

# TRAINING REGULATIONS



## MASONRY NC II

**CIVIL WORKS  
(CONSTRUCTION SECTOR)**

**TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY**  
East Service Road, South Superhighway, Taguig City, Metro Manila

**TABLE OF CONTENTS**  
**CONSTRUCTION SECTOR**  
**MASONRY NC II**

	<b>Page No.</b>
<b>Section 1. MASONRY NC II QUALIFICATION</b>	<b>1</b>
<b>Section 2. COMPETENCY STANDARDS</b>	<b>2 - 50</b>
• Basic Competencies	2 – 15
• Common Competencies	16 - 28
• Core Competencies	29 - 50
<b>Section 3. TRAINING STANDARDS</b>	<b>51 - 59</b>
<b>3.1 Curriculum Design</b>	<b>51 - 55</b>
- Basic Competencies	
- Common Competencies	
- Core Competencies	
<b>3.2 Training Delivery</b>	<b>55 - 56</b>
<b>3.3 Trainee Entry Requirements</b>	<b>56</b>
<b>3.4 List of Tools, Equipment and Materials</b>	<b>57 - 58</b>
<b>3.5 Training Facilities</b>	<b>58</b>
<b>3.6 Trainer's Qualifications</b>	<b>59</b>
<b>3.7 Institutional Assessment</b>	<b>59</b>
<b>Section 4. NATIONAL ASSESSMENT AND CERTIFICATION ARRANGEMENTS</b>	<b>60</b>
<b>COMPETENCY MAP</b>	<b>61</b>
<b>DEFINITION OF TERMS</b>	<b>62</b>
<b>ACKNOWLEDGEMENTS</b>	<b>63</b>

## TRAINING REGULATIONS FOR MASONRY NC II

### SECTION 1 MASONRY NC II QUALIFICATION

The MASONRY NC II Qualification consists of competencies that a person must achieve that will enable him/her to perform construction of brick and concrete block structure, installation of pre-cast balluster/handrail and plastering of concrete wall surface.

This Qualification is packaged from the competency map of Construction – Civil Works sub-sector as shown in Annex A.

The Units of Competency comprising this Qualification include the following:

#### **CODE NO. BASIC COMPETENCIES**

##### **Units of Competency**

500311105	Participate in workplace communication
500311106	Work in a team environment
500311107	Practice career professionalism
500311108	Practice occupational health and safety procedures

#### **CODE NO. COMMON COMPETENCIES**

##### **Units of Competency**

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**

##### **Units of Competency**

CON712301	Prepare masonry materials
CON712302	Perform basic masonry works
CON712303	Lay brick/block for structure
CON712304	Plaster wall surface
CON712305	Install pre-cast balusters and handrail

A person who has achieved this Qualification is competent to be:

- Mason

## SECTION 2 COMPETENCY STANDARDS

This section gives the details of the contents of the core units of competency required in MASONRY NC II.

### BASIC COMPETENCIES

**UNIT OF COMPETENCY :** PARTICIPATE IN WORKPLACE COMMUNICATION

**UNIT CODE :** 500311105

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

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range of Variables
1. Obtain and convey workplace information	1.1 Specific and relevant information is accessed from <b><i>appropriate sources</i></b> 1.2 Effective questioning , active listening and speaking skills are used to gather and convey information 1.3 Appropriate <b><i>medium</i></b> 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 <b><i>storage</i></b> of information are used 1.7 Personal interaction is carried out clearly and concisely
2. Participate in workplace meetings and discussions	2.1 Team meetings are attended on time 2.2 Own opinions are clearly expressed and those of others are listened to without interruption 2.3 Meeting inputs are consistent with the meeting purpose and established <b><i>protocols</i></b> 2.4 <b><i>Workplace interactions</i></b> are conducted in a courteous manner 2.5 Questions about simple routine workplace procedures and matters concerning working conditions of employment are asked and responded to 2.6 Meetings outcomes are interpreted and implemented
3. Complete relevant work related documents	3.1 Range of <b><i>forms</i></b> relating to conditions of employment are completed accurately and legibly 3.2 Workplace data is recorded on standard workplace forms and documents 3.3 Basic mathematical processes are used for routine calculations 3.4 Errors in recording information on forms/ documents are identified and properly acted upon 3.5 Reporting requirements to supervisor are completed according to organizational guidelines

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Appropriate sources	1.1. Team members 1.2. Suppliers 1.3. Trade personnel 1.4. Local government 1.5. Industry bodies
2. Medium	2.1. Memorandum 2.2. Circular 2.3. Notice 2.4. Information discussion 2.5. Follow-up or verbal instructions 2.6. Face to face communication
3. Storage	3.1. Manual filing system 3.2. Computer-based filing system
4. Forms	4.1. Personnel forms, telephone message forms, safety reports
5. Workplace interactions	5.1. Face to face 5.2. Telephone 5.3. Electronic and two way radio 5.4. Written including electronic, memos, instruction and forms, non-verbal including gestures, signals, signs and diagrams
6. Protocols	6.1. Observing meeting 6.2. Compliance with meeting decisions 6.3. Obeying meeting instructions

## EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1. Prepared written communication following standard format of the organization</li> <li>1.2. Accessed information using communication equipment</li> <li>1.3. Made use of relevant terms as an aid to transfer information effectively</li> <li>1.4. Conveyed information effectively adopting the formal or informal communication</li> </ul>
<p>2. Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> <li>2.1. Effective communication</li> <li>2.2. Different modes of communication</li> <li>2.3. Written communication</li> <li>2.4. Organizational policies</li> <li>2.5. Communication procedures and systems</li> <li>2.6. Technology relevant to the enterprise and the individual's work responsibilities</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1. Follow simple spoken language</li> <li>3.2. Perform routine workplace duties following simple written notices</li> <li>3.3. Participate in workplace meetings and discussions</li> <li>3.4. Complete work related documents</li> <li>3.5. Estimate, calculate and record routine workplace measures</li> <li>3.6. Basic mathematical processes of addition, subtraction, division and multiplication</li> <li>3.7. Ability to relate to people of social range in the workplace</li> <li>3.8. Gather and provide information in response to workplace Requirements</li> </ul>
<p>4. Resource Implications</p>	<ul style="list-style-type: none"> <li>4.1. Fax machine</li> <li>4.2. Telephone</li> <li>4.3. Writing materials</li> <li>4.4. Internet</li> </ul>
<p>5. Methods of Assessment</p>	<ul style="list-style-type: none"> <li>5.1. Direct Observation</li> <li>5.2. Oral interview and written test</li> </ul>
<p>6. Context of Assessment</p>	<ul style="list-style-type: none"> <li>6.1. Competency may be assessed individually in the actual workplace or through accredited institution</li> </ul>

**UNIT OF COMPETENCY: WORK IN TEAM ENVIRONMENT**

**UNIT CODE : 500311106**

**UNIT DESCRIPTOR :** This unit covers the skills, knowledge and attitudes to identify role and responsibility as a member of a team.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Describe team role and scope	1.1. The <b><i>role and objective of the team</i></b> is identified from available <b><i>sources of information</i></b>  1.2. Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources
2. Identify own role and responsibility within team	2.1. Individual role and responsibilities within the team environment are identified  2.2. Roles and responsibility of other team members are identified and recognized  2.3. Reporting relationships within team and external to team are identified
3. Work as a team member	3.1. Effective and appropriate forms of communications used and interactions undertaken with team members who contribute to known team activities and objectives  3.2. Effective and appropriate contributions made to complement team activities and objectives, based on individual skills and competencies and <b><i>workplace context</i></b>  3.3. Observed protocols in reporting using standard operating procedures  3.4. Contribute to the development of team work plans based on an understanding of team's role and objectives and individual competencies of the members.

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Role and objective of team	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	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	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"> <li>1.1. Operated in a team to complete workplace activity</li> <li>1.2. Worked effectively with others</li> <li>1.3. Conveyed information in written or oral form</li> <li>1.4. Selected and used appropriate workplace language</li> <li>1.5. Followed designated work plan for the job</li> <li>1.6. Reported outcomes</li> </ul>
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> <li>2.1. Communication process</li> <li>2.2. Team structure</li> <li>2.3. Team roles</li> <li>2.4. Group planning and decision making</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1. Communicate appropriately, consistent with the culture of the workplace</li> </ul>
<p>4. Resource Implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> <li>4.1. Access to relevant workplace or appropriately simulated environment where assessment can take place</li> <li>4.2. Materials relevant to the proposed activity or tasks</li> </ul>
<p>5. Methods of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> <li>5.1. Observation of the individual member in relation to the work activities of the group</li> <li>5.2. Observation of simulation and or role play involving the participation of individual member to the attainment of organizational goal</li> <li>5.3. Case studies and scenarios as a basis for discussion of issues and strategies in teamwork</li> </ul>
<p>6. Context for Assessment</p>	<ul style="list-style-type: none"> <li>6.1. Competency may be assessed in workplace or in a simulated workplace setting</li> <li>6.2. Assessment shall be observed while task are being undertaken whether individually or in group</li> </ul>

**UNIT OF COMPETENCY: PRACTICE CAREER PROFESSIONALISM**

**UNIT CODE : 500311107**

**UNIT DESCRIPTOR :** This unit covers the knowledge, skills and attitudes in promoting career growth and advancement.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Integrate personal objectives with organizational goals	1.1 Personal growth and work plans are pursued towards improving the qualifications set for the profession 1.2 Intra- and interpersonal relationships <del>is</del> are maintained in the course of managing oneself based on performance <b>evaluation</b> 1.3 Commitment to the organization and its goal is demonstrated in the performance of duties
1. Set and meet work priorities	2.1 Competing demands are prioritized to achieve personal, team and organizational goals and objectives. 2.2 <b>Resources</b> are utilized efficiently and effectively to manage work priorities and commitments 2.3 Practices along economic use and maintenance of equipment and facilities are followed as per established procedures
2. Maintain professional growth and development	3.1 <b>Trainings and career opportunities</b> are identified and availed of based on job requirements 3.2 <b>Recognitions</b> are -sought/received and demonstrated as proof of career advancement 3.3 <b>Licenses and/or certifications</b> relevant to job and career are obtained and renewed

