trends should be reported to safety committee monthly for endorsement of accident prevention programme.
6. The answer could be “N/A” if there is no accident occurred.

PART B	**Work Site Conditions**
Section 6	**Working at Height**

Question 6.1. **Weighting: 6**

Is a safe means of access (and egress) used, e.g. to the machine room, top of lift car, lift / escalator pit, etc.?

Audit Criteria

1. Checking the provision of safe means of access and egress.

Reference :

CIC safety guideline (Volume 2 and Volume 4)

Section 6.14 Safe access to deep lift pit should be provided in the following ways:

(a) Where practicable for lift pit over 2.5 m deep, a separate permanent access point instead of cat ladder is recommended to be provided to facilitate the safe access to the lift pit;

(b) If the layout of the building so permits, it is strongly advisable that for the pit depth that exceeds 1.6 m, an access door shall be provided to the pit in the building design / planning stage. The design of the permanent access door should be in compliance with the Code of Practice on The Design and Construction of Buildings and Building Works for the Installation and Safe Use of Lifts and Escalators 2011 paragraphs 3.8.2 & 3.8.3;

(c) It is also recommended to provide a working platform or reserve space for the working platform if the pit depth exceeds 2.5 m for future maintenance and repair works; and

(d) However, if it is impracticable to maintain a permanent access point and to erect a working platform inside a deep pit.

Code of Practice for Safety at Work (Lift and Escalator)

Section 6.6.1 i) For escalator works: Safe and easy ways and access routes with sufficient headroom to the machinery spaces should be provided.

Section 10.7 The landing plates of the driving and return stations, if required to be removed, should be stored in a safe location. They should be placed back to cover the

void space at the driving and return stations immediately after work is completed or temporarily suspended.

Question 6.2 **Weighting: 6**

Has every worker been worked in a safe place of work for all activities?

Audit Criteria

1. Checking the provision of working platform is the top priority in protection of workers working at height.
2. For any work-above-ground, suitable working platforms such as hop-up platform and step platform should be the primary means of support to be considered for use. Proper working platform should be used for working at height involving a possible fall of 2 metres or more.
3. For working involving a possible fall of less than 2 metres but more than 900mm, light-duty working platform such as hop-up platform and step platform should be provided with guard-rails and toe-boards.
4. Unless in very exceptional circumstances that working platforms or light-duty working platforms are impracticable to be used, use of ladders for work-above-ground should be prohibited. Under such exceptional circumstances where ladders have to be used, task-specific risk assessment should be conducted and safe system of work, such as a permit-to work system, should be formulated and implemented beforehand.
5. Checking correctness of the worker's safety harness, safety net and fall arrestor system.
6. Referring to the "Guidance Notes on Classification and Use of Safety Belts and their Anchorage Systems" issued by Labour Department, eyebolt / fixed anchorage should be assessed by "Professional Engineer of the Structural Discipline" if the independent lifeline is connected. Eyebolt / fixed anchorage for fall protection purpose with statutory form – Form 6 and Form 7 which is certified by professional engineer other than "Structural Discipline" will be considered as non-compliance. For details, please refer to Labour Department's guidance notes (GN).

Reference :

CIC safety guideline (Volume 2)

Any temporary facility / installation including scaffoldings, formworks, platforms, plankings and strutting etc. inside such lift shafts should be constructed of non-combustible materials (Section 6.10).

If a metal or bamboo scaffold is used for installation of a machine-room-less lift, the planning team should:

(a) examine the loading capacity of the metal or bamboo scaffold;
(b) prepare and approve a design plan to reinforce the scaffolds during the conveying of components at the top level; and
(c) modify the scaffolds to suit the purpose (Section 6.11).

If a guided-SWP or a platform lift is used, lift shaft protection cages should not be opened from outside when the top and middle guards behind the cages are not kept in their proper positions, except for the reinstatement of the guards by workers who have hooked their lanyards of their safety harnesses onto secure anchors or independent lifelines (Section 7.16).

A log should be kept to register the locations of the door keys or the person-in-charge for holding such key(s) (Section 7.17).

Openings for landing doors, emergency doors, inspection doors and access panels to the lift shaft should be properly covered and protected to prevent any working personnel or objects falling from height (Section 7.19).

Provision of personal protection equipments to ensure the safety and health of workers are considered as last resorts or secondary protection to cope with engineering measures to eliminate safety and health hazards. As a secondary protection against risks of fall from height inside a lift shaft, fall arresting system should be provided, properly maintained and used by all parties concerned (Section 11.6).

The Main Contractor should install at least 3 sets of independent lifelines inside a lift shaft before handing over to the Lift Installation Contractor. At least one independent lifeline should be located near the door openings of a lift shaft. The independent lifelines should be anchored to eyebolts fixed by the Main Contractor. The position of lifelines should be defined in a lift installation safety plan. The Lift Installation Contractor may require to modify or adjust its position (Section 11.7).

All workers, including other trade workers, if any, should be provided with suitable safety harnesses and fall arrestors when they are required to work inside a lift shaft. They should be instructed to wear the harnesses with their lanyards attached to fall arrestors and to lock fall arrestors onto independent lifelines or suitable anchorages (Section 11.8).

All workers, including other trade workers, should be provided with reflective vests when they are required to work inside a lift shaft. They should be instructed to wear reflective vests when they remain inside a lift shaft (Section 11.9).

No worker is allowed to enter a lift shaft if he is not wearing a safety harnesses with a

fall arrestor and a reflective garment (Section 11.10).

CIC safety guideline (Volume 4)

Section 7.4

7.4.1 The Main Contractor and the Contractors involved shall take adequate steps to prevent any Builders' Lift Worker from falling from height. Whenever feasible, suitable working platforms, guard-rails, toe-boards and coverings for openings, etc. should be provided for use as appropriate.

7.4.2 If this is not practicable, the contractors concerned should provide a protection cage / safety net and personal fall protection equipment as an alternative. In particular, the Main Contractor should provide at least 3 sets of independent lifelines inside the lift shaft before works are to be carried out. All the lifelines shall be securely fixed to

suitable anchorage. Where the provision of independent lifelines inside the lift shaft is not practicable, suitable alternative anchorage system should be provided with reference to the Guidance Notes on Classification and Use of Safety Belts and their Anchorage Systems published by the Labour Department. The contractors should ensure workers who have been provided with safety harnesses and suitable fittings to make full and proper use of the fall protection equipment.

7.4.3 During the lift-jumping work, lift shaft landing with its doors being kept open to facilitate the works shall be protected by suitable guard-rails and toe-boards of adequate strength, e.g. by lift shaft protection cage / safety net to prevent fall of person. The vicinity of the landing concerned should also be cordoned off, to prevent unauthorised entry by others. Whenever the guard-rails and toe-boards were required to be removed for the work, workers working near the unprotected lift shaft with the risk of fall from height shall attach their safety harnesses to suitable anchorages before approaching / entering the lift shaft. Landing doors, guard-rails and toe-boards should not be allowed to remain open or be removed any longer than necessary.

Code of Practice for Safety at Work (Lift and Escalator)

7.1.4 The provision of a safe place of work or a platform for the persons working on lift / escalators should always be the first choice. If this is impracticable and there is a risk for a person working in the lift well, the escalator wellway or any other places to fall more than 2 m, a suitable safety net should be erected or the person should wear a safety harness / belt with suitable lanyard securely attached to an independent lifeline or an anchorage as an alternative [Regulation 38Q of the CS(S)R].

7.1.5 The use of safety nets would be a better alternative than the use of safety

harnesses in certain instances. Some of the examples are as follows:-

a) where many workers working in one location, or;

b) where large open areas or long loading edges expose workers to height hazards and the use of safety harness is deemed impractical or not feasible for the work method. The work of erecting and dismantling safety nets should be carefully planned and supervised and only undertaken by competent working personnel.

7.1.6 Safety nets should be fitted as close to the working surface as possible, and in no case further below than the maximum distance marked on the label attached to the net which would be either 1m or 6m. The gap between a net and the building should be as close as practicable but in no case should this be more than 200 mm.

Question 6.3 **Weighting: 6**

Are inspections of scaffolds / working platforms carried out by competent person at regular intervals and results recorded?

Audit Criteria

1. Working platform including bamboo scaffold, metal scaffold, power-operated elevating work platform, light-duty working platform should be considered.
2. Display of properly filled in prescribed form of bamboo / metal scaffolding if applicable Auditor should check and comment on result of inspection and recommendation, competent person, date, name and signature and inspection date should be the same date as the filling date.

Reference :

CIC safety guideline (Volume 2)

Generally, the Main Contractor should be responsible for the erection and dismantling, alteration, if required under the contract, of scaffold inside a lift shaft. The Lift Installation Contractor should inspect the conditions of the scaffold during the handover of the lift shaft. After the handover, the Lift Installation Contractor should properly use and maintain the scaffold in good conditions at all times and timely report to the Main Contractor for any identified damage on scaffold for immediate repair or replacement. The Lift Installation Contractor should not alter and cut any members of a scaffold (Section 7.7).

Form 5 issued under the Construction Sites (Safety) Regulations should be displayed on the scaffold at ground floor entrance of a lift shaft or at the lift shaft door opening where the lift shaft platform is located (Section 7.8).

If a section of a scaffold is required to be altered to facilitate lift car assembly, the altered scaffold should be supported and reinforced by designated anchors on the wall

of a lift shaft in accordance with the designed requirements stipulated in the lift installation safety plan (Section 7.9).
The Lift Installation Contractor should check the loading capacity of a scaffold used for the installation of a machine-room-less lift. Each machine component of the lift should be properly rigged when being conveyed onto the structures of the lift shaft top so as to avoid any sudden impact onto the scaffold due to the irregular movement of a suspended machine component (Section 7.10).

CIC safety guideline (Volume 4)
Section 6.3 Consideration during Operation Period (Owner of Builders' Lift)
6.3.1 Builders' Lift shall be only be operated by a Competent Operator.
6.3.2 The Lift Contractor shall employ a Registered Examiner to carry out a test and examination of the Builders' Lift after installation, every major alteration or alteration of height of the Builders' Lift before allowing it to be used, so as to ensure it is in safe working order and a proper state of repair.
6.3.3 Builders' Lift shall be properly maintained and periodically inspected, cleaned, oiled and adjusted by Lift Contractor.
6.3.4 Registered Examiner shall be employed to carry out a test and examination of Builders' Lift at intervals not exceeding six months.
6.3.5 Builders' Lift Work shall be carried out by Competent Lift Worker(s) or Lift Workers under supervision by Competent Lift Worker(s).

