

COMPETENCY STANDARDS



ELEVATOR INSTALLATION LEVEL II

CONSTRUCTION SECTOR

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
East Service Road, South Luzon Expressway (SLEX), Fort Bonifacio, Taguig City, Metro Manila

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CONSTRUCTION SECTOR

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COMPETENCY STANDARDS FOR ELEVATOR INSTALLATION LEVEL II

SECTION 1 ELEVATOR INSTALLATION LEVEL II

The **ELEVATOR INSTALLATION LEVEL II** qualification consists of competencies that a person must achieve in order to install different types of elevator. The final objective is to ensure the overall quality and high performance of elevator installation through standardization.

The units of competency comprising this qualification include the following:

CODE NO.	BASIC COMPETENCIES
400311210	Participate in workplace communication
400311211	Work in a team environment
400311212	Solve/address general workplace problems
400311213	Develop career and life decisions
400311214	Contribute to workplace innovation
400311215	Present relevant information
400311216	Practice occupational safety and health policies and procedures
400311217	Exercise efficient and effective sustainable practices in the workplace
400311218	Practice entrepreneurial skills in the workplace

CODE NO.	COMMON COMPETENCIES
CON931201	Prepare construction materials and tools
CON311201	Observe procedures, specifications and manuals of instruction
CON311203	Perform mensurations and calculations
CON311204	Maintain tools and equipment

CODE NO.	CORE COMPETENCIES
CONXXXXXX	Observe elevator installation safety requirements
CONXXXXXX	Check site requirements, equipment and tools
CONXXXXXX	Prepare scaffolds, template holders and plumb lines
CONXXXXXX	Install guide rail and machine beams
CONXXXXXX	Install control panel and machine
CONXXXXXX	Install pit equipment, car frame, platform and counterweight frame
CONXXXXXX	Roping/belting of car to counterweight and installation of travelling cable
CONXXXXXX	Install entrances and doors, hoistway equipment/ fixtures
CONXXXXXX	Install hoistway ducting, piping and wiring
CONXXXXXX	Install car and hoistway components

A person who has achieved this Qualification is competent to be a –

- Elevator Installer

SECTION 2 COMPETENCY STANDARDS

This section gives the details and contents of the units of competency required in **ELEVATOR INSTALLATION LEVEL II**. These units of competency are categorized into basic, common and core competencies.

BASIC COMPETENCIES

UNIT OF COMPETENCY : PARTICIPATE IN WORKPLACE COMMUNICATION

UNIT CODE : 400311210

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to gather, interpret and convey information in response to workplace requirements.

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Obtain and convey workplace information	1.1 Specific and relevant information is accessed from appropriate sources 1.2 Effective questioning, active listening and speaking skills are used to gather and convey information 1.3 Appropriate medium is used to transfer information and ideas 1.4 Appropriate non-verbal communication is used 1.5 Appropriate lines of communication with supervisors and colleagues are identified and followed 1.6 Defined workplace procedures for the location and	1.1 Effective verbal and nonverbal communication 1.2 Different modes of communication 1.3 Medium of communication in the workplace 1.4 Organizational policies 1.5 Communication procedures and systems 1.6 Lines of Communication 1.7 Technology relevant to the enterprise and the individual's work responsibilities 1.8 Workplace etiquette	1.1 Following simple spoken language 1.2 Performing routine workplace duties following simple written notices 1.3 Participating in workplace meetings and discussions 1.4 Preparing work-related documents 1.5 Estimating, calculating and recording routine workplace measures 1.6 Relating/ Interacting with people of various levels in the workplace 1.7 Gathering and providing basic information in response to workplace requirements 1.8 Basic business writing skills 19 Interpersonal skills in the workplace 2.0 Active-listening skills

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	<p>storage of information are used</p> <p>1.7 Personal interaction is carried out clearly and concisely</p>		
<p>2. Perform duties following workplace instructions</p>	<p>2.1 Written notices and instructions are read and interpreted in accordance with organizational guidelines</p> <p>2.2 Routine written instruction are followed based on established procedures</p> <p>2.3 Feedback is given to workplace supervisor based instructions/ information received</p> <p>2.4 Workplace interactions are conducted in a courteous manner</p> <p>2.5 Where necessary, clarifications about routine workplace procedures and matters concerning conditions of employment are sought and asked from appropriate sources</p> <p>2.6 Meetings outcomes are interpreted and implemented</p>	<p>2.1 Effective verbal and non-verbal communication</p> <p>2.2 Different modes of communication</p> <p>2.3 Medium of communication in the workplace</p> <p>2.4 Organizational/ Workplace policies</p> <p>2.5 Communication procedures and systems</p> <p>2.6 Lines of communication</p> <p>2.7 Technology relevant to the enterprise and the individual's work responsibilities</p> <p>2.8 Effective questioning techniques (clarifying and probing)</p> <p>2.9 Workplace etiquette</p>	<p>2.1 Following simple spoken instructions</p> <p>2.2 Performing routine workplace duties following simple written notices</p> <p>2.3 Participating in workplace meetings and discussions</p> <p>2.4 Completing work-related documents</p> <p>2.5 Estimating, calculating and recording routine workplace measures</p> <p>2.6 Relating/ Responding to people of various levels in the workplace</p> <p>2.7 Gathering and providing information in response to workplace requirements</p> <p>2.8 Basic questioning/querying</p> <p>2.9 Skills in reading for information</p> <p>2.10 Skills in locating</p>

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Complete relevant work related documents	3.1 Range of forms relating to conditions of employment are completed accurately and legibly 3.2 Workplace data is recorded on standard workplace forms and documents 3.3 Errors in recording information on forms/ documents are identified and acted upon 3.4 Reporting requirements to supervisor are completed according to organizational guidelines	3.1 Effective verbal and non-verbal communication 3.2 Different modes of communication 3.3 Workplace forms and documents 3.4 Organizational/ Workplace policies 3.5 Communication procedures and systems 3.6 Technology relevant to the enterprise and the individual's work responsibilities	3.1 Completing work-related documents 3.2 Applying operations of addition, subtraction, division and multiplication 3.3 Gathering and providing information in response to workplace requirements 3.4 Effective record keeping skills

RANGE OF VARIABLES

VARIABLE	RANGE
1. Appropriate sources	May include: 1.1. Team members 1.2. Supervisor/Department Head 1.3. Suppliers 1.4. Trade personnel 1.5. Local government 1.6. Industry bodies
2. Medium	May include: 2.1. Memorandum 2.2. Circular 2.3. Notice 2.4. Information dissemination 2.5. Follow-up or verbal instructions 2.6. Face-to-face communication 2.7. Electronic media (disk files, cyberspace)
3. Storage	May include: 3.1. Manual filing system 3.2. Computer-based filing system
4. Workplace interactions	May include: 4.1. Face-to-face 4.2. Telephone 4.3. Electronic and two-way radio 4.4. Written including electronic means, memos, instruction and forms 4.5. Non-verbal including gestures, signals, signs and diagrams
5. Forms	May include: 5.1. HR/Personnel forms, telephone message forms, safety reports

EVIDENCE GUIDE

<p>1. Critical aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1. Prepared written communication following standard format of the organization 1.2. Accessed information using workplace communication equipment/systems 1.3. Made use of relevant terms as an aid to transfer information effectively 1.4. Conveyed information effectively adopting formal or informal communication
<p>2. Resource Implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1. Fax machine 2.2. Telephone 2.3. Notebook 2.4. Writing materials 2.5. Computer with Internet connection
<p>3. Methods of Assessment</p>	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1. Demonstration with oral questioning 3.2. Interview 3.3. Written test 3.4. Third-party report
<p>4. Context for Assessment</p>	<ul style="list-style-type: none"> 4.1. Competency may be assessed individually in the actual workplace or through an accredited institution

UNIT OF COMPETENCY: WORK IN A TEAM ENVIRONMENT

UNIT CODE : 400311211

UNIT DESCRIPTOR : This unit covers the skills, knowledge and attitudes to identify one’s roles and responsibilities as a member of a team.

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Describe team role and scope	1.1 The <i>role and objective of the team</i> is identified from available <i>sources of information</i> 1.2 Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources	1.1 Group structure 1.2 Group development 1.3 Sources of information	1.1 Communicating with others, appropriately consistent with the culture of the workplace 1.2 Developing ways in improving work structure and performing respective roles in the group or organization
2. Identify one’s role and responsibility within a team	2.1 Individual roles and responsibilities within the team environment are identified 2.2 Roles and objectives of the team is identified from available <i>sources of information</i> 2.3 Team parameters, reporting relationships and responsibilities are identified based on team discussions and appropriate external sources	2.1 Team roles and objectives 2.2 Team structure and parameters 2.3 Team development 2.4 Sources of information	2.1 Communicating with others, appropriately consistent with the culture of the workplace 2.2 Developing ways in improving work structure and performing respective roles in the group or organization

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Work as a team member	3.1 Effective and appropriate forms of communications are used and interactions undertaken with team members based on company practices. 3.2 Effective and appropriate contributions made to complement team activities and objectives, based on workplace context 3.3 Protocols in reporting are observed based on standard company practices. 3.4 Contribute to the development of team work plans based on an understanding of team's role and objectives	3.1 Communication Process 3.2 Workplace communication protocol 3.3 Team planning and decision making 3.4 Team thinking 3.5 Team roles 3.6 Process of team development 3.7 Workplace context	3.1 Communicating appropriately, consistent with the culture of the workplace 3.2 Interacting effectively with others 3.3 Deciding as an individual and as a group using group think strategies and techniques 3.4 Contributing to Resolution of issues and concerns

RANGE OF VARIABLES

VARIABLE	RANGE
1. Role and objective of team	May include: <ol style="list-style-type: none"> 1.1. Work activities in a team environment with enterprise or specific sector 1.2. Limited discretion, initiative and judgement maybe demonstrated on the job, either individually or in a team environment
2. Sources of information	May include: <ol style="list-style-type: none"> 2.1. Standard operating and/or other workplace procedures 2.2. Job procedures 2.3. Machine/equipment manufacturer's specifications and instructions 2.4. Organizational or external personnel 2.5. Client/supplier instructions 2.6. Quality standards 2.7. OHS and environmental standards
3. Workplace context	May include: <ol style="list-style-type: none"> 3.1. Work procedures and practices 3.2. Conditions of work environments 3.3. Legislation and industrial agreements 3.4. Standard work practice including the storage, safe handling and disposal of chemicals 3.5. Safety, environmental, housekeeping and quality guidelines

EVIDENCE GUIDE

<p>1. Critical aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Worked in a team to complete workplace activity 1.2 Worked effectively with others 1.3 Conveyed information in written or oral form 1.4 Selected and used appropriate workplace language 1.5 Followed designated work plan for the job
<p>2. Resource Implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Access to relevant workplace or appropriately simulated environment where assessment can take place 2.2 Materials relevant to the proposed activity or tasks
<p>3. Methods of Assessment</p>	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Role play involving the participation of individual member to the attainment of organizational goal 3.2 Case studies and scenarios as a basis for discussion of issues and strategies in teamwork 3.3 Socio-drama and socio-metric methods 3.4 Sensitivity techniques 3.5 Written Test
<p>4. Context for Assessment</p>	<ul style="list-style-type: none"> 4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2 Assessment shall be observed while task are being undertaken whether individually or in group

UNIT OF COMPETENCY : SOLVE/ADDRESS GENERAL WORKPLACE PROBLEMS

UNIT CODE : 400311212

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to apply problem-solving techniques to determine the origin of problems and plan for their resolution. It also includes addressing procedural problems through documentation, and referral.