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Evaluation	1.1 Performance Appraisal 1.2 Psychological Profile 1.3 Aptitude Tests
2. Resources	2.1 Human 2.2 Financial 2.3 Technology 2.3.1 Hardware 2.3.2 Software
3. Trainings and career opportunities	3.1 Participation in training programs 3.1.1 Technical 3.1.2 Supervisory 3.1.3 Managerial 3.1.4 Continuing Education 3.2 Serving as Resource Persons in conferences and workshops
4. Recognitions	4.1 Recommendations 4.2 Citations 4.3 Certificate of Appreciations 4.4 Commendations 4.5 Awards 4.6 Tangible and Intangible Rewards
5. Licenses and/or certifications	5.1 National Certificates 5.2 Certificate of Competency 5.3 Support Level Licenses 5.4 Professional Licenses

## EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Attained job targets within key result areas (KRAs)</li> <li>1.2 Maintained intra - and interpersonal relationship in the course of managing oneself based on performance evaluation</li> <li>1.3 Completed trainings and career opportunities which are based on the requirements of the industries</li> <li>1.4 Acquired and maintained licenses and/or certifications according to the requirement of the qualification</li> </ul>
<p>2. Underpinning Knowledge</p>	<ul style="list-style-type: none"> <li>2.1 Work values and ethics (Code of Conduct, Code of Ethics, etc.)</li> <li>2.2 Company policies</li> <li>2.3 Company-operations, procedures and standards</li> <li>2.4 Fundamental rights at work including gender sensitivity</li> <li>2.5 Personal hygiene practices</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Appropriate practice of personal hygiene</li> <li>3.2 Intra and Interpersonal skills</li> <li>3.3 Communication skills</li> </ul>
<p>4. Resource Implications</p>	<p>The following resources <b>MUST</b> be provided:</p> <ul style="list-style-type: none"> <li>4.1 Workplace or assessment location</li> <li>4.2 Case studies/scenarios</li> </ul>
<p>5. Methods of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Portfolio Assessment</li> <li>5.2 Interview</li> <li>5.3 Simulation/Role-plays</li> <li>5.4 Observation</li> <li>5.5 Third Party Reports</li> <li>5.6 Exams and Tests</li> </ul>
<p>6. Context of Assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency may be assessed in the work place or in a simulated work place setting</li> </ul>

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

**UNIT CODE :** 500311108

**UNIT DESCRIPTOR :** This unit covers the outcomes required to comply with regulatory and organizational requirements for occupational health and safety.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Identify hazards and risks	1.1 <b>Safety regulations</b> and workplace safety and hazard control practices and procedures are clarified and explained based on organization procedures 1.2 <b>Hazards/risks</b> in the workplace and their corresponding indicators are identified to minimize or eliminate risk to co-workers, workplace and environment in accordance with organization procedures 1.3 <b>Contingency measures</b> during workplace accidents, fire and other emergencies are recognized and established in accordance with organization procedures
2. Evaluate hazards and risks	2.1 Terms of maximum tolerable limits which when exceeded will result in harm or damage are identified based on threshold limit values (TLV) 2.2 Effects of the hazards are determined 2.3 OHS issues and/or concerns and identified safety hazards are reported to designated personnel in accordance with workplace requirements and relevant workplace OHS legislation

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
3. Control hazards and risks	<p>3.1 Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace are consistently followed</p> <p>3.2 Procedures for dealing with workplace accidents, fire and emergencies are followed in accordance with organization OHS policies</p> <p>3.3 <b>Personal protective equipment (PPE)</b> is correctly used in accordance with organization OHS procedures and practices</p> <p>3.4 Appropriate assistance is provided in the event of a workplace emergency in accordance with established organization protocol</p>
4. Maintain OHS awareness	<p>4.1 <b>Emergency-related drills and trainings</b> are participated in as per established organization guidelines and procedures</p> <p>4.2 <b>OHS personal records</b> are completed and updated in accordance with workplace requirements</p>

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Safety regulations	May include but are not limited to: 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 Philippine Occupational Safety and Health Standards 1.6 DOLE regulations on safety legal requirements 1.7 ECC regulations
2. Hazards/Risks	May include but are not limited to: 2.1 Physical hazards – impact, illumination, pressure, noise, vibration, temperature, radiation 2.2 Biological hazards- bacteria, viruses, plants, parasites, mites, molds, fungi, insects 2.3 Chemical hazards – dusts, fibers, mists, fumes, smoke, gasses, vapors 2.4 Ergonomics <ul style="list-style-type: none"> <li>• Psychological factors – over exertion/ excessive force, awkward/static positions, fatigue, direct pressure, varying metabolic cycles</li> <li>• Physiological factors – monotony, personal relationship, work out cycle</li> </ul>
3. Contingency measures	May include but are not limited to: 3.1 Evacuation 3.2 Isolation 3.3 Decontamination 3.4 (Calling designed) emergency personnel
4. PPE	May include but are not limited to: 4.1 Mask 4.2 Gloves 4.3 Goggles 4.4 Hair Net/cap/bonnet 4.5 Face mask/shield 4.6 Ear muffs 4.7 Apron/Gown/coverall/jump suit 4.8 Anti-static suits