Question 6.4 **Weighting 6**

Are all working platforms including those on car tops installed with suitable guard-rails and toe-boards?

Audit Criteria

1. Checking working platform(s) conform to legal requirement.
2. Working platform including bamboo scaffold, metal scaffold, power-operated elevating work platform, light-duty working platform should be applicable.

Reference :
Code of Practice for Safety at Work (Lift and Escalator)
Working at Height (Section 7.1)
Where work cannot be safely carried out on the ground, from any part of a building or other permanent structure, suitable scaffolds with proper working platform(s) should be provided for working personnel [Regulation 38B of the CS(S)R].
Guard rails of 900 mm to 1150 mm in height should be provided on the car top where

the worker may fall via the gap between the lift and the well enclosure. Such guard rails should be sufficiently strong and secure [Regulation 38P of the CS(S)R]. (Section 9.2.3)

Question 6.5 **Weighting 6**

Are all floor openings and lift shaft openings provided with suitable guard-rails and toe-boards or properly covered?

Audit Criteria

1. Openings generally refer to superstructures which have floor openings, lift shaft openings and stairway openings on site.
2. Cover all floor openings or provide railings around floor openings and voids to prevent people falling from height as follows:
   a. Cover all floor openings with solid and sound material constructed and securely fixed in position to prevent the fall of persons. These covers shall be clearly and boldly marked to show its purpose; or
   b. Provide rigid guard-rails and toe boards around floor openings with, including but not limited to, the following:
      i. Secure top railings at a height of 900 mm to 1150 mm;
      ii. Secure middle railings at a height of 450 mm to 600 mm; and
      iii. Secure toe boards of 200 mm high above the surface of the slab where no permanent upstand exists.
3. In order to foster site safety in prevention of falling objects, HA has enhanced its contractual requirement. The contractor is required to incorporate full height temporary protective barriers to lift shaft openings during the course of installation. Otherwise, the answer of this question should be “No”.

Reference :

The performance specification of full height temporary protective barriers to lift shaft openings is provided as follow:

- Function as protection against fall of persons and falling objects through lift shaft openings from the respective floor levels;
- Be locked when no access of person or material and no work inside lift shaft;
- Be self-closing and readily open from the inside of lift shafts at any time without the need of separate key operations. Such self-closing operation shall impose minimal momentum without affecting the stability of a person’s foothold.
- Height of steel gates: full height of the lift shaft opening;
- Mesh size for steel gates: maximum 50 x 50 mm;

- Dismantle and clear away the steel gates properly and safely when they are not required anymore;
- Ensure that no part of the temporary steel gates shall obstruct the installation of the permanent lift doors and architraves;
- Ensure that other permanent works such as wall and floor finishes and tiles, where affected by this temporary installation, shall be completed to contractual requirements upon dismantling of the temporary steel gates;
- Maintain the steel gates to operate in a proper, efficient and safe manner until the permanent cover is provided by the Nominated Sub-contractor for lift installation and clear away.

CIC safety guideline (Volume 1)

Section 7.4 For openings above lift shaft in lift machine room, they should be protected by ferrule or concrete curb and covered up with fixed wooden board or metal plate. Ventilation openings should also be covered with mesh and reinforcement.

CIC safe guideline (Volume 4)

Section 6.2.15 Protection Barrier for Landings

Full height landing gates with suitable toe-board or equivalent provided by the Main Contractor at each landing opening should be provided and maintained at any time. If it is unavoidable to temporarily open or remove it for Builders' Lift work, a suitable fall protection such as adequate strength guard-rail / barrier shall be provided by the Lift Contractor to protect worker from falling from height.

Section 6.2.16 Protection Barrier for Openings between Cathead and Protection Deck

Full height landing gates with suitable toe-boards or equivalent should be designed / installed / maintained / dismantled / relocated by the Main Contractor at the floor(s) between the Cathead and protection deck until the landing doors have been installed.

Question 6.6 **Weighting 6**

Have all suspended working platforms been installed based on all factors affecting their stability in the site?

Audit Criteria

1. The suspended working platform should be installed according to the approved design.
2. All loose items of suspended working platform are securable to fixed structures so that, the items will not be disintegrated or damaged.

3. Emergency stop device should be located at each operator control station and other places where emergency stop may be required.
4. The answer should be "N/A" if no suspended working platform was observed during on-site verification.

Question 6.7 **Weighting 6**

Are all suspended working platforms properly examined, tested, inspected and operated by competent personnel?

Audit Criteria

1. Updated inspection records and examination records should be verified.
2. Testing and thorough examination of the suspended working platform by a competent examiner.
3. Inspection of suspended working platforms should be carried out by the competent person who are specified in Code of Practice for Safe Use and Operation of Suspended Working Platforms. Verifying the correctness and completeness of inspection records (Form 1 for suspended working platform) is needed.
4. Every person operating the suspended working platform or working thereon should:
    - be at least 18 years old;
    - be fit, agile and not height phobic;
    - have undergone training that is either recognized by the Commissioner or provided by the manufacturer of the suspended working platform or its local agent; and
    - have obtained a certificate in respect of such training from the person who provided the training.

Reference :

CIC safety guideline (Volume 2)

Section 7.21 A guided-SWP should be tested, examined, inspected, maintained and operated in accordance with the provisions of the Factories and Industrial Undertakings (Suspended Working Platforms) Regulation. The Lift Installation Contractor should also comply with the requirements of the Compliance Notes on Guided-SWP issued by the Labour Department.

Question 6.8 **Weighting 6**

Have standards required for the safe operation of suspended working platform been

established and implemented?

Audit Criteria

1. Provision of personal protective equipment and communication system between the person on the working platform and the person in charge of the operation.
2. Termination of the use of the suspended working platform during unsafe condition.
3. Emergency preparedness including the recovery procedure of the plant and the personnel staying on the working platform.
4. The personnel on the working platform are wearing and using proper personal protective equipment, such as a safety harness and a helmet with Y-type chin strap.
5. Properly take care of hand tool and equipment.
6. Working platform is not so loaded with building materials that may affect worker's foothold and handhold, and endanger the stability of the working platform.
7. All wire ropes shall be inspected prior to commencement of daily work.
8. Every person riding on a suspended working platform shall wear a safety harness properly attached to an independent lifeline or an appropriate anchorage.
9. Every gondola should be marked clearly and legibly on its working platform :
   - the safe working load applicable to the suspended working platform;
   - the maximum number of persons that may be carried at any one time; and
   - an appropriate mark to distinguish it from other similar gondolas.
10. Accumulation of debris / materials on working platform are strictly prohibited. Overloading may lead serious consequences including fall from height / falling objects. Auditors should pay attention during on-site assessment. Site management / operator interview should include the arrangements in prevention of SWP overload.
11. The answer should be "N/A" if no suspended working platform was observed during on-site verification.

Reference :

CIC safety guideline (Volume 2)

Section 9.5 If a guided-SWP or a platform lift is used for the lift installation works, the following specific safety precautions, but not limited to, should be adopted:

(a) the control switches, safety devices and / or pedal brakes of the appliance should be functionally checked by a competent person at the beginning of each work shift;

(b) a notice prescribing the maximum number of workers working on the platform

should be clearly displayed on the appliance facing the lift shaft opening. The appliance should not be overloaded with workers on the platform under any circumstance;

(c) no worker is allowed to work alone on the platform;

(d) no works should be carried out while the appliance is moving;

(e) no other worker should be allowed to enter the lift shaft when the appliance is operating;

f) worker(s) should immediately anchor safety harness(es) to the independent lifeline(s) before entering the platform;

(g) all portable tools should be properly placed in the tool box and bag when working on the platform;

(h) the platform of the appliance should be properly stopped at appropriate level above the lift pit and locked in an inoperative mode. The switch key should be kept by the worker working inside the lift shaft. A warning notice should be posted at the control of the platform to that effect before entering the lift pit for works;

(i) lift car and frame assembly works should be carried out preferably at the lowest level;

(j) if the lift car and frame assembly works are carried out at the lowest level, the guided-SWP should be properly stopped at appropriate level above the lift pit and locked in an inoperative mode. The switch key should be kept by the worker working inside the lift shaft and a warning notice should be posted at the control panel of the platform to that effect; and

(k) if the lift car and frame assembly works are carried out at the highest level, the guided-SWP should be properly stopped at one level below and locked in an inoperative mode. The switch key should be kept by the worker working inside the lift shaft and a warning notice should be posted at the control panel of the platform to that effect.

Section 9.7 During the installation of a machine-room-less lift, it is prohibited to use a guided-SWP to convey any machine components of a lift inside a lift shaft. When a lift component is raised or lowered by a lifting appliance, the guided-SWP should be stationed at an appropriate level to avoid any contacts with a suspended load.

Part B

Section 7 Protection against Falling Objects

Question 7.1 **Weighting: 6**

Are all floor openings, lift shaft openings, working platforms and floor edges installed with guard-rails and toe-boards or nets to prevent materials from falling from height?

Audit Criteria

1. Lift shaft is not used for refuse handling purpose.
2. Checking the effectiveness of the measures to prevent materials from falling from height.
3. Debris net / mesh may be considered not applicable if working platforms with toe-boards and landings at each 2.6 m intervals inside lift shaft is installed.
4. Cover all floor openings with solid and sound material constructed and securely fixed in position to prevent the fall of materials and articles. These covers shall be clearly and boldly marked to show its purpose.

Reference :

CIC safety guideline (Volume 1)

Section 7.4 For openings above lift shaft in lift machine room, they should be protected by ferrule or concrete curb and covered up with fixed wooden board or metal plate. Ventilation openings should also be covered with mesh and reinforcement.

Section 7.5 As far as practicable, suitable debris net / mesh inside lift shafts against falling objects should be erected according to the following requirements:-

(a) net eyes should not be larger than 20mm x 20mm; and

(b) the debris net / mesh should be installed at an interval not more than 20m in height.

CIC safety guideline (Volume 4)

Section 7.2 The Main Contractor should construct a sound lift shaft protection platform above the cathead so as to withstand objects falling from above. Full height landing gates with suitable toe-boards should be installed at each of the landing openings to prevent materials falling from landing floors to lift shafts. The gates should always be maintained in good condition. Multiple level works with different tasks to be performed at the same time inside the same lift shaft is strongly not advisable. Whenever a lifting / hoisting operation is carried out, no worker is allowed to stay underneath the suspended load.

Question 7.2 **Weighting 6**

Are there appropriate measures taken to prevent hand tools etc. from falling from height?