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms are elaborated in the Range of Variables</i>	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify routine problems	1.1 Routine problems or procedural problem areas are identified 1.2 Problems to be investigated are defined and determined 1.3 Current conditions of the problem are identified and documented	1.1 Current industry hardware and software products and services 1.2 Industry maintenance, service and helpdesk practices, processes and procedures 1.3 Industry standard diagnostic tools 1.4 Malfunctions and resolutions	1.1 Identifying current industry hardware and software products and services 1.2 Identifying current industry maintenance, services and helpdesk practices, processes and procedures. 1.3 Identifying current industry standard diagnostic tools 1.4 Describing common malfunctions and resolutions. 1.5 Determining the root cause of a routine malfunction

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Look for solutions to routine problems	2.1 Potential solutions to problem are identified 2.2 Recommendations about possible solutions are developed, documented , ranked and presented to appropriate person for decision	2.1 Current industry hardware and software products and services 2.2 Industry service and helpdesk practices, processes and procedures 2.3 Operating systems 2.4 Industry standard diagnostic tools 2.5 Malfunctions and resolutions. 2.6 Root cause analysis	2.1 Identifying current industry hardware and software products and services 2.2 Identifying services and helpdesk practices, processes and procedures. 2.3 Identifying operating system 2.4 Identifying current industry standard diagnostic tools 2.5 Describing common malfunctions and resolutions. 2.6 Determining the root cause of a routine malfunction
3. Recommend solutions to problems	3.1 Implementation of solutions are planned 3.2 Evaluation of implemented solutions are planned 3.3 Recommended solutions are documented and submit to appropriate person for confirmation	3.1 Standard procedures 3.2 Documentation produce	3.1 Producing documentation that recommends solutions to problems 3.2 Following established procedures

RANGE OF VARIABLES

VARIABLE	RANGE
1. Problems/Procedural Problem	May include: 1.1 Routine/non – routine processes and quality problems 1.2 Equipment selection, availability and failure 1.3 Teamwork and work allocation problem 1.4 Safety and emergency situations and incidents 1.5 Work-related problems outside of own work area
2. Appropriate person	May include: 2.1 Supervisor or manager 2.2 Peers/work colleagues 2.3 Other members of the organization
3. Document	May include: 3.1 Electronic mail 3.2 Briefing notes 3.3 Written report 3.4 Evaluation report
4. Plan	May include: 4.1 Priority requirements 4.2 Co-ordination and feedback requirements 4.3 Safety requirements 4.4 Risk assessment 4.5 Environmental requirements

EVIDENCE GUIDE

<p>1. Critical aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Determined the root cause of a routine problem 1.2 Identified solutions to procedural problems. 1.3 Produced documentation that recommends solutions to problems. 1.4 Followed established procedures. 1.5 Referred unresolved problems to support persons.
<p>2. Resource Implications</p>	<p>2.1. Assessment will require access to a workplace over an extended period, or a suitable method of gathering evidence of operating ability over a range of situations.</p>
<p>3. Methods of Assessment</p>	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Case Formulation 3.2 Life Narrative Inquiry 3.3 Standardized test <p>The unit will be assessed in a holistic manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation. Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual workplace and will include walk through of the relevant competency components.</p>
<p>4. Context for Assessment</p>	<p>4.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.</p>

UNIT OF COMPETENCY : DEVELOP CAREER AND LIFE DECISIONS

UNIT CODE : 400311213

UNIT DESCRIPTOR : This unit covers the knowledge, skills, and attitudes in managing one’s emotions, developing reflective practice, and boosting self-confidence and developing self-regulation.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Manage one’s emotion	1.1 Self-management strategies are identified 1.2 Skills to work independently and to show initiative, to be conscientious, and persevering in the face of setbacks and frustrations are developed 1.3 Techniques for effectively handling negative emotions and unpleasant situation in the workplace are examined	1.1 Self-management strategies that assist in regulating behavior and achieving personal and learning goals (e.g. Nine self-management strategies according to Robert Kelley) 1.2 Enablers and barriers in achieving personal and career goals 1.3 Techniques in handling negative emotions and unpleasant situation in the workplace such as frustration, anger, worry, anxiety, etc.	1.1 Managing properly one’s emotions and recognizing situations that cannot be changed and accept them and remain professional 1.2 Developing self-discipline, working independently and showing initiative to achieve personal and career goals 1.3 Showing confidence, and resilience in the face of setbacks and frustrations and other negative emotions and unpleasant situations in the workplace

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Develop reflective practice	2.1 Personal strengths and achievements, based on self-assessment strategies and teacher feedback are contemplated 2.2 Progress when seeking and responding to feedback from teachers to assist them in consolidating strengths, addressing weaknesses and fulfilling their potential are monitored 2.3 Outcomes of personal and academic challenges by reflecting on previous problem solving and decision making strategies and feedback from peers and teachers are predicted	2.1 Basic SWOT analysis 2.2 Strategies to improve one's attitude in the workplace 2.3 Gibbs' Reflective Cycle/Model (Description, Feelings, Evaluation, Analysis, Conclusion, and Action plan)	2.1 Using the basic SWOT analysis as self-assessment strategy 2.2 Developing reflective practice through realization of limitations, likes/dislikes; through showing of self-confidence 2.3 Demonstrating self-acceptance and being able to accept challenges
3. Boost self-confidence and develop self-regulation	3.1 Efforts for continuous self-improvement are demonstrated 3.2 Counter-productive tendencies at work are eliminated 3.3 Positive outlook in life are maintained.	3.1 Four components of self-regulation based on Self-Regulation Theory (SRT) 3.2 Personality development concepts 3.3 Self-help concepts (e. g., 7 Habits by Stephen Covey, transactional analysis, psycho-spiritual concepts)	3.1 Performing effective communication skills – reading, writing, conversing skills 3.2 Showing affective skills – flexibility, adaptability, etc. 3.3 Self-assessment for determining one's strengths and weaknesses

RANGE OF VARIABLES

VARIABLE	RANGE
1. Self-management strategies	May include: 1.1 Seeking assistance in the form of job coaching or mentoring 1.2 Continuing dialogue to tackle workplace grievances 1.3 Collective negotiation/bargaining for better working conditions 1.4 Share your goals to improve with a trusted co-worker or supervisor 1.5 Make a negativity log of every instance when you catch yourself complaining to others 1.6 Make lists and schedules for necessary activities
2. Unpleasant situation	May include: 2.1 Job burn-out 2.2 Drug dependence 2.3 Sulking

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1 Express emotions appropriately 1.2 Work independently and show initiative 1.3 Consistently demonstrate self-confidence and self-discipline
2. Resource Implications	The following resources should be provided: 2.1. Access to workplace and resources 2.2. Case studies
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1. Demonstration or simulation with oral questioning 3.2. Case problems involving work improvement and sustainability issues 3.3. Third-party report
4. Context for Assessment	4.1. Competency assessment may occur in workplace or any appropriately simulated environment

UNIT OF COMPETENCY : **CONTRIBUTE TO WORKPLACE INNOVATION**

UNIT CODE : **400311214**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to make a pro-active and positive contribution to workplace innovation.

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify opportunities to do things better.	1.1 Opportunities for improvement are identified proactively in own area of work. 1.2 Information are gathered and reviewed which may be relevant to ideas and which might assist in gaining support for idea.	1.1 Roles of individuals in suggesting and making improvements. 1.2 Positive impacts and challenges in innovation. 1.3 Types of changes and responsibility. 1.4 Seven habits of highly effective people.	1.1 Identifying opportunities to improve and to do things better. Involvement. 1.2 Identifying the positive impacts and the challenges of change and innovation. 1.3 Identifying examples of the types of changes that are within and outside own scope of responsibility
2. Discuss and develop ideas with others	2.1 People who could provide input to ideas for improvements are identified. 2.2 Ways of approaching people to begin sharing ideas are selected. 2.3 Meeting is set with relevant people. 2.4 Ideas for follow up are review and selected based on feedback. 2.5 Critical inquiry method is used to discuss and develop ideas with others.	2.1 Roles of individuals in suggesting and making improvements. 2.2 Positive impacts and challenges in innovation. 2.3 Types of changes and responsibility. 2.4 Seven habits of highly effective people.	2.1 Identifying opportunities to improve and to do things better. Involvement. 2.2 Identifying the positive impacts and the challenges of change and innovation. 2.3 Providing examples of the types of changes that are within and outside own scope of responsibility 2.4 Communicating ideas for change through small group discussions and meetings.

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Integrate ideas for change in the workplace.	3.1 Critical inquiry method is used to integrate different ideas for change of key people. 3.2 Summarizing, analyzing and generalizing skills are used to extract salient points in the pool of ideas. 3.3 Reporting skills are likewise used to communicate results. 3.4 Current Issues and concerns on the systems, processes and procedures, as well as the need for simple innovative practices are identified.	3.1 Roles of individuals in suggesting and making improvements. 3.2 Positive impacts and challenges in innovation. 3.3 Types of changes and responsibility. 3.4 Seven habits of highly effective people. 3.5 Basic research skills.	3.1 Identifying opportunities to improve and to do things better. Involvement. 3.2 Identifying the positive impacts and the challenges of change and innovation. 3.3 Providing examples of the types of changes that are within and outside own scope of responsibility. 3.4 Communicating ideas for change through small group discussions and meetings. 3.5 Demonstrating skills in analysis and interpretation of data.

RANGE OF VARIABLES

VARIABLE	RANGE
1. Opportunities for improvement	May include: 1.1 Systems. 1.2 Processes. 1.3 Procedures. 1.4 Protocols. 1.5 Codes. 1.6 Practices.
2. Information	May include: 2.1 Workplace communication problems. 2.2 Performance evaluation results. 2.3 Team dynamics issues and concerns. 2.4 Challenges on return of investment 2.5 New tools, processes and procedures. 2.6 New people in the organization.
3. People who could provide input	May include: 3.1 Leaders. 3.2 Managers. 3.3 Specialists. 3.4 Associates. 3.5 Researchers. 3.6 Supervisors. 3.7 Staff. 3.8 Consultants (external) 3.9 People outside the organization in the same field or similar expertise/industry. 3.10 Clients
4. Critical inquiry method	May include: 4.1 Preparation. 4.2 Discussion. 4.3 Clarification of goals. 4.4 Negotiate towards a Win-Win outcome. 4.5 Agreement. 4.6 Implementation of a course of action. 4.7 Effective verbal communication. See our pages: Verbal Communication and Effective Speaking. 4.8 Listening. 4.9 Reducing misunderstandings is a key part of effective negotiation. 4.10 Rapport Building. 4.11 Problem Solving. 4.12 Decision Making. 4.13 Assertiveness. 4.14 Dealing with Difficult Situations.

5. Reporting skills	May include: 5.1 Data management. 5.2 Coding. 5.3 Data analysis and interpretation. 5.4 Coherent writing. 5.5 Speaking.
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EVIDENCE GUIDE

<p>1. Critical aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Identified opportunities to do things better. 1.2 Discussed and developed ideas with others on how to contribute to workplace innovation. 1.3 Integrated ideas for change in the workplace. 1.4 Analyzed and reported rooms for innovation and learning in the workplace.</p>
<p>2. Resource Implications</p>	<p>The following resources should be provided:</p> <p>2.1 Pens, papers and writing implements. 2.2 Cartolina. 2.3 Manila papers.</p>
<p>3. Methods of Assessment</p>	<p>Competency in this unit may be assessed through:</p> <p>3.1 Psychological and behavioral Interviews. 3.2 Performance Evaluation. 3.3 Life Narrative Inquiry. 3.4 Review of portfolios of evidence and third-party workplace reports of on-the-job performance. 3.5 Sensitivity analysis. 3.6 Organizational analysis. 3.7 Standardized assessment of character strengths and virtues applied.</p>
<p>4. Context for Assessment</p>	<p>4.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.</p>

UNIT OF COMPETENCY : PRESENT RELEVANT INFORMATION

UNIT CODE : 400311215

UNIT DESCRIPTOR : This unit of covers the knowledge, skills and attitudes required to present data/information appropriately.