VARIABLE	RANGE
5. Emergency-related drills and training	5.1 Fire drill 5.2 Earthquake drill 5.3 Basic life support/CPR 5.4 First aid 5.5 Spillage control 5.6 Decontamination of chemical and toxic 5.7 Disaster preparedness/management
6. OHS personal records	6.1 Medical/Health records 6.2 Incident reports 6.3 Accident reports 6.4 OHS-related training completed

## EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Explained clearly established workplace safety and hazard control practices and procedures</li> <li>1.2 Identified hazards/risks in the workplace and its corresponding indicators in accordance with company procedures</li> <li>1.3 Recognized contingency measures during workplace accidents, fire and other emergencies</li> <li>1.4 Identified terms of maximum tolerable limits based on threshold limit value- TLV.</li> <li>1.5 Followed Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace</li> <li>1.6 Used Personal Protective Equipment (PPE) in accordance with company OHS procedures and practices</li> <li>1.7 Completed and updated OHS personal records in accordance with workplace requirements</li> </ul>
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> <li>2.1 OHS procedures and practices and regulations</li> <li>2.2 PPE types and uses</li> <li>2.3 Personal hygiene practices</li> <li>2.4 Hazards/risks identification and control</li> <li>2.5 Threshold Limit Value -TLV</li> <li>2.6 OHS indicators</li> <li>2.7 Organization safety and health protocol</li> <li>2.8 Safety consciousness</li> <li>2.9 Health consciousness</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Practice of personal hygiene</li> <li>1.2 Hazards/risks identification and control skills</li> <li>1.3 Interpersonal skills</li> <li>3.4 Communication skills</li> </ul>
<p>3. Resource Implications</p>	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>4.1 Workplace or assessment location</li> <li>4.2 OHS personal records</li> <li>4.3 PPE</li> <li>4.4 Health records</li> </ul>
<p>4. Methods of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Portfolio Assessment</li> <li>5.2 Interview</li> <li>5.3 Case Study/Situation</li> </ul>
<p>5. Context for Assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency may be assessed in the work place or in a simulated work place setting</li> </ul>

## 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 based on the required performance standards.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range of Variable
1. Identify materials	1.1 <b>Materials</b> are listed as per job requirements 1.2 Quantity and <b>description of materials</b> conform with the job requirements 1.3 Tools and accessories are identified according to job requirements
2. Requisition materials	2.1 Materials and tools needed are requested according to the list prepared 2.2 Request is done as per <b>company standard operating procedures (SOP)</b> 2.3 Substitute materials and tools are provided without sacrificing cost and quality of work
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 for damages according to enterprise procedures 3.3 Materials and tools are set aside to appropriate location nearest to the workplace

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Materials and Tools	1.1 Electrical supplies 1.2 Structural 1.3 Plumbing 1.4 Welding/pipefitting 1.5 Carpentry 1.6 Masonry
2. Description of Materials and Tools	2.1 Brand name 2.2 Size 2.3 Capacity 2.4 Kind of application
3. Company standard procedures	3.1 Job order 3.2 Requisition slip 3.3 Borrower slip

## EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Listed materials and tools according to quantity and job requirements</li> <li>1.2 Requested materials and tools according to the list prepared and as per company SOP</li> <li>1.3 Inspected issued materials and tools as per quantity and job specifications</li> <li>1.4 Tools provided with appropriate safety devices</li> </ul>
<p>2. Underpinning knowledge</p>	<ul style="list-style-type: none"> <li>2.1 Types and uses of construction materials and tools</li> <li>2.2 Different forms</li> <li>2.3 Requisition procedures</li> </ul>
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> <li>3.1 Preparing materials and tools</li> <li>3.2 Proper handling of tools and equipment</li> <li>3.3 Following instructions</li> </ul>
<p>4. Resource implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> <li>4.1 Workplace location</li> <li>4.2 Materials relevant to the unit of competency</li> <li>4.3 Technical plans, drawings and specifications relevant to the activities</li> </ul>
<p>5. Methods of assessment</p>	<p>Competency in this unit must be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Direct observation and oral questioning</li> </ul>
<p>6. Context of assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency may be assessed in the workplace or in a simulated workplace</li> <li>6.2 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines</li> </ul>

**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.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
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
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
3. Apply information in manual	3.1 <b>Manual</b> 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
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