Audit Criteria

1. Checking the effectiveness of the measures to prevent tools from falling from height.
2. Auditor should verify whether the auditee has effective arrangement in place e.g. avoid putting hand tools or other objects close to floor openings or edges, provide tools strap etc. to prevent falling objects.
3. The measures of hand tools with tool straps should be applied only at working at height working environment.

Reference :

CIC safe guideline (Volume 2)

Section 9.5 (g) All portable tools should be properly placed in the tool box and bag when working on the platform.

CIC safe guideline (Volume 4)

Section 9.5.3 All portable tools or loose materials should be properly secured and placed before entering the lift shaft.

Code of Practice for Safety at Work (Lift and Escalator)

Any items of equipment for dismantling should be lowered under control and should not be dropped down under all circumstances (Section 9.1.7).

A lift should not be returned to normal operation when the work is finished unless it has been ascertained that there is no person, tools, access equipment, etc. in the lift well. All equipment and facilities for maintenance, service or installation work, e.g. propping device, should be returned to their proper positions (Section 9.1.9).

Question 7.3 **Weighting 6**

Are there appropriate measures taken to prevent materials from falling from height in stacking / storage area?

Audit Criteria

1. The stacking / storage area must be well organised with appropriate arrangements to ensure the material is not:
   - insecurely stacked in a place ;
   - stacked in such a way as to overload and render unsafe any floor or other part of a building or structure on the site.

Question 7.4 **Weighting: 6**

Are suitable safety helmets properly worn by all workers?

Audit Criteria

1. Auditor should verify whether all workers properly wearing suitable safety helmets. The answer should be "No", if the Y-type chin strap cannot fix the safety helmet onto worker's head securely.
2. The standard of safety helmet and expiry date of safety helmet should be checked.
3. The in-use life statement from a manufactory can be taken as reference.
4. A helmet should be regularly inspected for damage and wear and tear. Excessive wear and tear can considerably reduce a helmet's lifespan and any helmet that has deep scratches, has been cut or has any impact damage should be discarded and replaced.
5. Auditee should provide all workers with safety helmet with ventilation vents and Y-type chin straps and ensure all personnel wear the helmet properly.

Reference :

Guidance Notes on the Selection, Use and Maintenance of Safety Helmets

- To effectively reduce the risks of head injury, an appropriate type of safety helmets with chin straps should be provided. The safety helmet selected should satisfy certain performance requirements including shock absorption, resistance to penetration, and be adjustable to fit and made comfortable to the user. Certainly, the safety helmet can never be effective unless it is properly worn for the purpose.
- Safety helmets should have a limited lifetime because of material degradation that can take place due to sunlight, heat or material self-degradation. Suppliers or manufacturers should be consulted for acquiring the lifetime of safety helmets.
- Under normal services, most helmet shells can provide adequate protection for about 2 to 3 years. Plastic components of harnesses may deteriorate more rapidly in service and so harnesses should be replaced at intervals not longer than 2 years, unless otherwise specified by the manufacturer. It should be noted that signs of damage or deterioration may be observed in a much shorter service life. Should such be a case, the safety helmet should be immediately withdrawn from service and discarded.

Part B

Section 8 Housekeeping

Question 8.1 **Weighting: 6**

Are there appropriate measures taken to ensure no timber or other material with

projecting nails or other sharp objects are used or left on the site?

Audit Criteria

1. Projecting nails or other sharp objects must be adequately protected or removed.

Reference :

Legal Requirement

(1) The contractor responsible for a construction site shall ensure that no timber or material with projecting nails or other sharp objects are used or left on the site if the nails or objects are a source of danger to workersmen employed there.

(2) Any contractor who has direct control over any construction work shall ensure that no timber or material with projecting nails or other sharp objects are used in the construction work or left on the place where the construction work is being carried out if the nails or objects are a source of danger to workmen employed there.

(CSSR Chapter 59I, Regulation 51)

Question 8.2 **Weighting: 6**

Are there appropriate measures taken to ensure good housekeeping and proper waste disposal ?

Audit Criteria

1. Auditor should verify the condition of lift / escalator pit and machine room.

2. Auditor should focus on the hazards related to housekeeping.

3. Auditor when assessing the audit question could recommend the following improvement actions:

i) People may trip over, or strike against objects, so it is important to keep work areas clear of obstructions and loose materials.

ii) The floors of work areas should be kept dry and in a non-slippery condition.

4. Working areas should be kept as clear as possible and free from stacking of materials and waste.

5. Provide and maintain proper drainage and means of sewage disposal for lift / escalator pit.

Reference:

Legal Requirement

Platforms, gangways, floors, or other places used as passageways on a construction site shall be kept clear of any loose materials which are not required for immediate use. (Construction Site (Safety) Regulations 52(1) and 52(1A))

CIC safe guideline (Volume 4)

Section 6.2.12 Temporary Drainage Temporary drainage system / sump pump should be provided and effectively operated to prevent the accumulation of water at lift pit.

Code of Practice for Lift Works and Escalator Works

Section 4.23.1 RCs are required to exercise good housekeeping practice for proper upkeep of lifts and escalators. To eliminate fire hazards and interferences to the normal operation of a lift or an escalator, the workplace should be kept tidy and clear of waste materials.

Question 8.3 **Weighting: 6**

Are materials and equipment stored and stacked safely?

Audit Criteria

1. Materials shall not be insecurely stacked in a place where they may be dangerous to site personnel on site.

Reference :

Code of Practice for Safety at Work (Lift and Escalator)

10.7 The landing plates of the driving and return stations, if required to be removed, should be stored in a safe location.

10.8 Dismantling of steps should be done carefully and in accordance with the manufacturer's instructions. All the dismantled parts such as the steps, skirting, etc. should be stacked properly and stored or placed in a safe location.

Question 8.4 **Weighting: 6**

Where work is being taken, are suitable and adequate lighting provided to all places where lighting is necessary to secure workers' safety such as lift pit / escalator pit?

Audit Criteria

1. Suitable and adequate lighting should be provided to secure workers' safety.
2. Emergency lighting, e.g. electric torch or headlamp, should be provided to each worker.
3. Measures to prevent mechanical damage of lightings should be considered.

Reference :

CIC safety guideline (Volume 2)

Section 7.29 Appropriate lighting should be provided for works in the lift machine room and inside a lift shaft. Lighting devices should be properly protected against impact damage.

CIC safety guideline (Volume 4)

Section 6.2.17 Electric lighting of at least 120 lux should be recommended to provide at each landing with on / off switch equipped.

Code of Practice for Safety at Work (Lift and Escalator)

Appropriate illumination level should be provided and maintained at the workplace for the sake of safety and health of the lift / escalator workers. Excessive or inadequate illumination level would both pose risk at work (Section 7.7.2).

Code of Practice for Lift Works and Escalator Works

Section 4.25.1 Adequate lighting for the works should be provided to workers working in a lift shaft or a confined or dark area. Emergency lighting or a battery torch should be provided or made available to workers for use in the event of power failure or sudden failure of the normal lighting.

Question 8.5 **Weighting: 6**

Are there appropriate measures taken to warn and prevent unauthorised persons from entering or trespassing?

Audit Criteria

1. Checking the effectiveness of the arrangement.
2. Where unauthorised persons are in the vicinity of construction work, suitable and safe routes must be provided to ensure that they are not put at risk from the construction work activity.

Part B

Section 9 Lifting Operations

Question 9.1 **Weighting: 6**

Is a lifting plan prepared to define the lifting and rigging method ?

Audit Criteria

1. Checking on the lifting plan if it can define the lifting and rigging method applied to each machine part, material and equipment to be hoisted for the lift or escalator works.

2. The lifting plan is a set of plans which is created for use in any lifting operations. All lifting operations shall be accompanied by a lifting plan supported by a risk assessment, a safe work procedure and / or method statement. Frequent or routine lifting operations may only require a basic lifting plan. Non-routine or complex lifts however, requires additional planning and engineering design efforts to ensure that the lifting is conducted safely.
3. The lifting plan will need to identify the resources required, the procedures and the responsibilities so that any lifting operation is carried out safely.
4. The lifting plan shall include but not limited to following:
   - Personnel required;
   - Personnel's roles, responsibilities and competencies;
   - Nature, weight and dimension of loads;
   - Selection of appropriate lifting equipment and lifting gear;
   - Application of the correct lifting methods;
   - Position of personnel and lifting equipment;
   - Assessment of the need for tag lines; and
   - Means of communication.

Question 9.2 **Weighting: 6**

Are all lifting appliances and associated lifting gear inspected, tested and examined; and suitable for the operations to be carried out?

Audit Criteria

1. Checking on the conformity of legal and CIC requirements
2. Thorough planning of the operations, along with the selection, provision and use of suitable lifting appliance(s) and associated lifting gear.
3. The position and movement of lifting appliances are safe and suitable.
4. Check for any ramps, slopes, gates, archways, buildings, trees or overhead lines that would present an obstacle or danger, and refueling or other service vehicles can gain access without causing a hazard.
5. The method of determining the weight of the load to be hoisted. This information can be obtained from shipping papers, design plans, catalogue data, manufacturer's specifications, and other dependable sources. When such information is not available, it is necessary to calculate the load weight.

Reference :

CIC safety guideline (Volume 2)

The Lift Installation Contractor should be responsible for erection, testing, examination,

maintenance and dismantling of installation appliances, winches, chain block systems, other lifting appliances and lifting gear used inside a lift shaft for the lift installation works (Section 7.20).

A guided-SWP should be tested, examined, inspected, maintained and operated in accordance with the provisions of the Factories and Industrial Undertakings (Suspended Working Platforms) Regulation. The Lift Installation Contractor should also comply with the requirements of the Compliance Notes on Guided-SWP issued by the Labour Department (LD) (Section 7.21).

If a platform lift is used for the lift installation works, a Registered Lift Engineer should examine the appliance before it is put into use for the first time. The Lift Installation Contractor should also comply with the requirements of the Compliance Notes on Platform Lift issued by LD (Section 7.22).

CIC safety guideline (Volume 4)

Section 7.1 All lifting appliances and lifting gear shall be tested and thoroughly examined by a Registered Professional Engineer (RPE) of relevant disciplinary as prescribed under the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations, Cap 59J. Before any lifting / hoisting operation, the main contractor, Lift Contractor and / or its subcontractors shall ensure all lifting appliances and lifting gear are not loaded beyond their respective safe working loads. Every part of the load to be raised or lowered by a lifting appliance shall be securely suspended or supported. Prior to the lift-jumping work, the lift shaft should be free of obstruction; and all the lifting appliances and lifting gear shall be inspected by a competent person. Special attention should be paid to prevent any hoisting rope from abrasion with any machine parts / equipment / stationary objects inside the lift shaft to ensure safe lifting operation.