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Gather data/information	1.1 Evidence, facts and information are collected 1.2 Evaluation, terms of reference and conditions are reviewed to determine whether data/information falls within project scope	1.1 Organisational protocols 1.2 Confidentiality 1.3 Accuracy 1.4 Business mathematics and statistics 1.5 Data analysis techniques/procedures 1.6 Reporting requirements to a range of audiences 1.7 Legislation, policy and procedures relating to the conduct of evaluations 1.8 Organisational values, ethics and codes of conduct	1.1 Describing organisational protocols relating to client liaison 1.2 Protecting confidentiality 1.3 Describing accuracy 1.4 Computing business mathematics and statistics 1.5 Describing data analysis techniques/procedures 1.6 Reporting requirements to a range of audiences 1.7 Stating legislation, policy and procedures relating to the conduct of evaluations 1.8 Stating organisational values, ethics and codes of conduct
2. Assess gathered data/information	2.1 Validity of data/information is assessed 2.2 Analysis techniques are applied to assess data/information. 2.3 Trends and anomalies are identified 2.4 Data analysis techniques and	2.1 Business mathematics and statistics 2.2 Data analysis techniques/procedures 2.3 Reporting requirements to a range of audiences 2.4 Legislation, policy and procedures relating to the	2.1 Computing business mathematics and statistics 2.2 Describing data analysis techniques/procedures 2.3 Reporting requirements to a range of audiences

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	<p>procedures are documented</p> <p>2.5 Recommendations are made on areas of possible improvement.</p>	<p>conduct of evaluations</p> <p>2.5 Organisational values, ethics and codes of conduct</p>	<p>2.4 Stating legislation, policy and procedures relating to the conduct of evaluations</p> <p>2.5 Stating organisational values, ethics and codes of conduct</p>
<p>3. Record and present information</p>	<p>3.1 Studied data/information are recorded.</p> <p>3.2 Recommendations are analysed for action to ensure they are compatible with the project's scope and terms of reference.</p> <p>3.3 Interim and final reports are analysed and outcomes are compared to the criteria established at the outset.</p> <p>3.4 Findings are presented to stakeholders.</p>	<p>3.1 Data analysis techniques/procedures</p> <p>3.2 Reporting requirements to a range of audiences</p> <p>3.3 Legislation, policy and procedures relating to the conduct of evaluations</p> <p>3.4 Organisational values, ethics and codes of conduct</p>	<p>3.1 Describing data analysis techniques/procedures</p> <p>3.2 Reporting requirements to a range of audiences</p> <p>3.3 Stating legislation, policy and procedures relating to the conduct of evaluations</p> <p>3.4 Stating organisational values, ethics and codes of conduct practices</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Data analysis techniques	May include: 1.1. Domain analysis 1.2. Content analysis 1.3. Comparison technique

EVIDENCE GUIDE

1. Critical aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Determine data / information 1.2 Studied and applied gathered data/information 1.3 Recorded and studied studied data/information</p> <p>These aspects may be best assessed using a range of scenarios what ifs as a stimulus with a walk through forming part of the response. These assessment activities should include a range of problems, including new, unusual and improbable situations that may have happened.</p>
2. Resource Implications	<p>Specific resources for assessment</p> <p>2.1. Evidence of competent performance should be obtained by observing an individual in an information management role within the workplace or operational or simulated environment.</p>
3. Methods of Assessment	<p>Competency in this unit may be assessed through:</p> <p>3.1. Written Test 3.2. Interview 3.3. Portfolio</p> <p>The unit will be assessed in a holistic manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation. Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual workplace and will include walk through of the relevant competency components.</p>
4. Context for Assessment	<p>4.1. In all workplace, it may be appropriate to assess this unit concurrently with relevant teamwork or operation units.</p>

UNIT OF COMPETENCY : PRACTICE OCCUPATIONAL SAFETY AND HEALTH POLICIES AND PROCEDURES

UNIT CODE : 400311216

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to identify OSH compliance requirements, prepare OSH requirements for compliance, perform tasks in accordance with relevant OSH policies and procedures

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify OSH compliance requirements	1.1 Relevant OSH requirements, regulations, policies and procedures are identified in accordance with workplace policies and procedures 1.2 OSH activity non-conformities are conveyed to appropriate personnel 1.3 OSH preventive and control requirements are identified in accordance with OSH work policies and procedures	1.1. OSH preventive and control requirements 1.2. Hierarchy of Controls 1.3. Hazard Prevention and Control 1.4. General OSH principles 1.5. Work standards and procedures 1.6. Safe handling procedures of tools, equipment and materials 1.7. Standard emergency plan and procedures in the workplace	1.1. Communication skills 1.2. Interpersonal skills 1.3. Critical thinking skills 1.4. Observation skills

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Prepare OSH requirements for compliance	2.1 OSH work activity material, tools and equipment requirements are identified in accordance with workplace policies and procedures 2.2. Required OSH materials, tools and equipment are acquired in accordance with workplace policies and procedures 2.3. Required OSH materials, tools and equipment are arranged/ placed in accordance with OSH work standards	2.1. Resources necessary to execute hierarchy of controls 2.2. General OSH principles 2.3. Work standards and procedures 2.4. Safe handling procedures of tools, equipment and materials 2.5. Different OSH control measures	2.1. Communication skills 2.2. Estimation skills 2.3. Interpersonal skills 2.4. Critical thinking skills 2.5. Observation skills 2.6. Material, tool and equipment identification skills
3. Perform tasks in accordance with relevant OSH policies and procedures	3.1 Relevant OSH work procedures are identified in accordance with workplace policies and procedures 3.2 Work Activities are executed in accordance with OSH work standards 3.3 Non-compliance work activities are reported to <i>appropriate personnel</i>	3.1. OSH work standards 3.2. Industry related work activities 3.3. General OSH principles 3.4. OSH Violations Non-compliance work activities	3.1 Communication skills 3.3 Interpersonal skills 3.4 Troubleshooting skills 3.5 Critical thinking skills 3.6 Observation skills

RANGE OF VARIABLES

VARIABLE	RANGE
1. OSH Requirements, Regulations, Policies and Procedures	May include: <ul style="list-style-type: none"> 1.1 Clean Air Act 1.2 Building code 1.3 National Electrical and Fire Safety Codes 1.4 Waste management statutes and rules 1.5 Permit to Operate 1.6 Philippine Occupational Safety and Health Standards 1.7 Department Order No. 13 (Construction Safety and Health) 1.8 ECC regulations
2. Appropriate Personnel	May include: <ul style="list-style-type: none"> 2.1 Manager 2.2 Safety Officer 2.3 EHS Offices 2.4 Supervisors 2.5 Team Leaders 2.6 Administrators 2.7 Stakeholders 2.8 Government Official 2.9 Key Personnel 2.10 Specialists 2.11 Himself
3. OSH Preventive and Control Requirements	May include: <ul style="list-style-type: none"> 3.1 Resources needed for removing hazard effectively 3.2 Resources needed for substitution or replacement 3.3 Resources needed to establishing engineering controls 3.4 Resources needed for enforcing administrative controls 3.5 Personal Protective equipment
4. Non OSH-Compliance Work Activities	May include non-compliance or observance of the following safety measures: <ul style="list-style-type: none"> 4.1 Violations that may lead to serious physical harm or death 4.2 Fall Protection 4.3 Hazard Communication 4.4 Respiratory Protection 4.5 Power Industrial Trucks 4.6 Lockout/Tag-out 4.7 Working at heights (use of ladder, scaffolding) 4.8 Electrical Wiring Methods 4.9 Machine Guarding 4.10 Electrical General Requirements 4.11 Asbestos work requirements 4.12 Excavations work requirements

EVIDENCE GUIDE

<p>1. Critical aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1. Convey OSH work non-conformities to appropriate personnel 1.2. Identify OSH preventive and control requirements in accordance with OSH work policies and procedures 1.3. Identify OSH work activity material, tools and equipment requirements in accordance with workplace policies and procedures 1.4. Arrange/Place required OSH materials, tools and equipment in accordance with OSH work standards 1.5. Execute work activities in accordance with OSH work standards 1.6. Report OSH activity non-compliance work activities to appropriate personnel
<p>2. Resource Implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Facilities, materials tools and equipment necessary for the activity
<p>3. Methods of Assessment</p>	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Observation/Demonstration with oral questioning 3.2 Third party report
<p>4. Context for Assessment</p>	<ul style="list-style-type: none"> 4.1 Competency may be assessed in the work place or in a simulated work place setting

UNIT OF COMPETENCY : EXERCISE EFFICIENT AND EFFECTIVE SUSTAINABLE PRACTICES IN THE WORKPLACE

UNIT CODE : 400311217

UNIT DESCRIPTOR : This unit covers knowledge, skills and attitude to identify the efficiency and effectiveness of resource utilization, determine causes of inefficiency and/or ineffectiveness of resource utilization and Convey inefficient and ineffective environmental practices

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify the efficiency and effectiveness of resource utilization	1.1 Required resource utilization in the workplace is measured using appropriate techniques 1.2 Data are recorded in accordance with workplace protocol 1.3 Recorded data are compared to determine the efficiency and effectiveness of resource utilization according to established environmental work procedures	1.1. Importance of Environmental Literacy 1.2. Environmental Work Procedures 1.3. Waste Minimization 1.4. Efficient Energy Consumptions	1.1 Recording Skills 1.2 Writing Skills 1.3 Innovation Skills
2. Determine causes of inefficiency and/or ineffectiveness of resource utilization	2.1 Potential causes of inefficiency and/or ineffectiveness are listed 2.2 Causes of inefficiency and/or ineffectiveness are identified through deductive reasoning 2.3 Identified causes of inefficiency	2.1 Causes of environmental inefficiencies and ineffectiveness	2.1 Deductive Reasoning Skills 2.2 Critical thinking 2.3 Problem Solving 2.4 Observation Skills

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	and/or ineffectiveness are validated thru established environmental procedures		
3. Convey inefficient and ineffective environmental practices	3.1 Efficiency and effectiveness of resource utilization are reported to <i>appropriate personnel</i> 3.2 Concerns related resource utilization are discussed with appropriate personnel 3.3 Feedback on information/ concerns raised are clarified with appropriate personnel	3.1 Appropriate Personnel to address the environmental hazards 3.2 Environmental corrective actions	3.1 Written and Oral Communication Skills 3.2 Critical thinking 3.3 Problem Solving 3.4 Observation Skills 3.5 Practice Environmental Awareness

RANGE OF VARIABLES

VARIABLE	RANGE
1. Environmental Work Procedures	May include: 1.1 Utilization of Energy, Water, Fuel Procedures 1.2 Waster Segregation Procedures 1.3 Waste Disposal and Reuse Procedures 1.4 Waste Collection Procedures 1.5 Usage of Hazardous Materials Procedures 1.6 Chemical Application Procedures 1.7 Labeling Procedures
2. Appropriate Personnel	May include: 2.1 Manager 2.2 Safety Officer 2.3 EHS Offices 2.4 Supervisors 2.5 Team Leaders 2.6 Administrators 2.7 Stakeholders 2.8 Government Official 2.9 Key Personnel 2.10 Specialists 2.11 Himself

EVIDENCE GUIDE

<p>1. Critical aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1. Measured required resource utilization in the workplace using appropriate techniques 1.2. Recorded data in accordance with workplace protocol 1.3. Identified causes of inefficiency and/or ineffectiveness through deductive reasoning 1.4. Validate the identified causes of inefficiency and/or ineffectiveness thru established environmental procedures 1.5. Report efficiency and effectiveness of resource utilization to appropriate personnel 1.6. Clarify feedback on information/concerns raised with appropriate personnel
<p>2. Resource Implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Workplace 2.2 Tools, materials and equipment relevant to the tasks 2.3 PPE 2.4 Manuals and references
<p>3. Methods of Assessment</p>	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Demonstration 3.2 Oral questioning 3.3 Written examination
<p>4. Context for Assessment</p>	<ul style="list-style-type: none"> 4.1 Competency assessment may occur in workplace or any appropriately simulated environment 4.2 Assessment shall be observed while task are being undertaken whether individually or in-group

UNIT OF COMPETENCY : PRACTICE ENTREPRENEURIAL SKILLS IN THE WORKPLACE

UNIT CODE : 400311218

UNIT DESCRIPTOR : This unit covers the outcomes required to apply entrepreneurial workplace best practices and implement cost-effective operations

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Apply entrepreneurial workplace best practices	1.1 Good practices relating to workplace operations are observed and selected following workplace policy. 1.2 Quality procedures and practices are complied with according to workplace requirements. 1.3 Cost-conscious habits in resource utilization are applied based on industry standards.	1.1 Workplace best practices, policies and criteria 1.2 Resource utilization 1.3 Ways in fostering entrepreneurial attitudes: <ul style="list-style-type: none"> • Patience • Honesty • Quality-consciousness • Safety-consciousness • Resourcefulness 	1.1 Communication skills 1.2 Complying with quality procedures
2. Communicate entrepreneurial workplace best practices	2.1 Observed good practices relating to workplace operations are communicated to appropriate person . 2.2 Observed quality procedures and practices are communicated to appropriate person 2.3 Cost-conscious habits in resource utilization are communicated based on industry standards.	2.1 Workplace best practices, policies and criteria 2.2 Resource utilization 2.3 Ways in fostering entrepreneurial attitudes: <ul style="list-style-type: none"> • Patience • Honesty • Quality-consciousness • Safety-consciousness • Resourcefulness 	2.1 Communication skills 2.2 Complying with quality procedures 2.3 Following workplace communication protocol

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Implement cost-effective operations	3.1 Preservation and optimization of workplace resources is implemented in accordance with enterprise policy 3.2 Judicious use of workplace tools, equipment and materials are observed according to manual and work requirements. 3.3 Constructive contributions to office operations are made according to enterprise requirements. 3.4 Ability to work within one's allotted time and finances is sustained.	3.1 Optimization of workplace resources 3.2 5S procedures and concepts 3.3 Criteria for cost-effectiveness 3.4 Workplace productivity 3.5 Impact of entrepreneurial mindset to workplace productivity 3.6 Ways in fostering entrepreneurial attitudes: <ul style="list-style-type: none"> • Quality-consciousness • Safety-consciousness 	3.1 Implementing preservation and optimizing workplace resources 3.2 Observing judicious use of workplace tools, equipment and materials 3.3 Making constructive contributions to office operations 3.4 Sustaining ability to work within allotted time and finances