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Procedures, Specifications and Manuals of Instructions	Kinds of Manuals: 1.1 Manufacturer's Specification Manual 1.2 Repair Manual 1.3 Maintenance Procedure Manual 1.4 Periodic Maintenance Manual

## EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Identified and accessed specification/manuals as per job requirements</li> <li>1.2 Interpreted manuals in accordance with industry practices</li> <li>1.3 Applied information in manuals according to the given task</li> <li>1.4 Stored manuals in accordance with company requirements</li> </ul>
<p>2. Underpinning knowledge</p>	<ul style="list-style-type: none"> <li>2.1 Types of manuals used in construction sector</li> <li>2.2 Identification of symbols used in the manuals</li> <li>2.3 Identification of units of measurements</li> <li>2.4 Unit conversion</li> </ul>
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> <li>3.1 Reading and comprehension skills required to identify and interpret construction manuals and specifications</li> <li>3.2 Accessing information and data</li> </ul>
<p>4. Resource implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> <li>4.1 All manuals/catalogues relative to construction sector</li> </ul>
<p>5. Methods of assessment</p>	<p>Competency should be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Direct observation</li> <li>5.2 Questions/interview</li> </ul> <p>Assessment of underpinning knowledge and practical skills may be combined</p>
<p>6. Context of assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines</li> <li>6.2 Assessment may be conducted in the workplace or a simulated environment</li> </ul>

**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.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized terms</i> are elaborated in the Range of Variable
1. Select measuring instruments	1.1 Object or component to be measured is identified, classified and interpreted according to the appropriate regular <b><i>geometric shape</i></b> 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 Appropriate measuring instruments are selected according to job requirements 1.5 Alternative measuring tools are used without sacrificing cost and quality of work
2. Carry out measurements and calculations	2.1 Accurate <b><i>measurements</i></b> are obtained according to job requirements 2.2 Alternative measuring tools are used without sacrificing cost and quality of work 2.3 <b><i>Calculation</i></b> needed to complete work tasks are performed using the four basic process of addition (+), subtraction (-), multiplication (x) and division (/) including but not limited to: trigonometric functions, algebraic computations 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

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Geometric shape	Including but is not limited to: 1.1 Round 1.2 Square 1.3 Rectangular 1.4 Triangle 1.5 Sphere 1.6 Conical
2. Measuring instruments	Including but not limited to: 2.1 Micrometer (In-out, depth) 2.2 Vernier caliper (out, inside) 2.3 Dial gauge with mag, std. 2.4 Straight edge 2.5 Thickness gauge 2.6 Torque gauge 2.7 Small hole gauge 2.8 Telescopic gauge 2.9 Try-square 2.10 Protractor 2.11 Combination gauge 2.12 Steel rule 2.13 Voltmeter 2.14 Ammeter 2.15 Mega-ohmmeter 2.16 Kilowatt hour meter 2.17 Gauges 2.18 Thermometers
3. Measurements and calculations	3.1 Linear 3.2 Volume 3.3 Area 3.4 Wattage 3.5 Voltage 3.6 Resistance 3.7 Amperage 3.8 Frequency 3.9 Impedance

VARIABLE	RANGE
	3.10 Conductance 3.11 Capacitance 3.12 Displacement 3.16 Inside diameter 3.17 Circumference 3.18 Length 3.19 Thickness 3.20 Outside diameter 3.21 Taper 3.22 Out of roundness 3.23 Oil clearance 3.24 End play/Thrust clearance

## EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires that the candidate:</p> <p>1.1 Selected and prepared appropriate measuring instruments in accordance with job requirements</p> <p>1.2 Performed measurements and calculations according to job requirements/ ISO</p>
<p>2. Underpinning knowledge</p>	<p><b>TRADE MATHEMATICS / MENSURATION</b></p> <p>2.1 Four fundamental operation</p> <p>2.2 Linear measurement</p> <p>2.3 Dimensions</p> <p>2.4 Unit conversion</p> <p>2.5 Ratio and proportion</p> <p>2.6 Trigonometric functions</p> <p>2.8 Algebraic equations</p>
<p>3. Underpinning skills</p>	<p>3.1 Performing calculation by addition, subtraction, multiplication and division; trigonometric functions and algebraic equations</p> <p>3.2 Visualizing objects and shapes</p> <p>3.3 Interpreting formulas for volume, areas, perimeters of plane and geometric figures</p> <p>3.4 Proper handling of measuring instruments</p>
<p>4. Resource implications</p>	<p>The following resources should be provided:</p> <p>4.1 Workplace location</p> <p>4.2 Problems to solve</p> <p>4.3 Measuring instrument appropriate to carry out tasks</p> <p>4.4 Instructional materials relevant to the propose activity</p> <p>Assessment of underpinning knowledge and practical skills may be combined</p>
<p>5. Methods of assessment</p>	<p>Competency should be assessed through:</p> <p>5.1 Actual demonstration</p> <p>5.2 Direct observation</p> <p>5.3 Written test/questioning related to underpinning knowledge</p>
<p>6. Context of assessment</p>	<p>6.1 Competency assessment may occur in workplace or any appropriate simulated environment</p> <p>6.2 Assessment shall be observed while task are being undertaken whether individually or in group</p> <p>6.3 Competency assessment must be undertaken in accordance with the TESDA assessment guidelines</p>