Code of Practice for Safety at Work (Lift and Escalator)

In carrying out the lift or escalator work, the mechanical handling involved most frequently is the raising and lowering of equipment, parts and materials. The lifting operation should follow the legal requirements stipulated in the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations [FIU(LALG)R] and the CS(S)R (Section 7.3.1).

Any lifting appliances and lifting gears used in the operation should be properly constructed and securely supported during the operation [Regulations 4 and 7D of the FIU(LALG)R] (Section 7.3.2).

The lifting appliances and lifting gears should be properly maintained, regularly tested, thoroughly examined and inspected as required in Regulations 5, 6A, 7A and 18 of the

FIU(LALG)R (Section 7.3.3).

For a crane that requires the provision of an automatic safe load indicator (ASLI), the ASLI should be functioning properly, and inspected and tested by a competent examiner [Regulation 7B of the FIU(LALG)R] (Section 7.3.4).

When a lifting appliance is used at or moved in the work site, its stability during operation should be considered by taking appropriate safety precautions, i.e. spreading the load, reinforcing the supports, etc. where the situation warrants [Regulation 7D of the FIU(LALG)R] (Section 7.3.5).

The safe working load of the lifting appliances and gears should be clearly identified and marked [Regulations 11 and 18 of the FIU(LALG)R]. Loading diagram if applicable should be provided in a conspicuous position for the worker to observe (Section 7.3.6).

Code of Practice for Lift Works and Escalator Works

4.31.3 All permanently installed lifting equipment provided in machinery spaces or pulley rooms should be used only within its safe working load. The lifting equipment should also be tested and examined in accordance with the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations, Cap. 59J.

Question 9.3 **Weighting: 6**

Are all lifting operations being carried out safely?

Audit Criteria

1. Lifting operations should be conducted according to the lifting plan.
2. Proper fencing off of all lifting zones (e.g. providing fencing or barricade) with suitable warning notices displayed.
3. Conduct a trial of the lifting operation, that the load should be lifted 300 - 500mm off the level for 3 seconds to ensure the load is securely rigged before the load is further lifted.
4. If it is not reasonably practicable to fence off the lifting zones due to space constraint, etc. the taking of effective measures such as appointment of sufficient watch-out personnel to ensure no unauthorised entry into the zones.

Reference :

Code of Practice for Safety at Work (Lift and Escalator)

- A makeshift hook, damaged hook or a hook with a defective safety latch or catch should never be used (Section 7.3.11).
- The load should be hooked to the lifting block by clamp or through the loops of the sling. The end links, rings or shackles should be riding freely on the hook

(Section 7.3.12).

- The slings should be protected from sharp edges damage by using soft packing (Section 7.3.13).
- A chain should not be shortened by tying knots in them [Regulation 18 of the FIU(LALG)R]. Wire ropes should not contain kink or twist (Section 7.3.14).
- Lifting block should never be dropped from a height or dragged under a load (Section 7.3.15).
- Before mounting any lifting gear from a point provided in the building, a beam or a girder, the lifting gear together with the building, a beam or a girder on which it is to be mounted should be checked to ensure it can withstand the load (Section 7.3.16).
- The operator should be familiar with the lifting appliance he is using. He should understand which direction the chain / rope should be pulled in order to raise or lower (Section 7.3.17).
- Warning to others in the vicinity should be given when the load is about to be lifted (Section 7.3.18).
- The load should be positioned directly under the lifting appliance to prevent swinging during lifting (Section 7.3.19).
- When the load is just lifting off the ground, it should be raised slowly and steadily. Stability should also be checked during such operation and sufficient space should be provided prior to unloading (Section 7.3.20).
- The load should not be allowed to revolve as this may cause the eyebolt to become loosened (Section 7.3.21).
- Nobody should work or stand below the path or within the swing radius or locus of the suspended load during the lifting operation (Section 7.3.22).

Question 9.4 **Weighting: 6**

Are all responsible persons engaged on lifting operation competent to carry out the work required?

Audit Criteria

1. The responsible persons include lifting appliance operator, signalers and riggers.
2. Checking the competence of the operators of power-driven lifting appliances.
3. Training course 'Safe use of Lifting Appliance and Lifting Gear' provided by OSHC or equivalent courses is accepted.
4. In-house training by lift / escalator contractors with standardise duration of training and training contents recommended by Lift and Escalator Contractors Association is accepted.

5. If a crane is used in the operation, a signaler shall be appointed and stationed to give effective signals to the operator of a lifting appliance to ensure its safe working.
6. The riggers are capable of selecting lifting gear suitable for the loads and liaise with the signaler for directing the movement of the crane safely.
7. For lifting operations involving use of crane, riggers shall have completed "A12 Silver Card" and signallers shall have completed "A12 Silver Card and Signalman for Hoisting Operations at Construction Sites Course" or "A12S Safety Training Course for Construction Workers of Specified Trade - Rigger and Signaller" provided by CIC.

Reference :

Code of Practice for Safety at Work (Lift and Escalator)

7.3.9 The operator of a crane should be at least 18 years old, competent to operate the crane and holder of a valid certificate [Regulation 15A of the FIU(LALG)R].

7.3.10 The operator of a power-driven lifting appliance, other than a crane, should be at least 18 years old and is trained and competent to operate the appliance [Regulation 15A of the FIU(LALG)R].

Part B

Section 10 Welding / Cutting Operations and Equipment

Question 10.1 **Weighting: 3**

Are all personnel involved in electric arc welding or / and in gas welding and flame cutting operations competent?

Audit Criteria

1. The general welder shall have at least attained the level of intermediate tradesman and registered as Registered Semi-skilled Worker under the Construction Workers Registration Ordinance.
2. The general welder undertaking flame cutting and gas welding work shall have attained the training qualification of a gas welding safety training course approved by Labour Department and holds a valid training certificate.

Reference:

- Factories and Industrial Undertakings (Gas Welding and Flame Cutting) Regulation.
- Code of Practice: Safety and Health at Work for Gas Welding and Flame Cutting
- Code of Practice: Safety and Health at Work for Manual Electric Arc Welding

Question 10.2 **Weighting: 3**

Are gas welding / cutting equipment including hoses, cables, gauges in good conditions?

Audit Criteria

1. Checking the arc-welding equipment conforms to the Code guideline.

Reference :

Code of Practice for Safety at Work (Lift and Escalator)

7.5.2 Gas welding / cutting

- Gas cylinders should be transported and used in a trolley or stand made for the purpose. When in use, all gas cylinders should stand alone and be kept in the upright position. Valve handles or valve wrenches should be retained in place while the cylinders are in use. In regards to the quantity of compressed or flammable gas allowed in a work site, the provisions in the Dangerous Goods Ordinance (Cap.295) should be observed.
- Cylinders should not be subjected to rough usage, excessive shock or high temperature.
- Cylinders under storage in the work site should not be stacked too high or under heavy weights.
- Cylinders should never be stored in places where grease or oil is likely to make contact with the valves or gas connections. Also grease or oil should never be used on valve fittings and threads.
- All gas connections should be checked for leaks.
- Gauges and torches should be protected from damage.
- Regulator and flash back arrestor should be used.
- Oxygen should not be used to blow out or clean equipment.
- Cylinder caps should be in place wherever cylinders are not in use, or while they are in storage.
- Care should be taken that hose not to become kinked or tangled, or be stepped on, run over or otherwise damaged. Before operation, a worker should be assigned to inspect the gas hose for any physical damage that may lead to gas leakage, and report to the supervisor if damage is detected.
- Torches should be lit with friction lighters, stationary pilot flames or other safe source but not with matches, cigarette lighter or other inappropriate ignition device.
- The key-operated cylinder valve should be kept closed and the pressure from the

hoses should be relieved when not in use.

- Gas cylinders should never be placed on the car top, inside the lift well / pit, inside the car or other places inside the truss of the escalator.

Question 10.3 **Weighting: 3**

Are safety devices provided in gas supply system to prevent fire and explosion?

Audit Criteria

1. The use of safety devices to prevent fire and explosion, including flashback arrestor, non-return valve, pressure relief device, vent and purge device.

Question 10.4 **Weighting: 3**

For electric arc welding, are adequate welding earths and returns ensured and properly connected to the workpiece?

Audit Criteria

1. Checking the arc-welding equipment conforms to the Code guideline.
2. Construction and condition of electric arc welding sets should be considered, such as:
   - The workpiece should be well earthed, and all equipment should be earthed and insulated.
   - Welding machines having a maximum current output exceeding 30A single phase or half the maximum demand of an installation in any one phase is directly connected to the mains on a 3-phase supply.
   - Turn off the welding machine when left unattended.
   - Use welding machine for enclosed type, and ensure that terminals of the welding machine are properly protected to avoid accidental contact.
   - The welding machine should be equipped with a voltage reducing device to automatically reduce the output voltage at no-load condition.

Reference :

Code of Practice for Safety at Work (Lift and Escalator)

7.5.3 Electric arc welding / cutting

- The exposed metal parts including the iron core of the welding transformer and the welding workpiece should be properly and effectively earthed.
- The welding transformer should be completed with an earthed metal casing for protection against damage and weathering. The use of open-type welding transformer should be avoided. For enhanced safety, the welding

transformer should incorporate electric shock-preventing device.

- The welding transformer should not be placed on the car top, inside the lift well / pit or inside the car or the truss of the escalator.
- Cables and cable connectors used in arc-welding circuits should be effectively insulated (Regulations 6 and 9 of the Factories and Industrial Undertakings (Electricity) Regulations [FIU(E)R]. Only cables of adequate current carrying capacity should be used. To eliminate fire hazard, dedicated welding return cable of appropriate type and size must be used for welding / cutting. The use of the steel guide rails or other steelworks and metal parts as the welding return is forbidden.
- Electrode holders should have adequate current carrying capacity and be adequately insulated to prevent shock, short circuiting or flashovers.
- The car top and the lift well / pit are restrictive workplaces. Extra care has to be taken when carrying out electric arc welding work in those locations to minimize the risk of getting electric shock or burns.
- The welding equipment should be switched off when not in use and when it is left unattended.

Question 10.5 **Weighting: 3**

Are welding operations adequately screened or isolated from other workers / passers-by and other non-compatible processes?