RANGE OF VARIABLES

VARIABLE	RANGE
1.Good practices	May include: 1.1 Economy in use of resources 1.2 Documentation of quality practices
2.Resources utilization	May include: 2.1 Consumption/ use of consumables 2.2 Use/Maintenance of assigned equipment and furniture 2.3 Optimum use of allotted /available time

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Demonstrated ability to identify and sustain cost-effective activities in the workplace</p> <p>1.2 Demonstrated ability to practice entrepreneurial knowledge, skills and attitudes in the workplace.</p>
<p>2. Resource Implications</p>	<p>The following resources should be provided:</p> <p>2.1 Simulated or actual workplace</p> <p>2.2 Tools, materials and supplies needed to demonstrate the required tasks</p> <p>2.3 References and manuals</p> <p>2.3.1 Enterprise procedures manuals</p> <p>2.3.2 Company quality policy</p>
<p>3. Methods of Assessment</p>	<p>Competency in this unit should be assessed through:</p> <p>3.1 Interview</p> <p>3.2 Third-party report</p>
<p>4. Context of Assessment</p>	<p>4.1 Competency may be assessed in workplace or in a simulated workplace setting</p> <p>4.2 Assessment shall be observed while tasks are being undertaken whether individually or in-group</p>

COMMON COMPETENCIES

UNIT OF COMPETENCY : **PREPARE CONSTRUCTION MATERIALS AND TOOLS**

UNIT CODE : **CON931201**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes on identifying, requesting and receiving construction materials and tools in various workplace settings.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variable	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify materials	1.1 Materials are identified as per job requirements 1.2 Quantity and <i>description of materials and tools</i> conform with the job requirements 1.3 Tools and accessories are identified according to job requirements	1.1 Different work specifications 1.2 Types and uses of Masonry tools and accessories	1.1 Identifying tools and accessories according to the job requirements
2. Prepare requisition of materials	2.1 <i>Materials and tools</i> needed are requested according to the identified requirements 2.2 Request is done as per <i>company standard operating procedures (SOP)</i> 2.3 Substitute materials and tools are provided without sacrificing cost and quality of work	2.1 Work requirements 2.2 Types and uses of Masonry tools and accessories 2.3 Material take-off 2.4 Requisition procedures	2.1 Preparing material take-off 2.2 Requesting materials and tools
3. Receive and inspect materials	3.1 Materials and tools issued are inspected as per quantity and specification 3.2 Tools, accessories and materials are checked 3.3 Materials and tools are set aside to appropriate location	3.1 Policy on receiving material deliveries 3.2 Material and tools quality and defects 3.3 Material handling	3.1 Checking and inspecting materials and tools 3.2 Storing/ stacking of tool and materials

RANGE OF VARIABLES

VARIABLE	RANGE
1. Description of materials and tools	May include: 1.1 Brand name 1.2 Size 1.3 Capacity 1.4 Kind of application
2. Tools and accessories	May include: 2.1 Electrical supplies 2.2 Mechanical supplies 2.3 Cleaning supplies
3. Company standard operating procedures	May include: 3.1 Job order 3.2 Requisition slip 3.3 Borrower slip

EVIDENCE GUIDE

1. Critical aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Listed materials and tools according to quantity and job requirements 1.2 Requested materials and tools according to the list prepared and as per company SOP 1.3 Inspected issued materials and tools as per quantity and job specifications 1.4 Provided tools with safety devices
2. Resource Implications	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Workplace location 2.2 Materials relevant to the unit of competency 2.3 Plans, drawings and specifications relevant to the activities
3. Methods of Assessment	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Direct observation/Demonstration with oral questioning
4. Context of Assessment	<ul style="list-style-type: none"> 4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center

UNIT OF COMPETENCY : **OBSERVE PROCEDURES, SPECIFICATIONS AND MANUALS OF INSTRUCTIONS**

UNIT CODE : **CON311201**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes on identifying, interpreting, applying services to specifications and manuals and storing manuals.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify and access specification/ manuals	1.1 Appropriate manuals are identified and accessed as per job requirements 1.2 Version and date of manual are checked to ensure that correct specification and procedures are identified	1.1 Types of manuals used in Masonry 1.2 Identification of symbols used in the manuals	1.1 Identifying manuals and specifications 1.2 Accessing information and data
2. Interpret manuals	2.1 Relevant sections, chapters of specifications/ manuals are located in relation to the work to be conducted 2.2 Information and procedure in the manual are interpreted in accordance with industry practices	2.1 Types of manuals used in Masonry 2.2 Types of symbols used in manuals 2.3 System of measurements 2.4 Unit conversion	2.1 Interpreting symbols and specifications 2.2 Accessing information and data 2.3 Applying conversion of units of measurements

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Apply information in manual	3.1 <i>Manual</i> is interpreted according to job requirements 3.2 Work steps are correctly identified in accordance with manufacturer's specification 3.3 Manual data are applied according to the given task 3.4 All correct sequencing and adjustments are interpreted in accordance with information contained on the manual or specifications	3.1 Types of manuals used in Masonry 3.2 Types and application of symbols in manuals 3.3 Unit conversion	3.1 Applying information from manuals
4. Store manuals	4.1 Manual or specification is stored appropriately to prevent damage, ready access and updating of information when required in accordance with company requirements	4.1 Types of manuals used in Masonry 4.2 Manual storing and maintaining procedures	4.1 Storing and maintaining manuals

RANGE OF VARIABLES

VARIABLE	RANGE
1. Manual	May include: 1.1 Manufacturer's Specification Manual 1.2 Maintenance Procedure Manual 1.3 Periodic Maintenance Manual

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires that the candidate: 1.1 Identified and accessed specification/manuals as per job requirements 1.2 Interpreted manuals in accordance with industry practices 1.3 Applied information in manuals according to the given task 1.4 Stored manuals in accordance with company requirements
2. Resource implications	The following resources should be provided: 2.1 All manuals/catalogues relative to construction sector
3. Methods of assessment	Competency in this unit may be assessed through: 3.1 Direct observation/Demonstration with Oral Questioning
4. Context of assessment	4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center

UNIT OF COMPETENCY : **PERFORM MENSURATIONS AND CALCULATIONS**

UNIT CODE : **CON311203**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes on identifying and measuring objects based on the required performance standards.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variable	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Select measuring instruments	1.1 Object or component to be measured is identified, classified and interpreted according to the appropriate regular <i>geometric shape</i> 1.2 Measuring tools are selected/identified as per object to be measured or job requirements 1.3 Correct specifications are obtained from relevant sources 1.4 Measuring instruments are selected according to job requirements 1.5 Alternative measuring tools are used without sacrificing cost and quality of work	1.1 Types of measuring tools and its uses	1.1 Selecting measuring instruments

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms are elaborated in the Range of Variable</i>	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Carry out measurements and calculations	2.1 Measurements are obtained according to job requirements 2.2 Alternative measuring tools are used without sacrificing cost and quality of work 2.3 Calculations needed to complete work tasks are performed using the four basic process of addition (+), subtraction (-), multiplication (x) and division (/) 2.4 Calculations involving fractions, percentages and mixed numbers are used to complete workplace tasks 2.5 Numerical computation is self-checked and corrected for accuracy 2.6 Instruments are read to the limit of accuracy of the tool 2.7 Systems of measurement identified and converted according to job requirements/ISO 2.8 Workpieces are measured according to job requirements	2.1 Linear measurement 2.2 Geometrical measurement 2.3 Unit conversion 2.4 Ratio and proportion 2.5 Area	2.1 Interpreting formulas for volume, areas, perimeters of plane and geometric figures 2.2 Handling of measuring instruments

RANGE OF VARIABLES

VARIABLE	RANGE
1. Geometric shape	May include: 1.1 Round 1.2 Square 1.3 Rectangular 1.4 Triangle 1.5 Sphere 1.6 Conical
2. Measuring instruments	May include: 2.1 Micrometer (In-out, depth) 2.2 Vernier caliper (out, inside) 2.3 Thickness gauge 2.4 Torque gauge 2.5 Small hole gauge 2.6 Try-square 2.7 Protractor 2.8 Steel ruler 2.9 Voltmeter 2.10 Ammeter 2.11 Gauges 2.12 Thermometers
3. Measurements and calculations	May include: 3.1 Linear 3.2 Volume 3.3 Area 3.4 Wattage 3.5 Voltage 3.6 Amperage 3.7 Inside diameter 3.8 Length 3.9 Thickness 3.10 Outside diameter 3.11 Density

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires that the candidate: 1.1 Selected and prepared appropriate measuring instruments in accordance with job requirements 1.2 Performed measurements and calculations according to job requirements/ ISO
2. Resource implications	The following resources should be provided: 2.1 Workplace location 2.2 Problems to solve 2.3 Measuring instrument appropriate to carry out tasks 2.4 Instructional materials relevant to the propose activity
3. Methods of assessment	Competency in this unit may be assessed through: 3.1 Direct observation/Demonstration with Oral Questioning
4. Context of assessment	4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center

UNIT OF COMPETENCY : **MAINTAIN TOOLS AND EQUIPMENT**

UNIT CODE : **CON311204**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes on checking condition, performing preventive maintenance and storing of construction painting tools and equipment.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Check condition of tools and equipment	1.1 Materials, tools and equipment are identified according to classification and job requirements 1.2 Non-functional tools and equipment are segregated and labeled according to classification 1.3 Safety of tools and equipment are observed in accordance with manufacturer's instructions 1.4 Condition of Personal Protective Equipment (PPE) are checked in accordance with manufacturer's instructions	1.1 Use of PPE 1.2 Handling of tools and equipment 1.3 Good housekeeping 1.4 Types and uses of lubricants 1.5 Types and uses of cleaning materials	1.1 Maintaining tools and equipment 1.2 Handling of tools and equipment 1.3 Identifying tools and equipment defects

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Perform basic preventive maintenance	2.1 Appropriate lubricants are identified according to types of equipment 2.2 Tools and equipment are lubricated according to preventive maintenance schedule or manufacturer's specifications 2.3 Measuring instruments are checked and calibrated in accordance with manufacturer's instructions 2.4 Tools are cleaned and lubricated according to standard procedures 2.5 Defective instruments, equipment and accessories are inspected and replaced according to manufacturer's specifications 2.6 Tools are inspected, repaired and replaced after use 2.7 Work place is cleaned and kept in safe state in line with Occupational Safety and Health (OSHS)	2.1 Use of PPE 2.2 Handling of tools and equipment 2.3 Good housekeeping 2.4 Types and uses of lubricants 2.5 Types and uses of cleaning materials 2.6 Methods and techniques 2.7 Procedures	2.1 Handling of tools and equipment 2.2 Performing preventive maintenance

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Store tools and equipment	3.1 Inventory of tools, instruments and equipment are conducted and recorded as per company practices 3.2 Tools and equipment are stored safely in appropriate locations in accordance with manufacturer's specifications or company procedures	3.1 Use of PPE 3.2 Handling of tools and equipment 3.3 Storing procedures and techniques 3.4 Storage conditions/ locations	3.1 Storing tools and equipment 3.2 Handling of tools and equipment

RANGE OF VARIABLES

VARIABLE	RANGE
1. Materials	May include: 1.1 Lubricants 1.2 Cleaning materials 1.3 Rust remover 1.4 Rugs 1.5 Spare parts
2. Tools and equipment	May include: 2.1 Tools Cutting tools - hacksaw, crosscut saw Boring tools - brace, hand drill Holding tools - vise grip, C-clamp, bench vise Threading tools - die and stock, taps 2.2 Measuring instruments/equipment
3. Personal Protective Equipment (PPE)	May include: 3.1 Goggles 3.2 Gloves 3.3 Safety shoes 3.4 Hard hat 3.5 Reflectorized Vest

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires that the candidate:</p> <ul style="list-style-type: none"> 1.1 Selected and used appropriate processes, tools and equipment to carry out task 1.2 Identified functional and non-functional tools and equipment 1.3 Checked, lubricated and calibrated tools, equipment and instruments according to manufacturer's specifications 1.4 Replaced defective tools, equipment and their accessories 1.5 Observed and applied safe handling of tools and equipment and safety work practices 1.6 Prepared and submitted inventory report, where applicable 1.7 Maintained workplace in accordance with OSHA regulations 1.8 Stored tools and equipment safely in appropriate locations and in accordance with company practices
<p>2. Resource implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Workplace 2.2 Maintenance schedule 2.3 Maintenance materials, tools and equipment relevant to the proposed activity/task
<p>3. Methods of assessment</p>	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Direct observation/Demonstration with Oral Questioning 3.2 Written Examination
<p>4. Context of assessment</p>	<p>4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center.</p>