**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 tools and equipment based on the required performance standards.

<b>ELEMENTS</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Check condition of tools and equipment	1.1 <b>Materials, tools and equipment</b> 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 <b>PPE</b> are checked in accordance with manufacturer's instructions
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 OHSA regulations
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

## RANGE OF VARIABLES

VARIABLES	RANGE
1. Materials	Including but not limited to: 1.1 Lubricants 1.2 Cleaning materials 1.3 Rust remover 1.4 Rugs 1.5 Spare parts
2. Tools and equipment	Including but not limited to: <b>2.1 Tools</b> Cutting tools - hacksaw, crosscut saw, rip saw Boring tools - auger, brace, grinlet, hand drill Holding tools - vise grip, C-clamp, bench vise Threading tools - die and stock, taps  <b>2.2 Measuring instruments/equipment</b>
3. PPE	Including but not limited to: 3.1 Goggles 3.2 Gloves 3.3 Safety shoes 3.4 Aprons/Coveralls
4. Forms	4.1 Maintenance schedule forms 4.2 Requisition slip 4.3 Inventory Form 4.4 Inspection Form 4.5 Procedures

## EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Selected and used appropriate processes, tools and equipment to carry out task</li> <li>1.2 Identified functional and non-functional tools and equipment</li> <li>1.3 Checked, lubricated and calibrated tools, equipment and instruments according to manufacturer's specifications</li> <li>1.4 Replaced defective tools, equipment and their accessories</li> <li>1.5 Observed and applied safe handling of tools and equipment and safety work practices</li> <li>1.6 Prepared and submitted inventory report, where applicable</li> <li>1.7 Maintained workplace in accordance with OHSA regulations</li> <li>1.8 Stored tools and equipment safely in appropriate locations and in accordance with company practices</li> </ul>
<p>2. Underpinning knowledge</p>	<ul style="list-style-type: none"> <li>2.1 <b>SAFETY PRACTICES</b> <ul style="list-style-type: none"> <li>2.1.1 Use of PPE</li> <li>2.1.2 Handling of tools and equipment</li> <li>2.1.3 Good housekeeping</li> </ul> </li> <li>2.2 <b>MATERIALS, TOOLS AND EQUIPMENT</b> <ul style="list-style-type: none"> <li>2.2.1 Types and uses of lubricants</li> <li>2.2.2 Types and uses of cleaning materials</li> <li>2.2.3 Types and uses of measuring instruments and equipment</li> </ul> </li> <li>2.3 <b>PREVENTIVE MAINTENANCE</b> <ul style="list-style-type: none"> <li>2.3.1 Methods and techniques</li> <li>2.3.2 Procedures</li> </ul> </li> </ul>
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> <li>3.1 Preparing maintenance materials, tools and equipment</li> <li>3.2 Proper handling of tools and equipment</li> <li>3.3 Performing preventive maintenance</li> <li>3.4 Following instructions</li> </ul>
<p>4. Resource implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> <li>4.1 Workplace</li> <li>4.2 Maintenance schedule</li> <li>4.3 Maintenance materials, tools and equipment relevant to the proposed activity/task</li> </ul>
<p>5. Methods of assessment</p>	<p>Competency should be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Direct observation</li> <li>5.2 Written test/questioning relevant to Underpinning knowledge</li> </ul>
<p>6. Context of assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency assessment may occur in workplace or any appropriate simulated environment</li> <li>6.2 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines</li> </ul>

## CORE COMPETENCIES

**UNIT OF COMPETENCY** : **PREPARE MASONRY MATERIALS**

**UNIT CODE** : **CON712301**

**UNIT DESCRIPTOR** : This unit covers the knowledge, skills and attitudes in preparing mixtures used for masonry laying and surface plastering under supervision by a higher-level mason.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range of Variables
1. Select materials to be hauled	1.1 Appropriate <b><i>personal protective equipment (PPE)</i></b> is selected and used according to job requirements. 1.1 Work instruction is secured from immediate superior 1.2 Quantity of materials to be hauled is determined according to the instruction of immediate superior 1.4 Correct quantity and type of materials to be used are secured
2. Haul materials	2.1 Availability and serviceability of appropriate <b><i>hauling equipment</i></b> are checked as specified by the immediate superior 2.2 Materials are hauled based on work schedule as specified 2.3 Required materials are stockpiled based on instructions
3. Mix mortar/concrete	3.1 <b><i>Mixing tools and equipment</i></b> to be used are checked according to job requirements 3.2 Concrete or mortar mix and quantity is determined according to the instructions 3.3 Concrete or mortar is mixed according to the instructions 3.4 Mixed concrete or mortar is supplied to the appropriate personnel based on job requirements