Audit Criteria

1. A screen to protect other employees and persons in the vicinity from ultra violet and other harmful radiation emitted during electric arc welding / cutting should be provided.
2. Include all means of welding / cutting operations. Non-compatible processes including paint spraying and tiles cleaning etc.
3. Warning notice on welding process is in progress should be displayed.
4. Measures should be taken to prevent the falling of sparks generated by the welding or flame cutting operation onto the surrounding areas.

Question 10.6 **Weighting: 3**

Is the workplace suitable for carrying out welding works?

Audit Criteria

1. Remove any combustible / flammable materials from the work area. No welding operation should be conducted in an environment having a flammable

atmosphere or having flammable materials in the vicinity.

2. Ensure that adjacent areas, which may be affected by the heat, sparks and slag generated by the welding operation, are free from combustible / flammable materials and fire hazards.
3. Ventilate the indoor workplace using air blowers and exhaust fans to remove poisonous fumes and gases that are given off during welding.

Question 10.7 **Weighting: 3**

Are all welding operatives provided with appropriate personal protective clothing / equipment and are they used properly?

Audit Criteria

1. Suitable personal protective equipment should be selected appropriate to the hazards encountered, and should be properly used and maintained.
2. PPE includes eye protection, skin and body protection, if local ventilation cannot be arranged, welder should be provided with respiratory protection and a supply of fresh air.
3. Auditor should comment on the personal protective equipment provided to welding operatives even though there was no operation being carried out during the physical verification.
4. If there is no issue record of personal protective equipment for the welding operatives, the answer should be “No”.
5. The answer may be “N/A” if no activity was carried out during physical verification provided that auditor had verified the provision of personal protective equipment to the operatives.

Part B

Section 11 Abrasive Wheels

Question 11.1 **Weighting: 3**

Are suitable abrasive wheels used and adequately guarded?

Audit Criteria:

1. The condition of the guarding and machine should be considered.
2. Include all grinding machines (fixed and portable types).
3. Guards for portable machines should be so designed that in the event of a wheel bursting or breaking, the guard remains attached to the machine.
4. Angle grinder used must be provided with an auxiliary handle.
5. Angle grinder should not be used on wood working works.

Reference:
Factories and Industrial Undertakings (Abrasive Wheels) Regulations

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Question 11.2 **Weighting: 3**

Have all abrasive wheels mounters been trained in accordance with the requirements of the Factories and Industrial Undertakings (Abrasive Wheels) Regulations, and have they been assessed as competent and been given written authority to carry out their work?

Audit Criteria

1. An abrasive wheel shall not be mounted except by a person who has been appointed in writing for that purpose by proprietor of an industrial undertaking and is, by reason of training and practical experience.

Question 11.3 **Weighting: 3**

Are all grinding/cutting machines and abrasive wheels selected for their suitability and are they marked with their maximum permissible speed?

Audit Criteria:

1. The maximum speed of the spindle should be marked on every grinding / cutting machine so that it is easy to compare the speed marked on the wheel with the speed of the machine spindle. Where the spindle can be operated at more than one specific speed, each speed must be shown, and if the speed is infinitely variable within a specified range, the notice must show the maximum and minimum speed.
2. The maximum permissible speed in revolutions per minute (rpm) and metres per second (m/s) specified by manufacturers should be marked on every abrasive wheel larger than 55 mm in diameter, or on the blotter or identification label which is sometimes attached to it. Since it is not practicable to mark smaller wheels, the maximum permissible speed in rpm of wheels 55 mm in diameter or less should be stated in a notice posted in a position where it can easily be read.

Reference:
Factories and Industrial Undertakings (Abrasive Wheels) Regulations

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Question 11.4 **Weighting: 3**

Has the statutory warning notice in respect of use of abrasive wheel been posted?

Audit Criteria:

1. Statutory warning notice should be posted

Reference:

Factories and Industrial Undertakings (Abrasive Wheels) Regulations

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Question 11.5 **Weighting: 3**

Are all abrasive wheels properly examined, handling and stored?

Audit Criteria:

1. Wheels should be carefully unpacked, cleaned with a brush and examined for possible damage in transit. In unpacking, the careless use of a tool may cause damage to the wheel. The soundness of wheels can be further checked by tapping them with a light, non-metallic implement. This is known as the 'ring' test. Wheels must be dry and free from sawdust for the ring test otherwise the sound will be deadened. It should also be noted that organic bonded wheels do not emit the same clear metallic ring as inorganic bonded wheels. Heavy wheels should be supported on a clean hard floor for the ring test while light wheels should be suspended from their hole on a finger or small pin. If the wheel sounds dead, for example due to cracking, it should not be used.
2. Handle wheels carefully to prevent dropping or bumping. Do not roll abrasive wheels. Where this is unavoidable because of the large size of the wheel, a soft, resilient floor surface is essential. Use trucks or suitable conveyors which will provide proper support for transporting wheels which cannot be carried by hand.
3. Suitable racks, bins or compartmented drawers should be provided to accommodate the various types of wheels used.

Question 11.6 **Weighting: 3**

Are all abrasive wheel users provided with appropriate personal protective equipment and are they used properly?

Audit Criteria:

1. Auditor should comment on the personal protective equipment provided to the users even though there was no operation being carried out during the physical verification.

2. If there is no issue record of personal protective equipment for all users, the answer should be "No".

3. The answer may be "N/A" if no activity was carried out during physical verification

provided that auditor had verified the provision of personal protective equipment to the users.

Part B

Section 12 Portable Tools

Question 12.1 **Weighting: 3**

Are the used portable tools fit for the tasks and are they used properly?

Audit Criteria:

1. Where applicable, check the competence of operator such as cartridge-operated fixing tools.
2. Check approved type of tools such as cartridge-operated fixing tools.
3. For work on or near electrical apparatus only properly insulated tools should be used.
4. Use spark resistant tools where highly flammable vapours may be present.
5. Select the correct weight, size and tool for the job. Avoid static load at the shoulder or arm due to the continuous holding of a tool at a raised position or the gripping of a heavy tool.
6. Use the correct size spanner. Never use a hammer or extension handle on a spanner for tightening up nuts.

Reference :

Code of Practice for Safety at Work (Lift and Escalator)

Tools and Equipment (Section 8.1)

8.1.3 Pliers and pipe wrenches should not be used on bolts and nuts. Makeshift handle extensions to increase the mechanical advantage should not be used.

8.1.4 Crescent wrenches are universal tools made for rough work; proper wrench should be used as far as possible.

8.1.5 Crowbar required for manual handling should be of correct size. A block of wood should be placed under the head of the crowbar for leverage.

8.1.6 Hardened steel surface should never be struck by a steel hammer; a plastic, wood or soft metal hammer should be used instead.

8.1.7 Any knife for the job should be sharp and carried in a sheath of holder. A knife should not be used in place of a cable stripper for stripping cable.

8.1.10 A screwdriver should not be used as a punch, wedge, pry, or chisel.

8.1.11 Files should not be used unless they have a proper handle, and should not be used as a pry.

8.1.12 Chisels, center punches, etc. should be dressed to eliminate mushrooming.

8.1.13 The correct drill bits should be used for percussion drilling.

8.1.15 For the use of cartridge-operated fixing tools, the requirements stipulated in the Factories and Industrial Undertakings (Cartridge-Operated Fixing Tools) Regulations should be observed.

Question 12.2 **Weighting: 3**

Are all portable tools maintained in safe working conditions?

Audit Criteria:

1. Construction and condition of hand tools and power driven portable tools should be considered.

Reference :

- Factories and Industrial Undertakings (Electricity) Regulations
- Factories and Industrial Undertakings (Cartridge-Operated Fixing Tools) Regulations

Code of Practice for Safety at Work (Lift and Escalator)

Tools and Equipment (Section 8.1)

8.1.1 The correct tools and equipment should only be used for their intended purposes. They should be cleaned, maintained and inspected each time before use.

8.1.8 Split or loose handles of any tools should be replaced with new ones. Handles should not be wired or taped.

8.1.9 Screwdrivers should always be properly dressed and their handles should be in good condition.

Question 12.3 **Weighting: 3**

Are low voltage or cordless portable tools used, where applicable?

Audit Criteria:

1. If main contractor provides a 110V or below voltage power system, lift / escalator contractor must use low voltage portable tools operated at that voltage.
2. Use of cordless electric portable tools is acceptable.
3. Sufficient charging facilities to ensure safe use of electricity should be verified if cordless electric portable tools are used on site.

Reference :

Code of Practice for Safety at Work (Lift and Escalator)

Tools and Equipment (Section 8.1)

8.1.14 For use of portable power tools or lighting, the following should be observed:-

a) Defective power tools should be returned and properly repaired.

b) Equipment should only be used at its rated supply voltage.

c) A plug of different specifications should never be forced into an unmatched socket.

d) The lead should be in good working condition, free from cuts or chaffing, and of sufficient length for the job.

e) The leads should be properly routed and laid to protect against damage.

f) Extra-low supplies ("extra-low voltage" (特低壓) means any voltage not exceeding 50 volts alternating current or 120 volts direct current whether between conductors or to earth;) should be utilized as far as practicable for all if main contractor provided a 110V or below power supply, portable power tools should be operated at that voltage 110V to reduce the risk of electric shock. All power tools to be used should preferably be “double insulated” tools. This requirement should be particularly noted when working on car top, lift well, inside lift car or any other restrictive spaces where rescue or evacuation in case of emergency may pose some difficulties.

g) Inspecting lamp should be either ‘double-insulated’ or ‘all insulated’ type. The lamp bulb should be guarded with non-conductive materials against accidental breakage. The lamp should not be suspended by its electric cord.

h) Proper type of plugs and sockets should be used for power connection.

i) Power extension cables should never be hung over nails or be left in places where they can get damaged or wet. The cables should not be lifted or pulled by the electrical connection leads and they should be coiled when not in use.

j) An electric tool without an earth connecting wire connected to an effective earth should never be used (except for ‘double-insulated’ type).

k) Other contractor’s equipment of which the worker has little knowledge, should not be used unless authorized by the respective owner and also the proprietor / contractor of the lift / escalator worker to do so.

Question 12.4 **Weighting: 3**

Are all portable tools properly stored ?

Audit Criteria

1. All portable tools should be properly stored in boxes, racks, holders or pocket belts and should not be left so that they can fall, roll or be tripped over; cutting edges should be sheathed.
2. Carry tools in tool holders / boxes and not in the pockets of worker clothing.