CORE COMPETENCIES

UNIT OF COMPETENCY : **OBSERVE ELEVATOR INSTALLATION SAFETY REQUIREMENTS**

UNIT CODE : CONXXXXXX

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required in observing elevator installation safety requirements.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms are elaborated in the Range of Variables</i>	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Use safety equipment to avoid falling from height	1.1 Full body harness is worn when working from the car roof/ top or working platform according to installation safety procedures. 1.2 Ladder is used to access the elevator pit according to job requirement 1.3 Full body harness is used when working in the pit higher than 2 meters. 1.4 Hazards and consequences are addressed by wearing personal protective equipment (PPE) . 1.5 Safety precautions are observed at all times during installation	1.1 Types and purposes of Personal Protective Equipment (PPE) 1.2 Types of hazards and consequences. 1.3 Occupational safety and health 1.4 Uses of ladder	1.1 Selecting Personal Protective Equipment (PPE) 1.2 Determining techniques for effective use of Personal Protective Equipment (PPE) 1.3 Using ladder
2. Use safety equipment to avoid falling objects	2.1 Hard hat is worn at all times during installation 2.2 Fall protections are installed on hoistway openings according to installation safety procedures. 2.3 Safety precautions are observed at all times	2.1 Types and purposes of Personal Protective Equipment (PPE) 2.2 Types and usage of fall protections 2.3 Safe installation procedures of fall protection	2.1 Selecting Personal Protective Equipment (PPE) 2.2 Techniques in installing fall protection devices

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms are elaborated in the Range of Variables</i>	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	<p>during installation</p> <p>2.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE).</p>	<p>devices</p> <p>2.4 OSH</p>	
<p>3 Use safety equipment to protect from sharp edges, contusions and timber packages</p>	<p>3.1 Protective gloves, safety shoes and protective clothing are worn at all times during installation</p> <p>3.2 Safety precautions are observed at all times during installation</p> <p>3.3 Jobsite and pit are cleared of debris, sharp materials and obstructions</p>	<p>3.1 Types and purposes of Personal Protective Equipment (PPE)</p> <p>3.2 Types of hazards and consequences.</p> <p>3.3 Occupational safety and health</p> <p>3.4 5s and 3Rs</p>	<p>3.1 Selecting Personal Protective Equipment (PPE)</p> <p>3.2 Determining techniques for effective use of Personal Protective Equipment (PPE)</p> <p>3.3 Practicing of 5S and 3Rs</p>
<p>4. Observe electrical safety precautions to prevent electrocution</p>	<p>4.1 Power supply is protected according to local safety rules</p> <p>4.2 Lockout and tag is performed according to job requirements</p> <p>4.3 Plans and drawings are interpreted according to job requirements</p> <p>4.4 Electrical works are coordinated with project electrical engineer/technician</p> <p>4.5 Safety precautions are observed at all times during installation</p> <p>4.6 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)</p>	<p>4.1 Types and purposes of Personal Protective Equipment (PPE)</p> <p>4.2 Basic principles of electricity</p> <p>4.3 Lockout and tag procedures</p> <p>4.4 Understanding plans and drawings</p> <p>4.5 Occupational safety and health</p> <p>4.6 OSH</p>	<p>4.1 Interpreting plans and drawings</p> <p>4.2 Applying basic principles of electricity</p> <p>4.3 Applying lockout and tagging</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Hazards and consequences	May include: 1.1 Serious injury or fatality 1.2 Lacerations, crushing, splinters 1.3 Abrasions and sprains 1.4 Eye injury, hand or wrist damages 1.5 Inhalation of particles 1.6 Electrocutation 1.7 Hearing damage
2. Personal Protective Equipment (PPE)	May include: 2.1 Hardhat 2.2 Safety goggles 2.3 Full body safety harness 2.4 Safety shoes 2.5 Safety gloves
3. Safety precautions	May include: 3.1 Avoid standing under a hanging load 3.2 Never work on two levels simultaneously
4. Fall protections	May include: 4.1 Safety nets 4.2 Barricades 4.3 Signages

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Wore full body harness when working from the car roof or working platform according to installation safety procedures.</p> <p>1.2 Used ladder to access the elevator pit</p> <p>1.3 Wore hard hat at all times during installation</p> <p>1.4 Installed fall protections on hoistway openings according to installation safety procedures.</p> <p>1.5 Observed safety measures applicable to worksite operation</p> <p>1.6 Communicated effectively with others to ensure effective work operation</p> <p>1.7 Complied with attitudinal work requirements</p>
<p>2. Resource implications</p>	<p>The following resources should be provided:</p> <p>2.1 Tools, equipment and facilities</p> <p>2.1 Materials (e.g., safety net, barricades, signages)</p> <p>2.3 Appropriate PPE</p>
<p>3. Method of assessment</p>	<p>Competency in this unit may be assessed through:</p> <p>3.1 Direct observation/demonstration with oral questioning</p> <p>3.2 Written test</p>
<p>4. Context for assessment</p>	<p>4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center</p>

UNIT OF COMPETENCY : **CHECK SITE REQUIREMENTS, EQUIPMENT AND TOOLS**

UNIT CODE : CONXXXXXX

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to check site requirements, equipment and tools.

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Inspect elevator hoistway, machine room and pit	1.1 Elevator hoistway, machine room and pit are inspected according to drawing specifications 1.2 <i>Measuring tools</i> used is correct and appropriate to the required measurement. 1.3 All <i>measurements</i> obtained are accurate and conforms to given metrics and <i>tolerances</i> . 1.4 Final floor levels, pre-formed holes and building axes are clearly marked. 1.5 Bottom pit and all construction spots are cleared of obstruction and debris. 1.6 The machine room is well illuminated and elevator lighting is independently powered. 1.7 Safety precautions are observed at all times during inspection 1.8 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	1.1 Building construction layout and elevator installation drawings. 1.2 Type and usage of measuring tools and instruments. 1.3 Different units of measurement and its tolerances 1.4 Finish floor levels, pre-formed holes and building reference lines. 1.5 5S and 3Rs 1.6 Procedures in inspecting elevator hoistway, machine room and pit 1.7 OSH 1.8 PPE	1.1 Selecting measuring tools 1.2 Obtaining accurate measurements 1.3 Determining and applying measuring techniques 1.4 Identifying floor levels, pre-formed holes and building axes. 1.5 Practicing of 5S and 3Rs 1.6 Applying procedures in inspecting elevator hoistway, machine room and pit

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Inspect lifting points for sufficient load and capacity	2.1 <i>Lifting points</i> position are checked based on elevator drawings 2.2 Lifting points load and capacity are checked based on elevator drawings and specifications. 2.3 Lifting points variant are identified 2.4 Plans and drawings are interpreted according to job requirements 2.5 Safety precautions are observed at all times during inspection 2.6 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE).	2.1 Building construction layout and elevator installation drawings. 2.2 Understanding of lifting point variants. 2.3 Procedures in Inspecting lifting points for sufficient load and capacity 2.4 OSH 2.5 PPE	2.1 Interpreting plans and drawings. 2.2 Inspecting lifting points for sufficient load and capacity
3. Inspect power supply	3.1 The power supply is checked based on elevator specification and local electrical codes and regulation. 3.2 Adequate power supply for <i>Installation tools and equipment</i> are used according to job requirements 3.3 Safety precautions are observed at all times during inspection 3.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE).	3.1 Building construction layout and elevator installation drawings. 3.2 Basic principles of electricity 3.3 Hazards related to electrical wires and cables 3.4 OSH 3.5 PPE 3.6 Procedures in inspecting power supply and installed equipment	3.1 Interpreting electrical plans and drawings 3.2 Applying principles of electricity 3.3 Applying procedures in inspecting power supply and installed equipment
4. Inspect number of pallets according to the bill of delivery	4.1 Number of pallets is checked based on bill of delivery 4.2 Packing list is retained for each packages 4.3 Packages are checked for completeness and	4.1 Building construction layout and elevator installation drawings. 4.2 Elevator parts	4.1 Reading of bill of delivery 4.2 Sorting of elevator parts and components. 4.3 Applying procedures in

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	<p>any damages</p> <p>4.4 Elevator parts and components are identified</p> <p>4.5 Safety precautions are observed at all times during installation</p> <p>4.6 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)</p>	<p>and components</p> <p>4.3 Bill of delivery</p> <p>4.4 Sorting parts and Components</p> <p>4.5 Procedures in inspecting the number of pallets</p>	<p>inspecting the number of pallets according to the bill of delivery</p>
<p>5. Unload, unpack and count elevator parts & components and auxiliary materials</p>	<p>5.1 <i>Elevator parts & components</i> and auxiliary materials are unloaded in accordance with elevator packing list and technical documents.</p> <p>5.2 Elevator parts & components and auxiliary materials are unpacked and counted in accordance with elevator packing list and technical documents.</p> <p>5.3 Safety precautions are observed at all times during unloading and unpacking</p> <p>5.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)</p>	<p>5.1 Elevator parts & components and auxiliary materials</p> <p>5.2 OSH</p> <p>5.3 PPE</p> <p>5.4 5S and 3Rs</p> <p>5.5 Procedures in unloading and unpacking</p>	<p>5.1 Interpreting bill of delivery or packing list</p> <p>5.2 Sorting of elevator parts and components.</p> <p>5.3 Practice of 5S and 3Rs</p>
<p>6. Transport and stack elevator equipment</p>	<p>6.1 <i>Machine room parts and components</i> are carried to the machine room or the top floor</p> <p>6.2 <i>Car component and parts</i> are carried to the top floor</p> <p>6.3 <i>Pit equipment and components</i> are carried to the bottom floor.</p>	<p>6.1 Familiarization of machine room components</p> <p>6.2 Familiarization of the car frame and car components.</p> <p>6.3 Familiarization of pit equipment and components</p> <p>6.4 Familiarization of entrance</p>	<p>6.1 Techniques in transporting and stacking elevator equipment</p>

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	<p>6.4 <i>Entrance components</i> are carried to the corresponding floors or intermediate rooms according to the on-site condition.</p> <p>6.5 <i>Easily deformable and pliable components</i> are laid flat and cushioned.</p> <p>6.6 <i>Electrical and vulnerable components</i> are stored and managed in accordance with their technical specifications.</p> <p>6.7 Safety precautions are observed at all times during transport and stacking</p> <p>6.8 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)</p>	<p>components</p> <p>6.5 OSH</p> <p>6.6 PPE</p> <p>6.7 Procedures in transporting and stacking elevator equipment</p>	

RANGE OF VARIABLES

VARIABLE	RANGE
1. Measuring tools	May include: 1.1 Angle rulers 1.2 Steel measuring tapes (3 or 5 meters) 1.3 Steel rulers (300 mm and 1000 mm) 1.4 Marking gauge 1.5 Test pencils 1.6 Vernier caliper 1.7 Snap gauge 1.8 Plumb bob (10~15 kgs) 1.9 Magnetic plumb 1.10 Feeler gauge
2. Measurements	May include: 2.1 Metric unit of length (meter) 2.2 Metric unit of mass (kgs.)
3. Tolerances	May include: 3.1 0~+25mm when hoistway height $\leq 30m$ 3.2 0~+35mm when hoistway height $\leq 60m$ 3.3 0~+50mm when hoistway height $\leq 90m$
4. Lifting points	May include: 4.1 H Beams 4.2 Anchor rails 4.3 Hooks
5. Installation tools and equipment	May include: 5.1 Welding machine 5.2 Tirak/Hoist 5.3 Electric drill 5.4 Electric grinder 5.5 Electric hammer
6. Elevator parts & components	May include: 6.1 Rails 6.2 Counter weights 6.3 Car cage 6.4 Traction machine 6.5 Safety gear
7. Machine room parts and components	May include: 7.1 Hoisting machine unit 7.2 Speed governor 7.3 Control cabinet 7.4 Machine supporting beam 7.5 Bed frame (base plate)
8. Car component and parts	May include: 8.1 Car frame 8.2 Car

VARIABLE	RANGE
9. Pit equipment and components	May include: 9.1 Guide rails, 9.2 Guide rail base plate 9.3 Counterweight guard 9.4 Ladder 9.5 Counterweight assembly 9.6 Counterweight 9.7 Buffer 9.8 Tensioning sheave
10. Entrance components	May include: 10.1 Landing doors 10.2 Door jambs 10.3 Sills
11. Easily deformable and pliable components	May include: 11.1 Diffuser 11.2 Hall doors and car door panels
12. Electrical and vulnerable components	May include: 12.1 Printed circuit boards 12.2 Signal fixtures 12.3 Encoders 12.4 Proximity sensors

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Inspected elevator hoistway, machine room and pit according to drawing specifications 1.2 Obtained accurate measurements conforming to given metrics and tolerances and established installation guidelines 1.3 Used correct measuring tools 1.4 Clearly marked final floor levels, pre-formed holes and building axes 1.5 Identified elevator parts & components 1.6 Observed safety measures applicable to worksite operation 1.7 Communicated effectively with others to ensure effective work operation 1.8 Complied with attitudinal work requirements
<p>2. Resource implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Tools, equipment and facilities 2.2 Consumable materials 2.3 Charts and tables
<p>3. Method of assessment</p>	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Written Examination 3.2 Direct observation 3.3 Demonstration with Oral Questioning
<p>4. Context for assessment</p>	<p>4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center.</p>

UNIT OF COMPETENCY : PREPARE SCAFFOLDS, TEMPLATE HOLDERS AND PLUMB LINES

UNIT CODE : CONXXXXXX

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to prepare scaffolds, template holders and plumb lines.