## RANGE OF VARIABLES

VARIABLE	RANGE
1. PPE	1.1 Helmet 1.2 Safety shoes 1.3 Proper uniform 1.4 Gloves 1.5 Dust mask 1.6 Safety glass
2. Materials	May include but are not limited to: 2.1 Concrete hollow blocks 2.2 Bricks 2.3 Cement 2.4 Sand 2.5 Water 2.6 Reinforcing bars / GI wires 2.7 Concrete / CW nails 2.8 Lumber 2.9 Baluster 2.10 Lime 2.11 Fly ash
3. Hauling equipment	May include but not limited to: 3.1 Skid loader 3.2 Dumper 3.3 Material hoist 3.4 Pallet 3.5 Wheel borrow 3.6 Buggy
4. Mixing tools and equipment	4.1 One bagger mixer 4.2 Two bagger mixer 4.3 Mixing board 4.4 Shovel 4.5 Pails 4.6 Screen wire (2-3mm mesh) 4.7 Mixing box 4.8 Mortar bucket

## EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Demonstrated ability to identify correct quantity and type of materials and tools / equipment used in hauling</li> <li>1.2 Demonstrated ability to proper hauling and timely delivery of correct quantity of and type of materials</li> <li>1.3 Demonstrated ability to identify correct quantity and type of materials and tools / equipment used in mixing</li> <li>1.4 Demonstrated ability to use PPEs appropriately</li> </ul>
<p>2. Underpinning Knowledge</p>	<ul style="list-style-type: none"> <li>2.1 Knowledge of basic linear measurement and simple arithmetic</li> <li>2.2 Interpret and follow instructions properly</li> <li>2.3 Prevention of accidents</li> <li>2.4 Safe handling of materials, tools and equipment</li> <li>2.5 Housekeeping for safety</li> <li>2.6 Safety signs and symbols</li> <li>2.7 Types of concrete blocks, bricks, cement and aggregates</li> <li>2.8 Uses and types of mortar</li> <li>2.9 Types of masonry anchors, ties and reinforcements</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Working safely</li> <li>3.2 Organizing materials to be used</li> <li>3.3 Mixing mortar</li> <li>3.4 Proper handling and use of tools and equipment</li> <li>3.5 Communicating effectively</li> <li>3.6 Using basic arithmetic</li> </ul>
<p>4. Resource Implications</p>	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>4.1 Workplace location</li> <li>4.2 Tools, and equipment appropriate to masonry jobs</li> <li>4.3 Materials relevant to the masonry works</li> </ul>
<p>5. Methods of Assessment</p>	<p>Competency must be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Direct Observation on actual workplace</li> <li>5.2 Questions related to underpinning knowledge</li> <li>5.3 Third party report</li> <li>5.4 Demonstration on simulated situation</li> <li>5.5 Oral interview</li> </ul>
<p>6. Context for Assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency may be assessed in the workplace or in a simulated workplace setting</li> </ul>

**UNIT OF COMPETENCY : PERFORM BASIC MASONRY WORKS**

**UNIT CODE : CON712302**

**UNIT DESCRIPTOR :** This unit deals with the outcomes required to perform basic masonry work under supervision by a higher-level mason. It covers the skills required to perform basic re-bar fabrication such as cutting and bending, erecting and dismantling scaffolds (1.8m and below) perform for fabrication, and stripping, excavating, backfilling and compacting..

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Perform basic re-bar fabrication	1.1 appropriate PPE is selected and used according to job requirements 1.2 Steel bars are identified, measured, cut and bent as required 1.3 Cut and bent steel bars are segregated according to <b><i>steel type and size</i></b> 1.4 Basic fabrication of steel bars into wall footing, stiffener columns and lintel beams is performed following the re-bar cutting and bending schedule.
2. Erect and dismantle scaffolding (limited height)	2.1 <b><i>Components of scaffolding</i></b> are checked and verified based on job requirements 2.2 Scaffolding is erected in accordance with <b><i>safety practices</i></b> 2.3 Scaffolding is dismantled in accordance with safety practices 2.4 Components are inventoried and returned to stockpile area based on company rules and procedures
3. Fabricate and strip form works	3.1 <b><i>Form works materials</i></b> are identified, measured, cut and fabricated as required 3.2 Cut materials are segregated according to size 3.3 Basic fabrication of materials into forms for stiffener columns and lintel beams is performed following work instructions. 3.4 Form works are stripped following established procedures

<p>4. Perform excavation and back filling / compaction</p>	<p>4.1 Excavation work is performed based on <b>job specifications</b></p> <p>4.2 Excavated portion is filled with gravel base coarse</p> <p>4.3 Back filling and compaction are performed after concreting of wall footing.</p>
<p>5. Perform concreting work</p>	<p>5.1 Concreting of wall footing, columns and lintel beam based on line and grade is performed</p> <p>5.2 Consolidation of concrete by vibration is performed (use of vibrator, optional)</p>
<p>6. Perform housekeeping</p>	<p>6.1 Materials such as excess re-bars, scaffolding and form works are recovered and stockpiled according to company rules and procedures</p> <p>6.2 Flooring is protected by covering it during concrete hollow blocks / bricks laying and plastering</p> <p>6.3 Flooring is protected by using mixing board during manual mixing work.</p> <p>6.4 Workplace is cleaned and cleared of any obstructions and hazards before, during and after work</p> <p>6.5 Tools, equipment and other materials are cleaned after use</p>