Reference :

Code of Practice for Safety at Work (Lift and Escalator)

Tools and Equipment (Section 8.1)

8.1.2 Hand tools should be stored and carried in boxes or in tool-bags. Tool boxes should be placed in proper locations so that other person may not trip over them.

Question 12.5 **Weighting: 3**

Are all operatives of portable tools provided with appropriate personal protective equipment and are they used properly?

Audit Criteria:

1. Auditor should comment on the personal protective equipment provided to operators even though there was no operation being carried out during the physical verification.
2. If there is no issue record of personal protective equipment for the operators, the answer should be “No”.
3. The answer may be “N/A” if no activity was carried out during physical verification provided that auditor had verified the provision of personal protective equipment to the operators.

Part B

Section 13 Electrical Works

Question 13.1 **Weighting: 6**

Where relevant, are electric cables adequately suspended / installed to avoid them from being unduly laid on floor?

Audit Criteria

1. Suspension level, condition of cables and the connector should be considered.

Reference:

- Factories and Industrial Undertakings (Electricity) Regulations

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Question 13.2 **Weighting: 6**

For electrical equipment and installations used, is it weatherproof type or contained in an appropriate weatherproof enclosure?

Audit Criteria

1. Temporary switch boxes, socket outlets, plugs and cable couplers are of splash-proof type with a protection class of IP54 or above.

Reference:

- Factories and Industrial Undertakings (Electricity) Regulations

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Question 13.3 **Weighting : 6**

Are tools and equipment connected to the electrical supply system with approved type of connectors, and provided with appropriate protection against earth leakage and suitably located at means of cutting off the electricity supply when necessary?

Audit Criteria

1. Construction and condition of cables and the connector should be considered.
2. All electrical connections must be proper plugs and sockets. Makeshift connections and taped joints are not permitted.
3. Check for BS2769 (Kite Mark) or double insulated Mark (BS 2754).
4. Check the tool fitted with correct plug; type and size, and also the plug is undamaged.
5. Check trailing lead is not cut or frayed.
6. Check the nameplate is secure with details of type, voltage, frequency, current, speed and other details depending on manufacturer.
7. No cut off; bend back the “earth pin” on three-prong plugs.
8. Using industrial three-way adaptor should be avoided to prevent overloading socket outlets.

Reference :

CIC safe guideline (Volume 2) Section 7

7.25 The Main Contractor should coordinate with the Lift Installation Contractor for the arrangement of electrical supply, earthing, illumination and ventilation on site. Temporary electricity at voltage 110V should be provided by the Main Contractor with circuits equipped with waterproof sockets for use by the Lift Installation Contractor. The location of temporary electricity supply should be

indicated clearly on the lift installation safety plan.

7.26 The Lift Installation Contractor should ensure that adequate illumination by 110V temporary lighting connected to an isolated transformer having the centre tap of the secondary winding earthed, ventilation and effective communication systems are provided inside the lift shaft during the whole lift installation period.

7.27 All electrical appliances including portable electric tools, lighting devices and mechanical ventilation equipment provided by the Lift Installation Contractor should be effectively earthed except that it is an approved type that does not require earthing.

CIC safe guideline (Volume 4)

Section 7.3.2 The Main Contractor should coordinate with the Lift Contractor for the arrangement of electrical supply, earthing, illumination and ventilation on site. Temporary electricity at voltage 110V supplied from centre-tapped transformer should be provided by the Main Contractor with circuits equipped with waterproof sockets for use by the Lift Contractor. The location of temporary electricity supply should be indicated clearly on the lift installation safety plan.

Reference:

- Factories and Industrial Undertakings (Electricity) Regulations

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Question 13.4 **Weighting : 6**

Where relevant, has a permit-to-work system in operation for electrical works and have suitable types of Lock Out / Tag Out equipment been used (e.g. Electrical / Machinery maintenance and modification works)?

Audit Criteria

1. ‘Permit-to-work’ systems are essential to ensure safe working and freedom from hazards, where high voltage electrical supplies, cables and equipment exist, particularly in installation, maintenance or modification works, etc.

Reference:

- Factories and Industrial Undertakings (Electricity) Regulations

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Question 13.5 **Weighting : 6**

Is there a suitable control box with emergency stop switch and inspection / normal mode of operation switch, etc being installed at the top of the car and emergency stop buttons located near the landing door at the lowest floor and at lift pit?

Audit Criteria

1. Once the overall lift installation is completed (i.e. Use Permit of lift was issued), stopping device (emergency stop) and inspection / normal mode of operation switch of the lift should be in place.
2. Auditor should assess the arrangement for verifying the effectiveness of landing door interlock at working floor and car top emergency stop button / emergency stop button located inside lift shaft near the landing door at the lowest floor before entering car top / lift pit.
3. Activate the car top emergency stop button immediate before entering car top. Activate emergency stop button located inside lift shaft near the landing door at the lowest floor immediate before entering lift pit.
4. Depress the emergency stop button located at lift pit immediate after entering the lift pit.
5. There should be 'N/A' if use permit of lift was not issued.

Reference:

- Factories and Industrial Undertakings (Electricity) Regulations
- Lifts and Escalators (Safety) Ordinance
- The Codes of Practice on the Design, Construction, Examination, Testing and Maintenance of Lifts and Escalators.
- Code of Practice for Safety and Work (Lift and Escalator)

Question 13.6 **Weighting: 6**

Are appropriate notice and signage displayed in areas where electricity is used?

Audit Criteria

1. Mandatory notice in the Chinese and English languages, to the treatment of persons receiving electric shock shall be displayed in all parts of the premises where electricity is generated and transformed.
2. The names, designation and contact telephone number of the registered electrical contractor / worker responsible for the temporary electrical supply and installations permanently displayed near the main switch of the installation
3. Adequate "Danger" notices / signs are provided to indicate that the switchboard is alive. Warning signs and locks, as appropriate, shall be provided on doors of switch rooms to guard against unauthorised entry.

Auditor Guidance

1. If no temporary electrical supply and installation is under lift NSC's direct control, the answer should be "N/A".

Part B

Section 14 Dangerous Substances

Question 14.1 **Weighting: 3**

Have the risks to health arising from all dangerous substances been assessed?

Audit Criteria

1. Auditee should identify each dangerous substances used on site and conduct risk assessment according to relevant MSDS.
2. Auditor should advise auditee to improve the coverage of risk assessment on substances hazardous to health such as health hazards, severity of harm, likelihood of occurrence and control measures.
3. Risk rating should also be incorporated in the assessment and it should be assessed based on hazards, quantity, frequency and method of using the substances etc. Otherwise, the answer should be "No".

Question 14.2 **Weighting: 3**

Are all dangerous substances on site labelled correctly?

Audit Criteria

1. Condition of the labels should also be considered.
2. Lubricant oil will not be classified as inflammable substance if the liquid having a flash point not below 66 ^{o}C. MSDS may need to be assessed.

Reference:

- Factories and Industrial Undertakings (Dangerous Substances) Regulations

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Question 14.3 **Weighting: 3**

Are all dangerous substances in the workplace stored correctly?

Audit Criteria

1. Quantity and storage condition of the dangerous substances should be considered.
2. Inflammable gases / substances not exceeding in the exempted quantity and aggregate exempted quantity accordingly shall be stored in suitable closed containers and the containers shall be kept in a metal cupboard or bin. The metal

cupboard or bin shall be situated in a position where it is least likely that the inflammable substances will catch fire.

3. Every container, storeroom, cupboard and bin used for storing flammable substances shall be clearly and boldly marked 'Inflammable Substance 易燃物品'.

Reference:

- Factories and Industrial Undertakings (Dangerous Substances) Regulations
- Dangerous Goods Regulations

Code of Practice for Lift Works and Escalator Works

Section 4.24.1 Inflammable substances and waste should be handled with great care. Inflammable substances should be properly sealed in a suitable and labeled container when not in use. Inflammable waste should be removed from the workplace immediately after use.

Question 14.4 **Weighting: 3**

Are there "No Smoking" signs displayed in all locations containing flammable materials?

Audit Criteria

1. Measures shall be taken to ensure that smoking or the use of naked lights is prohibited in a site where flammable liquid or any mixture containing any such liquid or any substance or thing which will involve danger from fire is used.

Question 14.5 **Weighting: 3**

Are workers handling substances hazardous to health provided with appropriate personal protective equipment and are they used properly?

Audit Criteria

1. Auditor should comment on the personal protective equipment provided to operators even though there was no operation being carried out during the physical verification.
2. If there is no issue record of personal protective equipment for the operators, the answer should be "No".
3. The answer may be "N/A" if no activity was carried out during physical verification provided that auditor had verified the provision of personal protective equipment to the operators.

Part B

Section 15 Manual Handling and Mechanical Materials Handling

Question 15.1 **Weighting: 3**

Have risk assessments for all manual handling operations been carried out by competent persons?

Audit Criteria

1. Auditor should verify the compliance of manual handling operations fulfilled the legal requirement.
2. A manual handling operation takes place every time a load is moved or supported by a person's hands or arms, or by some other forms of bodily effort. It includes lifting, lowering, pushing, pulling and carrying the load.
3. Manual handling risk assessment should be conducted by competent persons with sufficient training (12-hour Certificate of Competency in Manual Handling course organized by OSHC or other appropriate institutes or authorities) and appointed by contractor or employer that he had the ability to do the job properly. Competency includes proper training and experience).
4. Auditor should verify the quality of the manual handling operations risk assessment reports.

Reference :

Legal Requirements

(a) A responsible person is required to appoint competent persons to assist in the implementation of preventive and protective measures if 10 or more employees are normally employed to carry out hazardous manual handling operations on the premises.

(b) Make a preliminary risk assessment of a manual handling operation before it is first undertaken at that workplace.

(c) Perform a further risk assessment of a manual handling operation if (a) the preliminary assessment reveals that it may create safety and health risks and (b) where the operation is unavoidable.

(*A Guide to Part VII of the Occupational Safety and Health Regulation (Manual Handling Operations)*, Section 1)

Question 15.2 **Weighting: 3**

Has competent person been appointed to operate mechanical handling plants (e.g. forklift operations and use of material hoist, etc.) and is it operated safely?

Audit Criteria

1. Training records / certificates should be checked.
2. Include all mechanical materials handling plants and loadshifting machineries used by lift / escalator contractor.
3. Auditor should verify the operation of mechanical aids.

Reference:

- Construction Sites (Safety) Regulations
- Factories and Industrial Undertakings (Loadshifting Machinery) Regulation
- Guidance Notes for Safe Use of Fork-lift Trucks

Question 15.3 **Weighting: 3**

Are there suitable aids for materials handling and transportation of materials used?