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Clear the hoistway	1.1 Hoistway pit is freed of debris and extraneous matter. 1.2 Hoistway entrances are freed of any obstacle that may hinder installation 1.3 Safety precautions are observed at all times during transport and stacking 1.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	1.1 OSH 1.2 PPE 1.3 Procedures in clearing the hoistway	1.1 Applying procedures in clearing the hoistway
2. Erect the scaffolds	2.1 Scaffolds are erected based on the types of <i>elevator layout</i> . 2.2 Tools and equipment are used according to job requirements 2.3 Erected scaffolds does not interfere with the installation positions of the guide rails and guide rail supports. 2.4 Set lines and access to other elevator parts are circumvented. 2.5 Erected scaffolds are easy for personnel to climb. 2.6 Bearing pressure of scaffolds are tested to	2.1 OSH and other relevant regulatory requirements in erecting scaffolds 2.2 PPE 2.3 Types of scaffold 2.4 Bearing pressure of scaffold 2.5 Different types of tools and equipment 2.6 Procedures in erecting scaffolds 2.7 DO 128-13, series 2013 Amending Rule 1414 on Scaffolding	2.1 Following OSH and other relevant regulatory requirements for erecting scaffolding 2.2 Applying emergency preparedness and response 2.3 Applying productive methods and techniques in erecting scaffolding 2.4 Testing of scaffold component 's connections 2.5 Applying basic

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	be greater than 250 kg/m ² . 2.7 Safety precautions are observed at all times during transport and stacking 2.8 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	2.8 Site condition 2.9 Base to height ratio 2.10 Types and uses of scaffolding 2.11 Types and uses of scaffold hand tools	mensuration 2.6 Using and maintaining tools 2.7 Implementing 3R and 5S
3. Fabricate and erect template holders	3.1 Template holders are fabricated comply with relevant standards 3.2 Upper and lower template holder is conformed with the type of elevator framework. 3.3 Template holders are erected based on elevator construction layout drawing. 3.4 Tools and equipment are used according to job requirements 3.5 Safety precautions are observed at all times during transport and stacking 3.6 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE).	3.1 OSH 3.2 PPE 3.3 Procedures in fabricating and erecting template holders 3.4 5S and 3Rs 3.5 Different types of tools and equipment	3.1 Applying procedures in fabricating and erecting template holders 3.2 Practicing 5S and 3Rs 3.3 Using tools and equipment
4. Hang plumb lines	4.1 Plumbing table is completed based on job requirements 4.2 Pit dimensions are measured and conformed to the elevator layout drawing 4.3 Plumb lines are measured and secured. 4.4 Tools are used according to job	4.1 OSH 4.2 PPE 4.3 Procedures in hanging plumb lines 4.4 Basic Mensuration 4.5 Different types of tools and equipment	4.1 Applying procedures in hanging plumb lines 4.2 Using tools

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	requirements 4.5 Safety precautions are observed at all times during transport and stacking 4.6 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)		

RANGE OF VARIABLES

VARIABLE	RANGE
1. Elevator layout	May include: 1.1 Post-posed counterweight (counterweight is behind of elevator cabin) 1.2 Lateral-posed counterweight (counterweight is at the side of elevator cabin) 1.3 Machine-room-less
2. Template holders	May include: 2.1 Wood 2.2 Profiled steel

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Cleared the hoistway 1.2 Erected scaffolds 1.3 Fabricated and erected template holders 1.4 Hanged plumb lines 1.5 Observed safety measures applicable to worksite operation 1.6 Communicated effectively with others to ensure effective work operation 1.7 Complied with attitudinal work requirements
<p>2. Resource implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Tools, equipment and facilities 2.2 Consumable materials 2.3 Charts and tables
<p>3. Method of assessment</p>	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Direct observation 3.2 Demonstration with Oral Questioning
<p>4. Context for assessment</p>	<p>4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center</p>

UNIT OF COMPETENCY : INSTALL GUIDE RAIL AND MACHINE BEAMS

UNIT CODE : CONXXXXXX

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to install guide rail and machine beams.

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Fix guide rail bracket	1.1 Guide rail bracket and the <i>type of hoist way construction</i> are check in accordance with the layout drawing. 1.2 Guide rail bracket is installed according to the layout drawing in the contract and field layout dimension 1.3 <i>Tools and equipment</i> are used according to job requirements 1.4 Safety precautions are observed at all times during installation 1.5 <i>Hazards</i> and consequences are addressed by wearing Personal Protective Equipment (PPE)	1.1 Procedures in installing guide rail bracket 1.2 OSH 1.3 PPE 1.4 5S and 3Rs 1.5 Mensuration 1.6 Different types of tools and equipment 1.7 Basic Welding	1.1 Applying procedures in installing guide rail bracket 1.2 Practicing 5S and 3Rs 1.3 Using tools and Equipment 1.4 Applying basic welding
2 Adjust guide rail bracket	2.1 Guide rails are verticality calibrated and fixed according to manufacturer standards. 2.2 Tools and equipment are used according to job requirements 2.3 Safety precautions are observed at all times during adjustment 2.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	2.1 Procedures in adjusting guide rail bracket 2.2 OSH 2.3 PPE 2.4 Jointing process 2.5 Different types of tools and equipment 2.6 Mensuration	2.1 Applying procedures in adjusting guide rail bracket 2.2 Applying jointing process 2.3 Using tools and equipment

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3 Fix guide rail	3.1 Car and counterweight guide rails are inspected 3.2 Car and counterweight guide rails joints are checked and cleaned 3.3 Car and counterweight guide rails joints in an array are arranged 3.4 Car and counterweight guide rails joints are protected 3.5 Guide rail is hoisted and installed according to the Manufacturer's standards. 3.6 Tools and equipment are used according to job requirements 3.7 Safety precautions are observed at all times during adjustment 3.8 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	3.1 Procedures in installing guide rail 3.2 OSH 3.3 PPE 3.4 Mensuration 3.5 Different types of tools and equipment	3.1 Applying procedures in installing guide rail 3.2 Using tools and equipment 3.3 Using tools and equipment
4 Fix machine beams	4.1 Elevator machine beams is installed according to manufacturer's layout and specifications 4.2 Tools and equipment are used according to job requirements 4.3 Safety precautions are observed at all times during adjustment 4.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	4.1 Procedures in installing machine beams 4.2 OSH 4.3 PPE 4.4 Mensuration 4.5 Different types of tools and equipment 4.5 Basic welding	4.1 Applying procedures in installing machine beams 4.2 Using tools and Equipment 4.3 Applying basic welding

RANGE OF VARIABLES

VARIABLE	RANGE
1. Type of hoistway construction	May include: 1.1 Reinforce concrete 1.2 Steel structure 1.3
2. Tools and equipment	May include: 2.1 Winch 2.2 Tirac 2.3 Chain block 2.4 Pull lift 2.5 Scaffolds 2.6 Welding machine 2.7 Torque wrench 2.8 Rail aligner
3. Hazards	May include: 3.1 Electric shock 3.2 Being struck by the elevator or counterweight 3.3 Getting caught in the door or other moving parts 3.4 Falling from the elevator car 3.5 Asphyxiation while trapped in the elevator 3.6 Falling into the elevator shaft

EVIDENCE GUIDE

1. Critical aspects of competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Fixed guide rail bracket 1.2 Adjusted guide rail bracket 1.3 Fixed guide rail 1.4 Fixed machine beams 1.5 Observed safety measures applicable to worksite operation 1.6 Communicated effectively with others to ensure effective work operation 1.7 Complied with attitudinal work requirements
2. Resource implications	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Tools, equipment and facilities 2.2 Consumable materials 2.3 Charts and tables
3. Method of assessment	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Direct observation 3.2 Demonstration with Oral Questioning
4. Context for assessment	<ul style="list-style-type: none"> 4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center

UNIT OF COMPETENCY : INSTALL CONTROL PANEL AND MACHINE

UNIT CODE : CONXXXXXX

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to install control panel and machine.

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Fix elevator machine	1.1 Elevator machine is installed based on manufacturer's layout drawing and specification 1.2 Tools and equipment are used according to job requirements 1.3 Safety precautions are observed at all times during mounting of elevator machine 1.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	1.1 Procedures in installing elevator machine 1.2 OSH 1.3 PPE 1.4 Mensuration 1.5 Different types of tools and equipment	1.1 Applying procedures in installing elevator machine 1.2 Using tools and equipment
2. Fix deflective and diversion sheave (with machine room)	2.1 Deflective and diversion sheave is installed based on manufacturer's standard 2.2 Tools and equipment are used according to job requirements 2.3 Safety precautions are observed at all times during mounting of deflective sheave 2.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	2.1 Procedures in installing deflective and diversion sheave 2.2 OSH 2.3 PPE 2.3 Mensuration 2.4 Different types of tools and equipment	2.1 Applying procedures in installing deflective and diversion sheave 2.2 Using tools and equipment

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Set machine and controls	3.1 Machine is installed and aligned based on manufacturer's standard specification 3.2 Controllers and transformers are set according to manufacturer's specification 3.3 Tools and equipment are used according to job requirements 3.4 Safety precautions are observed at all times during setting of machine and controls 3.5 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	3.1 Procedures in setting machine and controls 3.2 OSHS 3.3 PPE 3.4 Mensuration 3.5 Different types of tools and equipment	3.1 Applying procedures in setting machine and controls 3.2 Using tools and equipment
4. Set governor	4.1 Governor assembly is installed based on manufacturer's standard 4.2 Tools and equipment are used according to job requirements 4.3 Safety precautions are observed at all times during mounting of elevator machine 4.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	4.1 Procedures in setting governor 4.2 OSH 4.3 PPE 4.4 Mensuration 4.5 Different types of tools and equipment	4.1 Applying procedures in setting governor 4.2 Using tools and equipment
5. Pipe and wire machine room equipment	5.1 Piping and wiring of machine room equipment are set according to manufacturer's layout and specification 5.2 Machine room layout conformed to applicable codes. 5.3 Tools and equipment are used according to job	5.1 Procedures in piping and wiring machine room equipment 5.2 OSH 5.3 PPE 5.4 Mensuration 5.5 Building construction layout and	5.1 Applying procedures in piping and wiring all machine room equipment 5.2 Interpreting electrical plans and drawings 5.3 Using tools and equipment

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	requirements 5.4 Safety precautions are observed at all times during piping and wiring all machine room equipment 5.5 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	elevator installation drawings 5.6 Reading local codes 5.7 Basic electricity 5.8 Different types of tools and equipment	
6. Run the machine room troughing / ducting	6.1 Machine room troughing / ducting is installed according to manufacturer's layout and specification. 6.2 Tools and equipment are used according to job requirements 6.3 Safety precautions are observed at all times during mounting of elevator machine 6.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	6.1 Procedures in running the machine room troughing 6.2 OSH 6.3 PPE 6.4 Mensuration 6.5 Different types of tools and equipment 6.6 Basic electricity	6.1 Applying procedures in running the machine room troughing 6.2 Using tools and Equipment 6.3 Applying basic electricity
7. Fix controller and equipment wiring	7.1 Controller and equipment wiring is installed in accordance to manufacturer's layout and specification. 7.2 Tools and equipment are used according to job requirements 7.3 Safety precautions are observed at all times during mounting of elevator machine 7.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	7.1 Procedures in installing controller and equipment wiring 7.2 OSH 7.3 PPE 7.4 Mensuration 7.5 Basic electricity 7.6 Different types of tools and equipment	7.1 Applying procedures in installing controller and equipment wiring 7.2 Using tools and Equipment 7.3 Applying basic electricity

RANGE OF VARIABLES

VARIABLE	RANGE
1. Tools and equipment	May include: 1.1 Winch 1.2 Chain block 1.3 Pull lift 1.4 Plumb bob 1.5 Spirit level 1.6 Torque wrench 1.7 Tape measure 1.8 Welding machine 1.9 Hammer drill 1.10 Spanner 1.11 Socket wrench 1.12 Pliers 1.13 Screw driver 1.14 Multi tester 1.15 Wire stripper 1.16 Portable lights
2. Hazards	May include: 2.1 Electric shock 2.2 Being struck by the elevator or counterweight 2.3 Getting caught in the door or other moving parts 2.4 Falling from the elevator car 2.5 Asphyxiation while trapped in the elevator 2.6 Falling into the elevator shaft

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Fixed elevator machine 1.2 Fixed deflective and diversion sheave (with machine room) 1.3 Set machine and controls 1.4 Set governor 1.5 Piped and wired machine room equipment 1.6 Ran the machine room troughing/ ducting 1.7 Fixed controller and equipment wiring 1.8 Observed safety measures applicable to worksite operation 1.9 Communicated effectively with others to ensure effective work operation 1.10 Complied with attitudinal work requirements
<p>2. Resource implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Tools, equipment and facilities 2.2 Consumable materials 2.3 Charts and tables
<p>3. Method of assessment</p>	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Direct observation 3.2 Demonstration with Oral Questioning
<p>4. Context for assessment</p>	<p>4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center</p>

UNIT OF COMPETENCY : **INSTALL PIT EQUIPMENT, CAR FRAME, PLATFORM AND COUNTERWEIGHT FRAME**

UNIT CODE : CONXXXXXX

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to install pit equipment, car frame platform and counterweight frame.