Audit Criteria

1. Include all mechanical aids for materials handling and transportation of materials conducted by lift / escalator contractor such as using trolley, handling and pulling of wire ropes / chains, installation of wire ropes for the lift and handling and installation of trailing cables for the lift.

Reference:

- Occupational Safety and Health Regulations
- Guidance Notes for Manual Handling Operations

Question 15.4 **Weighting: 3**

Are all manual handling operations carried out correctly?

Audit Criteria

1. Include all manual handling operations carried out by lift / escalator contractor.
2. On-site verification is necessary.

Reference:

- Occupational Safety and Health Regulations
- Guidance Notes for Manual Handling Operations

Part B

Section 16 Noise

Question 16.1 **Weighting: 3**

Has noise assessment been carried out by a competent person to determine which machines, combinations of machines or work processes including ambient noise, are liable to expose workers to noise levels of 85 dB(A) or more?

Audit Criteria

1. Where applicable, noise assessment report should be checked.
2. The noise assessment is done by a competent person (Certificate of Competence in Workplace Noise Assessment or equivalent courses specified in Guidance Notes on Appointment of Competent Persons for Noise Assessment at Workplaces) and appointed by the contractor or employer that he has the ability to do the job properly.
3. Include all machines, combinations of machines or work processes operated by lift / escalator contractor.

Reference:

- Factories and Industrial Undertakings (Noise at Work) Regulation
- Guidance Notes for Factories and Industrial Undertakings (Noise at Work) Regulation
- Guidance Notes on Appointment of Competent Person to Conduct for Noise Assessment at Workplaces

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Question 16.2 **Weighting: 3**

Where noise levels may lead to the risk of deafness, is there a system implemented to reduce the emission or exposure to noise by planning work, changing machinery or appropriate steps to reduce the need for people to work in high noise levels?

Audit Criteria

1. Where applicable, the arrangement to reduce the emission or exposure to noise should be made and implemented according to hierarchy of control such as by planning work, changing machinery or appropriate steps to reduce the need for people to work in high noise levels. Personal protective equipment should be used as last resort.
2. Include all machines, combinations of machines or work processes operated by lift contractor.

Reference:

- Factories and Industrial Undertakings (Noise at Work) Regulation
- Guidance Notes for Factories and Industrial Undertakings (Noise at Work) Regulation
- Guidance Notes on Appointment of Competent Person to Conduct for Noise

Assessment at Workplaces

Question 16.3 **Weighting: 3**

Where noise levels may lead to the risk of deafness, or where noise may create a nuisance, are approved hearing protection selected and issued to employees?

Audit Criteria

1. Where applicable, approved type of hearing protection should be selected and issued for employees responsible for noisy operations / machines.
2. Include all machines, combinations of machines or work processes in operation.

Reference:

- Factories and Industrial Undertakings (Noise at Work) Regulation
- Guidance Notes for Factories and Industrial Undertakings (Noise at Work) Regulation
- Guidance Notes on Appointment of Competent Person to Conduct for Noise Assessment at Workplaces

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Question 16.4 **Weighting : 3**

Are the noisy operations / machines identified and marking out high noise level zones?

Audit Criteria

1. Where applicable, the noisy operations / machines are required to be demarcated as high noise level zone.
2. Include all machines, combinations of machines or work processes in operated.
3. If no noisy operations / machines are observed or the measured value of Daily Personal Noise Exposure was less than 90 dB(A) in the assessment, the answer should be “N/A”.

Reference:

- Factories and Industrial Undertakings (Noise at Work) Regulation
- Guidance Notes for Factories and Industrial Undertakings (Noise at Work) Regulation
- Guidance Notes on Appointment of Competent Person to Conduct for Noise Assessment at Workplaces

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Part B

Section 17 Escalator Installation

Question 17.1 **Weighting: 3**

Are all working area, storage area and delivery route adequately fenced off with warning notice?

Audit Criteria

1. Working area, storage area and delivery route should be adequately fenced off according to the method statement and delivery plan.
2. Suitable notices should be displayed to alert other parties on site.

Reference :

Code of Practice for Safety at Work (Lift and Escalator)

10.4 Prior to carrying out any escalator work, fencing and warning notices should be provided at both landings indicating that there is no access to the escalator. If traffic signs are provided at the escalator, they should be switched to the "NO ENTRY" mode to alert the users of the escalator not to use it so that disturbances to the working personnel during their work would be avoided.

10.13 When step, step-treads, landing plates, combplates, combplate teeth or trap doors, etc. of an escalator are removed, the escalator should never be run for testing or adjustment, etc. purposes unless the entrances at both ends are securely fenced off and all the workers have left the escalator.

Question 17.2 **Weighting: 3**

Has every worker been provided with a safe place of work such as provision of proper working platform, scaffold, light-duty working platform and power-operated elevating work platform etc. for escalator installation?

Audit Criteria

1. Auditor should verify if proper work equipment are provided for all activities involving a possible fall from height.
2. If working platform / scaffold used did not comply with relevant requirement, the answer should be "No".
3. Every worker should be provided with a suitable fall-arresting system if provision of proper working platform is not practicable.
4. The lanyard of the safety harness should not be anchored to the railings or any member of a temporary scaffolding or bamboo scaffolding, or to any section of water, gas and drainage pipes as these structures or device are not designed to

withstand sudden shock load or impact force.

5. The anchorage point of fall-arresting system should be certified by a professional engineer. Referring to the "Guidance Notes on Classification and Use of Safety Belts and their Anchorage Systems" issued by Labour Department, eyebolt/fixed anchorage should be assessed by "Professional Engineer of the Structural Discipline".
6. Suitable guard-rails and toe-boards should be provided.

Reference :

Code of Practice for Safety at Work (Lift and Escalator)

6.1.4 The provision of a safe place of work or a platform for the persons working on lift / escalators should always be the first choice. If this is impracticable and there is a risk for a person working in the lift well, the escalator wellway or any other places to fall more than 2 m, a suitable safety net should be erected or the person should wear a safety harness / belt with suitable lanyard securely attached to an independent lifeline or an anchorage as an alternative [Regulation 38Q of the CS(S)R].

7.1.11 The use of safety harnesses are preferred to the safety belts. The anchorage points should be as high as possible above the working position in order to limit the height of any fall. In some work activities, inertia reel may also be used.

10.2 During the lifting of an escalator truss or its other part, workers are prohibited to ride on the materials being lifted.

Question 17.3 **Weighting: 3**

Are suitable lifting appliances and lifting gear selected for escalator installation works and are they properly used?

Audit Criteria

1. The lifting appliances and lifting gear should be selected in accordance with the lifting plan / delivery plan.
2. A trial of the lifting operations of modules shall be conducted to ensure the loads are securely rigged before the loads are further lifted. All workers to leave the danger zone of lifting operation before the load being lifted is started to be lifted above 300-500mm off the level where it is originally placed.
3. Lifting supervisor for escalator installation should be appointed:
   - The lifting supervisor shall possess silver card of slinger (construction materials rigger) and qualification of signaller, or silver card of rigger and signaller, or Certificate for Lifting Safety Supervisors provided by the CIC and have a minimum

of four-year experience in lifting operation;

- The lifting supervisor shall monitor and supervise the whole lifting process involving escalator installation.

4. On-site verification is required. If no lifting appliances and lifting gear was set up and no lifting operation was observed during physical verification, the answer should be "NA".

Reference

Code of Practice for Lift Works and Escalator Works

4.31.3 All permanently installed lifting equipment provided in machinery spaces or pulley rooms should be used only within its safe working load. The lifting equipment should also be tested and examined in accordance with the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations, Cap. 59J.

Code of Practice for Safety at Work (Lift and Escalator)

7.2.3 Procedures for lifting large size or heavy loads:

a) When the size or the weight of any load is beyond the capability of a single person, the load should be handled by a team. A leader should be assigned to be completely in-charge of and solely responsible for the safe completion of the task. The leader should not take part in the actual lifting if possible.

b) The leader should inform the lifting party of what the job involves and how it is to be done.

c) He should ensure that the route is free from obstructions and the floor has secure footholds.

d) Proper protective clothing should be worn by the lifting personnel.

e) The leader should ensure that the load is evenly distributed to the party and check that they all have a secure grip.

f) He should take up a position which gives an overall view.

g) He should coordinate the lifting and moving efforts.

h) He should keep a good all-round lookout for the development of any potentially hazardous situation.

i) He should finally ensure that any equipment used in the operation is returned to its proper location afterwards.

Question 17.4 **Weighting: 3**

Where relevant, has Lock Out / Tag Out system been implemented?

Audit Criteria

1. Auditor should verify the effectiveness of implementation of Lock Out / Tag Out system.

Reference :

Code of Practice for Safety at Work (Lift and Escalator)

10.5 Precautions should be taken such that the escalator cannot be set into motion without the consent of the persons performing the work. For example, the main switch of the escalator should be turned off, locked and tagged by the person-in-charge.

10.11 No working personnel should enter the escalator truss to carry out work such as the installation of balustrade and skirtings, etc. unless the main switch to the escalator has been turned off, locked out and tagged, and the escalator is stationary. Besides, warning notices should be displayed at the main switch indicating that work is in progress at the escalator at that time.

10.13 When step, step-treads, landing plates, combplates, combplate teeth or trap doors, etc. of an escalator are removed, the escalator should never be run for testing or adjustment, etc. purposes unless the entrances at both ends are securely fenced off and all the workers have left the escalator.

10.14 Escalator should not be re-started unless all obstructions are removed and coordination with other workers working within the same escalator is made. The operator who handles the switch should be able to see the entire escalator to ensure nobody is working at the escalator before re-starting.

Part B

Section 18 Miscellaneous

Question 18.1 **Weighting : 3**

Are appropriate firefighting equipment available near high risk areas (E.g. welding and spray painting operations)?

Audit Criteria:

1. The suitability, validity, condition and location of firefighting equipment (where applicable) should be considered.

Reference:

- Construction Sites (Safety) Regulations
- Code of Practice for Safety and Work (Lift and Escalator)

Code of Practice for Safety at Work (Lift and Escalator)

7.4.3 A fire watch should be provided for the hot work process to make sure fires do not start.

7.4.4 No worker should be allowed to smoke while lift / escalator works are being carried out.

7.4.5 Sufficient number and correct type of fire extinguishers should be available at suitable work locations.

Question 18.2 **Weighting : 3**

Have all the dangerous parts of machines and equipment that could cause injury been effectively guarded?

Audit Criteria:

1. Use fixed guards wherever possible, properly fastened in place with screws or nuts and bolts which need tools to remove them;
2. If employees need regular access to parts of the machine and a fixed guard is not possible, use an interlocked guard for those parts. This will ensure that the machine cannot start before the guard is closed and will stop if the guard is opened while the machine is operating;
3. Consider about the best materials for guards – plastic may be easy to see through, but can be easily scratched or damaged. If wire mesh or similar materials are used, make sure the holes are not large enough to allow access to the danger area. As well as preventing such access, a guard may also be used to prevent harmful fluids, dust etc. from escaping.
4. Moving parts inside escalator driving station and return station, such as motor and steps, should be guarded.
5. The concern of effective guarding for lift counter-weight should be reflected in question 18.3.

Question 18.3 **Weighting : 3**

Are all the counterweights for lift guarded from contact?

Audit Criteria:

1. Construction and condition of guarding should be considered.
2. Machineries under installation period and before power supply connected should be exempted. Assessment should be conducted if power supply is connected.

Reference:

- Construction Sites (Safety) Regulations
- Lifts and Escalators (Safety) Ordinance

- Factories and Industrial Undertakings (Guarding and Operation of Machinery) Regulations – as machine guarding reference only
- The Codes of Practice on the Design, Construction, Examination, Testing and Maintenance of Lifts and Escalators.
- Code of Practice for Safety and Work (Lift and Escalator)

Code of Practice for Safety at Work (Lift and Escalator)

9.5.3 All dangerous parts of the machine and the whole lift installation should be effectively guarded to prevent injury to the workers carrying out the lift installation, repair or maintenance work. The dangerous part which by reason of its position, its construction or the nature of the work being performed does not give rise to any reasonably foreseeable hazard to the safety of any working personnel need not be guarded.

Question 18.4 **Weighting: 3**

Are there effective communication system between workers?

Audit Criteria

1. Checking the effective communication system.

Reference :

CIC safe guideline (Volume 2)

Section 6.16 Lift workers are not allowed to work alone inside a lift shaft. If it is practically unavoidable, the worker should have sufficient communication devices such as motion sensor to generate alarm in addition to the provision of walkie talkie. The worker inside the lift shaft should be able to verbally communicate with a nearby co-worker.

Section 11.1 The planning team should develop and implement an effective communication system for lift installation works. Such system should be clearly defined and properly recorded in the lift installation safety plan prior to the commencement of any lift installation work.

Section 11.2 Adequate and effective communication means / equipment, such as walkie-talkie, layout plan showing the designated work area for different work groups, etc., should be provided to responsible persons of different parties involved in the lift installation works. Mobile phones should not be considered an effective communication for workers working inside a lift shaft.

CIC safe guideline (Volume 4)

Section 12 Provision of Effective Communication System

12.1 The Lift Contractor should develop and implement an effective and reliable communication system for Builders' Lift Work. Such system should be clearly defined and properly recorded before the commencement of the work.

12.2 When choosing means of communication, the effectiveness of the communication device in the working conditions and environment should be assessed, and all foreseeable risks should be duly considered by the Lift Contractor.

12.3 The Lift Contractor should provide adequate and effective communication means / equipment, such as mobile phones, walkie-talkies, etc., to Lift Workers. The Lift Contractor should ensure that the communication means / equipment would not be interfered by other communication systems in use. When choosing radio frequency based or wireless devices as a communication means, special attention should be given to the limitation of the reception in lift shaft or area shielded by metal and concrete walls. Site supervisors and Lift Workers should check the reception of the communication devices before they start the works. If the reception is poor or intermittent, an alternative communication means should be adopted. In addition, the Lift Contractor should know the working locations of the Lift Workers concerned.

12.4 It is important to ensure that all messages can be communicated easily, instantly and clearly.

Code of Practice for Safety at Work (Lift and Escalator)

Section 6.6.1 f) Arrangements for the use of communication equipment by the working personnel during the work should be made.

Question 18.5 **Weighting: 3**

Are storage facilities for personal property and clothing adequate, properly maintained and secured?

Audit Criteria

1. Suitable and sufficient facilities shall, where necessary, be provided or made available at readily accessible places to enable persons to lock away:
   - any such special clothing which is not taken home;
   - their own clothing which is not worn during working hours; and
   - their personal property

Question 18.6 **Weighting: 3**

Are adequate welfare facilities such as eating & rest areas and drinking water

provided to workers?

Audit Criteria

1. Auditor should base on contractual requirement on provision for eating and rest areas facilities if any and site situation to make recommendation.
2. Auditor should verify the adequacy of provision of drinking water.

Reference :

Occupational Safety and Health Regulation – Employees to be provided with adequate supplies of drinking water

The person responsible for a workplace must ensure that sufficient potable water is provided at the workplace for the consumption by employees who are employed there.

Question 18.7 **Weighting: 3**

Are there appropriate measures taken out based on the results of heat stress risk assessment?

Audit Criteria

1. Auditor should verify the risk assessment on heat stress (use of heat stress checklist published by Labour Department or Construction Industry Council).
2. Measures should cover the assessment of workers working in or near of heat-generating machinery and poor ventilated areas.
3. Measures should cover provision of drinking water.
4. Other measures like lower workload or shorter working during, clothing, etc.

Annex A

Scoring Table for HALENSAS Version 1.3

Part A

Safe systems of work – Process Control Programme

Section	Title	No. of Questions	Score	% of score
1	**Process safety information**	9	27	12.68
2	**Process Hazard Analysis (PHA) / Risk Assessment**	10	33	15.49
3	**Development of safe methods**	10	36	16.90
4	**Implementing the system**	9	42	19.72
5	**Monitoring the system**	15	75	35.21
	PART A Total	**53**	**213**	**100.00**

Part B

Work Site Conditions

Section	Title	No. of Questions	Score	% of score
6	**Working At Height**	8	48	16.67
7	**Protection Against Falling Objects**	4	24	8.33
8	**Housekeeping**	5	30	10.42
9	**Lifting Operations**	4	24	8.33
10	**Welding / Cutting Operations and Equipment**	7	21	7.29
11	**Abrasive wheels**	6	18	6.25
12	**Portable Tools**	5	15	5.21
13	**Electrical Works**	6	36	12.50
14	**Dangerous Substances**	5	15	5.21
15	**Manual Handling and Mechanical Materials Handling**	4	12	4.17
16	**Noise**	4	12	4.17
17	**Escalator Installation**	4	12	4.17
18	**Miscellaneous**	7	21	7.29
	PART B Total	**69**	**288**	**100.00**

PART A Total (Section 1-5)	**53**	**213**	**42.51**
PART B Total (Section 6-18)	**69**	**288**	**57.49**
OVERALL Total (PART A and PART B)	**122**	**501**	**100.00**

Annex B

Comparison of HALENSAS version 1.2and version 1.3

HALENSAS	**Version 1.2**	**Version 1.3**
Score of the system	**Part A : 216** **Part B : 276** **Total : 492**	**Part A : 213** **Part B : 288** **Total : 501**
No. of questions	**Part A : 53** **Part B : 65** **Total : 118**	**Part A : 53** **Part B : 69** **Total : 122**
Part A	Section 1 : Process Safety Information	
		Q1.1, Q1.3 - Q1.6 refine criteria
		Q1.5 re-weight audit score
		Q1.8 refine criteria re provision of SO and SS
Part A	Section 2 : Process Hazard Analysis (PHA) / Risk Assessment	
		Q2.1, Q2.4, Q2.5, Q2.7 refine criteria
		Q2.8 re-weight audit score
Part A	Section 3 : Development of safe method – operating procedures and practices	
	Q3.3 deleted	Q 3.2 & Q3.3 combined
		Q3.5 refine criteria
		Q3.6 refine question, provision and revalidation of 27-hr “Safety Training Course for Site Management Staff”, safety supervisor training and silver card training
		Q3.7 refine criteria
Part A	Section 4 : Implementing the system	
		Q4.1 re-weight audit score

HALENSAS	**Version 1.2**	**Version 1.3**
		Q4.1 refine question
		Q4.3 refine criteria
		Q4.4 & Q4.5 re-weight audit score
		Q4.6 refine criteria re provision and revalidation of 27-hr “Safety Training Course for Site Management Staff”, safety supervisor training and silver card training
		Q4.7 refine criteria
		Q4.9 new question re provision of appropriate masks with high protection level and high breathability
Part A	Section 5 : Monitoring the system	
		Q5.2 refine criteria re acceptance of electronic records
		Q5.3 refine criteria re competency of monitoring team members
		Q5.5 & Q5.6 refine question and criteria
		Q5.7 refine criteria re WSB observers and WSB programme
		Q5.15 refine criteria
Part B		Q6.1 Reference updated with Code of Practice (CoP) (LD)
		Q6.3 refine question and criteria
		Q6.4, Q6.5 & Q6.6 refine criteria
		Q6.7 refine question and criteria
		Q6.8 refine criteria
Part B		Q7.1 & Q7.4 refine criteria
Part B		Q8.1 refine criteria
	Q8.2 replaced	Q8.2 refine question and criteria re good housekeeping and waste disposal
	Q8.3 consideration of waste disposal moved to Q8.2	Q8.3 refine question and criteria, reference updated with CoP (LD)
		Q8.4 refine criteria, reference updated

HALENSAS	**Version 1.2**	**Version 1.3**
		with CoP (EMSD)
		Q8.5 refine question and criteria
Part B		Q9.1 refine criteria
		Q9.2 refine criteria, reference updated with CoP (EMSD)
		Q9.3 refine criteria
		Q9.4 refine criteria for the requirement of A12 / A12S silver card
Part B		Q10.1 refine question and criteria, reference updated with CoP (EMSD)
		Q10.4 refine criteria
		Q10.6 refine question and criteria
Part B		Q11.1 & Q11.3 refine criteria
Part B		Q12.1 - Q12.4 refine question
		Q12.3 refine criteria
Part B		Q13.3 refine criteria
Part B		Q14.1 refine criteria
		Q14.3 reference updated with CoP (EMSD)
		Q14.4 refine question
		Q14.5 refine criteria
Part B		Q15.1 refine question
		Q15.2 & Q15.3 refine question and criteria
		Q15.4 refine criteria
Part B		Q16.1 & Q16.2 refine question
		Q16.4 refine criteria
Part B	Section 17 new section	Q17.1 - Q17.4 new questions
Part B	Section 17 rearranged to section 18	Q18.2 refine criteria
		Q18.4 refine question, eference updated with CoP (LD)