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Mount counterweight (CWT) frame and roller guides	1.1 Counterweight frame and roller guides are installed following manufacturer's standard 1.2 Tools and equipment are used according to job requirements 1.3 Safety precautions are observed at all times during mounting of counterweight (CWT) frame and roller guides 1.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	1.1 Procedures in mounting counterweight (CWT) frame and roller guides 1.2 OSH 1.3 PPE 1.4 Mensuration 1.5 Different types of tools and equipment	1.1 Applying procedures in mounting counterweight (CWT) frame and roller guides 1.2 Using tools and equipment
2. Assemble car frame, platform and roller guides	2.1 Car frame, platform and roller guides are assembled following manufacturer's standard 2.2 Tools and equipment are used according to job requirements 2.3 Safety precautions are observed at all times during mounting car frame, platform and roller guides 2.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	2.1 Procedures in assembling car frame, platform and roller guides 2.2 OSH 2.3 PPE 2.4 Mensuration 2.5 Different types of tools and equipment	2.1 Applying procedures in assembling car frame, platform and roller guides 2.2 Using tools and equipment
3. Fix safety gears and governor assembly	4.1 Safety gears and governor assembly are installed based on manufacturer's standard	3.1 Procedures in fixing safety gears and governor	3.1 Applying procedures in fixing safety gears and governor

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	4.2 Tools and equipment are used according to job requirements 4.3 Safety precautions are observed at all times during mounting safety gears and governor assembly 4.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	assembly 3.2 OSH 3.3 PPE 3.4 Mensuration 3.5 Different types of tools and equipment	assembly 3.2 Using tools and equipment
4. Mount buffer and sheave support channel	4.1 Buffer and sheave support channel are installed following manufacturers standard 4.2 Tools and equipment are used according to job requirements 4.3 Safety precautions are observed at all times during mounting buffer and sheave support channel 4.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	4.1 Procedures in mounting buffer and sheave support channel 4.2 OSH 4.3 PPE 4.4 Mensuration 4.5 Different types of tools and equipment	4.1 Applying procedures in mounting buffer and sheave support channel 4.2 Using tools and equipment
5. Mount compensation sheave and governor tension sheave	5.1 Compensation sheave and governor tension sheave are installed following manufacturers standard 5.2 Tools and equipment are used according to job requirements 5.3 Safety precautions are observed at all times during mounting buffer and sheave support channel 5.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	5.1 Procedures in mounting comp. sheave and governor tension sheave 5.2 OSH 5.3 PPE 5.4 Mensuration 5.5 Different types of tools and equipment	5.1 Applying procedures in mounting comp. sheave and governor tension sheave 5.2 Using tools and equipment

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
6. Set initial counterweight plates in counterweight frame	<p>6.1 Initial counterweight plates are set in counterweight frame according to manufacturer's standard</p> <p>6.2 Tools and equipment are used according to job requirements</p> <p>6.3 Safety precautions are observed at all times during mounting buffer and sheave support channel</p> <p>6.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)</p>	<p>6.1 Procedures in setting counterweight plates in counterweight frame</p> <p>6.2 OSH</p> <p>6.3 PPE</p> <p>6.4 Mensuration</p> <p>6.5 Different types of tools and equipment</p>	<p>6.1 Applying procedures in setting counterweight plates in counterweight frame</p> <p>6.2 Using tools and equipment</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Tools and equipment	May include: 1.1 Winch 1.2 Chain block 1.3 Pull lift 1.4 Plumb bob 1.5 Spirit level 1.6 Torque wrench 1.7 Tape measure 1.8 Welding machine 1.9 Hammer drill 1.10 Spanner 1.11 Socket wrench 1.12 Pliers 1.13 Screw driver 1.14 Portable lights 1.15 Angle cutters 1.16 Wood hammer
2. Hazards	May include: 2.1 Electric shock 2.2 Being struck by the elevator or counterweight 2.3 Getting caught in the door or other moving parts 2.4 Falling from the elevator car 2.5 Asphyxiation while trapped in the elevator 2.6 Falling into the elevator shaft

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 3.1 Mounted counterweight (CWT) frame and roller guides 3.2 Assembled car frame, platform and roller guides 3.3 Fixed safety gears and governor assembly 3.4 Mounted buffer and sheave support channel 3.5 Mounted compensation sheave and governor tension sheave 3.6 Set initial counterweight plates in counterweight frame 3.7 Observed safety measures applicable to worksite operation 3.8 Communicated effectively with others to ensure effective work operation 3.9 Complied with attitudinal work requirements
<p>2. Resource implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Tools, equipment and facilities 2.2 Consumable materials 2.3 Charts and tables
<p>3. Method of assessment</p>	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Direct observation 3.2 Demonstration with Oral Questioning
<p>4. Context for assessment</p>	<p>4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center</p>

UNIT OF COMPETENCY : ROPING/BELTING OF CAR TO COUNTERWEIGHT AND INSTALLATION OF TRAVELLING CABLE

UNIT CODE : CONXXXXXX

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to rope/belt car to counterweight and install travelling cable.

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Set ropes/belt to car and counterweight	1.1 Stage rope reels at bottom floor in accordance to manufacturers standard 1.2 Rope/ belt are installed following manufacturers standard 1.3 Tools and equipment are used according to job requirements 1.4 Safety precautions are observed at all times during mounting of Ropes/ Belts to Car and counterweight 1.5 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	1.1 Procedures in setting of rope reels at bottom floor 1.2 Procedures in setting Rope/ Belt 1.3 OSH 1.4 PPE 1.5 Mensuration 1.6 Different types of tools and equipment	1.1 Applying procedures in setting rope reels at bottom floor 1.2 Using tools and equipment
2. Set compensation to bottom of car frame	2.1 Compensation to bottom of car frame are installed following manufacturers standard 2.2 Tools and equipment are used according to job requirements 2.3 Safety precautions are observed at all times during mounting of compensation to bottom of car frame 2.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	2.1 Procedures in setting compensation to bottom of car frame 2.2 OSH 2.3 PPE 2.4 Mensuration 2.5 Different types of tools and equipment	2.1 Applying procedures in setting compensation to bottom of car frame 2.2 Using tools and equipment

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Set compensation to bottom of counterweight frame	3.1 Compensation to bottom of counterweight frame are mounted and set following manufacturers standard 3.2 Tools and equipment are used according to job requirements 3.3 Safety precautions are observed at all times during mounting of Compensation to bottom of counterweight frame 3.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	3.1 Procedures in setting compensation to bottom of counterweight frame 3.2 OSH 3.3 PPE 3.4 Mensuration 3.5 Different types of tools and equipment	3.1 Applying procedures in setting compensation to bottom of counterweight frame 3.2 Using tools and equipment
4. Fix traveling cable	4.1 <i>Traveling cable</i> are installed following manufacturers standard 4.2 Tools and equipment are used according to job requirements 4.3 Safety precautions are observed at all times during fixing of travelling cable 4.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	4.1 Procedures in setting traveling cable 4.2 OSH 4.3 PPE 4.4 Mensuration 4.5 Different types of tools and equipment 4.6 Basic electricity	4.1 Applying procedures in setting traveling cable 4.2 Using tools and equipment 4.3 Applying basic electricity

RANGE OF VARIABLES

VARIABLE	RANGE
1. Rope/ Belt	May include: 1.1 Rope size: 10 mm; 12.7 mm; 13mm; 16mm 1.2 Belt size: 30 mm; 45mm
2. Tools and Equipment	May include: 2.1 Tools 2.1.1 Plier 2.1.2 Long nose 2.1.3 Cutter 2.1.4 Torch 2.1.5 Babbit 2.2 Equipment 2.2.1 Lifting belt 2.2.2 Pull lift 2.2.3 Chain block
3. Compensation	May include: 3.1 Ropes 3.2 Chain
4. Travelling Cable	May include: 4.1 Round travelling cable 4.2 Flat travelling cable

EVIDENCE GUIDE

1. Critical aspects of competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Set ropes/belt to car and counterweight 1.2 Set compensation to bottom of car frame 1.3 Set compensation to bottom of counterweight frame 1.4 Fixed traveling cable 1.5 Observed safety measures applicable to worksite operation 1.6 Communicated effectively with others to ensure effective work operation 1.7 Complied with attitudinal work requirements
2. Resource implications	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Tools, equipment and facilities 2.2 Consumable materials 2.3 Charts and tables
3. Method of assessment	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Direct observation 3.2 Demonstration with Oral Questioning
4. Context for assessment	<ul style="list-style-type: none"> 4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center

UNIT OF COMPETENCY : INSTALL ENTRANCES AND DOORS, HOISTWAY EQUIPMENT/ FIXTURES

UNIT CODE : CONXXXXXX

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to install entrances and doors, hoistway equipment/ fixtures.

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Fix angles, sills and headers	1.1 Angles, sills and headers are installed following manufacturer's standard 1.2 <i>Tools and equipment</i> are used according to job requirements 1.3 Safety precautions are observed at all times during fixing angles, sills and headers 1.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	1.1 Procedures in fixing angles, sills and headers 1.2 OSH 1.3 PPE 1.3 Mensuration 1.4 Different types of tools and equipment	1.1 Applying procedures in setting fixing angles, sills and headers 1.2 Using tools and equipment
2. Fix door panels and interlocks	2.1 Door panels and interlocks are installed following manufacturer's standard 2.2 Tools and equipment are used according to job requirements 2.3 Safety precautions are observed at all times during door panels and interlocks setting 2.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	2.1 Procedures in fixing door panels and interlocks 2.2 OSH 2.3 PPE 2.4 Mensuration 2.5 Different types of tools and equipment	2.1 Applying procedures in setting door panels and interlocks 2.2 Using tools and equipment
3. Set limits, cams, and steel tape	3.1 Limits, cams, and steel tape are set following manufacturer's standard 3.2 Tools and equipment are used according to	3.1 Procedures in setting limits, cams, and steel tape 3.2 OSH 3.3 PPE	3.1 Applying procedures in setting limits, cams, and steel tape 3.2 Using tools and

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	job requirements 3.3 Safety precautions are observed at all times during setting of limits, cams, and tapes 3.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	3.4 Mensuration 3.5 Different types of tools and equipment	equipment
4. Fix hoistway wire ways, conduit & fittings, fixture boxes, and wirings	4.1 Hoistway wire ways, conduit and fittings are installed in accordance to manufacturer's standard 4.2 Fixture boxes are installed in accordance to manufacturer's standard 4.3 Hoistway wire are installed following manufacturers electrical wiring diagram 4.4 Tools and equipment are used according to job requirements 4.5 Safety precautions are observed at all times during fixing hoistway wire ways, conduit & fittings, fixture boxes, and wirings 4.6 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE).	4.1 Mensuration 4.2 Blue print reading 4.3 Materials specification 4.4 Use of materials, tools and equipment 4.5 Interpretation of an electrical and mechanical drawing 4.6 Use and installation of wire ways and cable trays 4.7 Suitability for installation and used of bus way, cable tray, fittings and panels in conformity with the provision of the PEC 4.8 OSH 4.9 PPE	4.1 Interpreting technical plan 4.2 Effective communication skills (written and oral) 4.3 Effective use of measuring devices 4.4 Installing wire ways and cable tray

RANGE OF VARIABLES

VARIABLE	RANGE
1. Tools and equipment	May include: 1.1 Electric drill 1.2 Ball pin hammer 1.3 Pipe cutter 1.4 Pipe reamer 1.5 Portable grinder 1.6 Spirit level 1.7 Hack saw 1.8 Plumb bob 1.9 Tape measure 1.10 Pipe threader
2. Conduit	May include: 2.1 Rigid Steel Conduits (RSC) 2.2 Intermediate Metallic Conduit (IMC) 2.3 Electrical Metallic Tubing (EMT) 2.4 Polyvinyl Chloride Pipe (PVC)
3. Fittings	May include: 3.1 Condulets and Reducers 3.2 lock nut and bushing 3.3 Entrance cap 3.4 Nipple 3.5 Elbow

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Installed angles, sills and headers following manufacturer's standard 1.2 Installed door panels and interlocks following manufacturer's standard 1.3 Set limits, cams, and steel tape following manufacturer's standard 1.4 Fixed hoistway wire ways, conduit & fittings, fixture boxes, and wirings following manufacturer's standard 1.5 Observed safety measures applicable to worksite operation 1.6 Communicated effectively with others to ensure effective work operation 1.7 Complied with attitudinal work requirements
<p>2. Resource implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Tools, equipment and facilities 2.2 Consumable materials 2.3 Charts and tables
<p>3. Method of assessment</p>	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Direct observation 3.2 Demonstration with Oral Questioning
<p>4. Context for assessment</p>	<p>4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center</p>

UNIT OF COMPETENCY : **INSTALL HOISTWAY DUCTING, PIPING AND WIRING**

UNIT CODE : CONXXXXXX

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to install hoistway ducting, piping and wiring.

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Fix hoistway wire ways, conduit & fittings, fixture boxes, and wirings	1.1 Hoistway wire ways, conduit and fittings are installed in accordance to manufacturers standard 1.2 Fixture boxes are installed in accordance to manufacturers standard 1.3 Hoistway wire are installed following manufacturers electrical wiring diagram 1.4 Tools and equipment are used according to job requirements 1.5 Safety precautions are observed at all times during setting of hoistway wire ways and associated conduit 1.6 Hazards and consequences are addressed by wearing personal protective equipment (PPE).	1.1 Mensuration 1.2 Blue print reading 1.3 Materials specification 1.4 Use of materials, tools and equipment 1.5 Interpretation of an electrical and mechanical drawing. 1.6 Proper uses and installation of wire ways and cable trays 1.7 Suitability for installation and used of bus way, cable tray, fittings and panels in conformity with the provision of the PEC. 1.8 PPE	1.1 Interpreting technical plan 1.2 Effective communication skills (written and oral) 1.3 Effective use of measuring devices 1.4 Installing wire ways and cable tray
2.Pull hoistway wiring	2.1 Necessary tools, equipment, materials and Personal Protective Equipment (PPE) are prepared in line with job requirements. 2.2 Cable pulling & installation requirements and constraints from plan and site inspection are identified as per job requirements. 2.3 Cable lay out and installation equipment	2.1 Mensuration 2.2 Blue print reading and materials specification 2.3 Use of wires, cables and tools 2.4 Preparation of required size of cable based on PEC Wire Table 2.5 Cable pulling and installation requirements	2.1 Interpreting technical plan 2.2 Effective communication skills (written and Oral) 2.3 Effective use of measuring devices 2.4 Interpreting plans and drawings 2.5 Handling of materials, tools and equipment

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	<p>are set up in accordance with manufacture's and job requirements</p> <p>2.4 Site is made safe and secure for cable installation.</p> <p>2.5 Suitable protective clothing is selected and required safety devices are used</p> <p>2.6 Support structure is assessed as safe for normal working conditions</p>	<p>2.6 Cable lay out and installation</p>	<p>2.6 Applying methods and techniques in various type of wiring wires and cables</p> <p>2.7 Pulling of conductors</p>
<p>3.Perform wiring and cabling</p>	<p>3.1 Safety procedures are followed based on safety regulations</p> <p>3.2 PPE are identified and selected in line with safety requirements</p> <p>3.3 Tools, equipment, pulling compound and safety requirements are identified and obtained for the lay out and installation.</p> <p>3.4 Cable is secured permanently to support structure in accordance with standard installation procedures</p> <p>3.5 Bending radius and loops tolerance is observed for cable materials at all times</p> <p>3.6 Schedule of wire cutting lists is followed based on estimates, quantity and sizes to avoid wastage.</p> <p>3.7 Further instructions are sought if unplanned events or conditions occur</p> <p>3.8 Checking of quality of work is done in accordance with instructions and requirements.</p>	<p>3.1 DOLE Department Order No. 13 s. 1998 Guidelines Governing Occupational Safety and Health in the Construction Industry</p> <p>3.2 Wiring procedure such as cable lay-out, pulling splicing and termination of wire.</p> <p>3.3 Uses of different type of wires and cables and its applications</p> <p>3.4 Markings of Circuit homeruns.</p> <p>3.5 Application of pulling compound</p> <p>3.6 Bundling of wire size as per job requirement.</p>	<p>3.1 Applying methods and techniques in various type of wiring wires and cables</p> <p>3.2 Wiring-up the required electrical control based on the standard.</p> <p>3.3 Connecting and terminating of motor terminal/ leads out and the control devices.</p> <p>3.4 Checking for continuity test or ohmmeter test of motor terminal.</p> <p>3.5 Terminating wires</p> <p>3.6 Performing the installation economically.</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Conduit	May include: 1.1 Rigid Steel Conduits (RSC) 1.2 Intermediate Metallic Conduit (IMC) 1.3 Electrical Metallic Tubing (EMT) 1.4 Polyvinyl Chloride Pipe (PVC)
2. Fittings	May include: 2.1 Condulets and Reducers 2.2 Lock nut and bushing 2.3 Entrance cap 2.4 Nipple 2.5 Elbow
3. Tools and equipment	May include: 3.1 Electric drill 3.2 Ballpeen hammer 3.3 Pipe cutter 3.4 Pipe reamer 3.5 Portable grinder 3.6 Spirit level 3.7 Hack saw 3.8 Plumb bob 3.9 Tape measure 3.10 Pipe threader

EVIDENCE GUIDE

1. Critical aspects of competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Fixed hoistway wire ways, conduit, fittings, fixture boxes, and wirings 1.2 Pulled hoistway wiring 1.3 Performed wiring and cabling 1.4 Observed safety measures applicable to worksite operation 1.5 Communicated effectively with others to ensure effective work operation 1.6 Complied with attitudinal work requirements
2. Resource implications	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Tools, equipment and facilities 2.2 Consumable materials 2.3 Charts and tables
3. Method of assessment	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Direct observation 3.2 Demonstration with Oral Questioning
4. Context for assessment	<ul style="list-style-type: none"> 4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center

UNIT OF COMPETENCY : INSTALL CAR AND HOISTWAY COMPONENTS

UNIT CODE : CONXXXXXX

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to install car and hoistway components.

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Assemble cab shell	1.1 Cab Shell and accessories are assembled and plumbed following Manufacturers standard 1.2 Tools and equipment are used according to job requirements 1.3 Safety precautions are observed at all times during setting of limits, cams, and tapes 1.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	1.1 Procedures in assembling cab shell 1.2 OSH 1.3 PPE 1.4 Mensuration 1.5 Different types of tools and equipment	4.5 Applying procedures in assembling cab shell 4.6 Using tools and equipment
2. Assemble car doors and door operator	2.1 Car doors and door operator are assembled following manufacturers standard 2.2 Tools and equipment are used according to job requirements 2.3 Safety precautions are observed at all times during setting of limits, cams, and tapes 2.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	2.1 Procedures in assembling car doors and door operator 2.2 OSH 2.3 PPE 2.4 Mensuration 2.5 Different types of tools and equipment	2.1 Applying procedures in assembling car doors and door operator 2.2 Using tools and equipment
3. Fix car top and car bottom components	3.1 Car top & car bottom components are installed following manufacturers standard	3.1 Procedures in fixing car top and car bottom components	3.1 Applying procedures in fixing car top and car bottom

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	3.2 Tools and equipment are used according to job requirements 3.3 Safety precautions are observed at all times during setting of limits, cams, and tapes 3.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	3.2 OSH 3.3 PPE 3.4 Mensuration 3.5 Different types of tools and equipment	components 3.2 Using tools and equipment
4. Fix hoistway vanes	4.1 Hoistway vanes are installed following manufacturers standard 4.2 Tools and equipment are used according to job requirements 4.3 Safety precautions are observed at all times during setting of limits, cams, and tapes 4.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	4.1 Procedures in fixing hoistway vanes 4.2 OSH 4.3 PPE 4.4 Mensuration 4.5 Different types of tools and equipment	4.1 Applying procedures in fixing hoistway vanes 4.2 Using tools and equipment
5. Fix remaining counter weight plates	5.1 Remaining counter weight plates are installed following manufacturers standard 5.2 Tools and equipment are used according to job requirements 5.3 Safety precautions are observed at all times during setting of limits, cams, and tapes 5.4 Hazards and consequences are addressed by wearing Personal Protective Equipment (PPE)	5.1 Procedures in fixing remaining counter weight plates 5.2 OSH 5.3 PPE 5.4 Mensuration 5.5 Different types of tools and equipment	6.1 Applying procedures in fixing remaining counter weight plates 6.2 Using tools and equipment

ELEMENT	PERFORMANCE CRITERIA <i>Bold and Italicized</i> terms are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
6. Notify completion of work	<p>6.1 Final checks are made to ensure that work conforms with instructions and job requirements</p> <p>6.2 Supervisor is notified upon completion of work</p> <p>6.3 Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures</p> <p>6.4 Work area is cleaned up and made safe according to OSHA regulations</p>	<p>6.1 Processes, operations, systems</p> <ul style="list-style-type: none"> o Maintenance of tools o Storage of tools <p>6.2 Checking and conforming procedures in installation based on job requirement</p> <p>6.3 Good housekeeping</p>	<p>6.1 Skills in continuity test or ohmmeter test of motor terminal.</p> <p>6.2 Commissioning skills</p> <p>6.3 Documentation and reporting skills</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Accessories	May include: 1.1 Car operating panel 1.2 Ceiling diffuser 1.3 Car lightings and fan 1.4 Car railings or hand rails 1.5 Car panels
2.Tools and equipment	May include: 2.1 Wrenches 2.2 Screw drivers 2.3 Pliers 2.4 Portable drill 2.5 Multi tester 2.6 Rubber mallet

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Assembled cab shell 1.2 Assembled car doors and door operator 1.3 Fixed car top and car bottom components 1.4 Fixed hoistway vanes 1.5 Fixed remaining counter weight plates 1.6 Notified completion of work 1.7 Observed safety measures applicable to worksite operation 1.8 Communicated effectively with others to ensure effective work operation 1.9 Complied with attitudinal work requirements
<p>2. Resource implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Tools, equipment and facilities 2.2 Consumable materials 2.3 Charts and tables
<p>3. Method of assessment</p>	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Direct observation 3.2 Demonstration with Oral Questioning
<p>4. Context for assessment</p>	<p>4.1 Competency may be assessed in actual workplace or at the designated TESDA Accredited Assessment Center</p>

3.1 TRAINEE ENTRY REQUIREMENTS

Trainees or students who wish to enter this training should possess the following requirements:

- Must possess good communication skills
- Must have arithmetic skills
- Physically fit
- Knowledge in basic electricity
- Knowledge in basic welding
- Knowledge in scaffolding works

3.2 TRAINERS' QUALIFICATION

- Must have Trainer's Methodology Training Certificate OR must be a practicing trainer for two (2) years within the last five (5) years
- Must have at least (2) years industry experience on elevator installation within the last five (5) years

3.3 LIST OF TOOLS, EQUIPMENT AND MATERIALS

List of tools, equipment and materials for the training of a maximum of 25 trainees for Elevator Installation are as follows:

TOOLS	
QTY.	DESCRIPTION
5 pcs.	Flat Screw Driver, 8"
5 pcs.	Phillips Screw Driver, 8"
5 pcs.	Pliers
5 pcs.	Wrenches, 10"
5 pcs.	Spirit Level
5 pcs.	Ballpeen Hammer
5 pcs.	Measuring Tape
5 pcs.	Plumb bob
5 pcs.	Torque Wrench

EQUIPMENT	
QTY.	DESCRIPTION
5 units	Welding machine (Portable)
5 units	Chain block – 5 Tons
5 units	Pull lift, 3 tons
5 units	Winch
5 units	Electric drill
5 units	Rotary hammer Drill
5 Units	Angle Grinder
5 Units	Electric Blower
5 Units	Wet and Dry Vacuum cleaner
5 Units	Pallet Truck- 3 Tons

MATERIALS	
QTY.	DESCRIPTION
2 Sacks	Cotton rags
10 pcs.	Paint Brush
25 sets	Personal Protective Equipment (PPE)

ACKNOWLEDGMENTS

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