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Steel type and size	1.1 Bar diameter (10, 12, 16 mm) 1.2 Grade of re-bar (40) 1.3 Type of bend
2. Components of scaffolding	May include but not limited to: 2.1 Steel <ul style="list-style-type: none"> <li>2.1.1 A/H frame</li> <li>2.1.2 Cross brace</li> <li>2.1.3 Joint pin</li> <li>2.1.4 Base jack</li> <li>2.1.5 Walking board</li> <li>2.1.6 Toe board</li> <li>2.1.7 Railing</li> <li>2.1.8 Tubular pipe</li> <li>2.1.9 Arm lock</li> </ul> 2.2 Wood <ul style="list-style-type: none"> <li>2.2.1 2 x 4 rough lumber</li> <li>2.2.2 2 x 2 rough lumber</li> <li>2.2.3 Wood planks</li> <li>2.2.4 Nails</li> </ul>
3. Safety practices	3.1 Standard PPE 3.2 Check the condition of the scaffold components 3.3 Provision of appropriate safety signs 3.4 Sufficient lighting for the workplace 3.5 Good housekeeping
4. Form work materials	4.1 Plywood 4.2 Rough lumber 4.3 Nails 4.4 Tie wire 4.5 Form oil 4.6 Tie rod / form tie
5. Job specifications	May include but not limited to: 5.1 Established lay-out 5.2 Soil condition 5.3 Required depth and width

## EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Demonstrated ability to produce the required quantity and quality of fabricated re-bars</li> <li>1.2 Demonstrated ability to produce the required quantity and quality of fabricated form panels through correct cutting of form work materials</li> <li>1.3 Demonstrated ability to erect and dismantle scaffold based on standard safety practices</li> <li>1.4 Demonstrated ability to excavate, backfill and compact soil according to the required width and depth</li> <li>1.5 Demonstrated ability to mix concrete, mortar and grout that conform with the quality requirements</li> <li>1.6 Demonstrated knowledge on the importance of proper housekeeping by cleaning and clearing the work place from any obstructions and safety hazards</li> </ul>
<p>2. Underpinning Knowledge</p>	<ul style="list-style-type: none"> <li>2.1 Basic linear measurement and simple arithmetic</li> <li>2.2 Interpret and follow instructions</li> <li>2.3 Prevention of accidents</li> <li>2.4 Safe handling of materials, tools and equipment</li> <li>2.5 Housekeeping for safety</li> <li>2.6 Safety signs and symbols</li> <li>2.7 Rules on safe erection, use and dismantling of scaffolds (1.8 m and below)</li> <li>2.8 Types of masonry anchors, ties and reinforcements</li> <li>2.9 Form works and platforms</li> <li>2.10 Scaffoldings construction elements and materials</li> <li>2.11 Fabrication of form works and re-bars</li> <li>2.12 Concrete, mortar and grout mix</li> <li>2.13 Excavation, back filling and compaction</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Working safely</li> <li>3.2 Organizing materials to be used</li> <li>3.3 Installing and dismantling scaffolds</li> <li>3.4 Proper handling and use of tools and equipment</li> <li>3.5 Communicating effectively</li> <li>3.5 Applying basic arithmetic</li> <li>3.6 Using PPE</li> <li>3.7 Basic concreting</li> </ul>

<p>4. Resource Implications</p>	<p>The following resources must be provided:</p> <p>4.1 Workplace location</p> <p>4.2 Tools, and equipment appropriate to scaffold, re-bars and form works</p> <p>4.3 Materials relevant to scaffold, re-bars and form works</p>
<p>5. Methods of Assessment</p>	<p>Competency must be assessed through:</p> <p>5.1 Direct Observation on actual workplace</p> <p>5.2 Questions related to underpinning knowledge</p> <p>5.3 Third party report</p> <p>5.4 Demonstration on simulated situation</p> <p>5.5 Interview</p>
<p>6. Context for Assessment</p>	<p>6.4 Competency may be assessed in the workplace or in a simulated workplace setting</p>

**UNIT OF COMPETENCY : LAY BRICK/BLOCK FOR STRUCTURE**

**UNIT CODE : CON712303**

**UNIT DESCRIPTOR :** This unit covers the outcomes required to lay bricks / blocks for structure. It includes the skills in establishing brick / block structure location, performing brick / block laying and curing.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Lay-out / establish bricks / blocks structure location	1.1 Plans are read and interpreted as per job requirements. 1.2 Appropriate <b>PPE</b> is selected and used in line with job requirements. 1.3 <b>Materials, tools and equipment</b> are selected and prepared consistent with the job requirements 1.4 Reference building lines are correctly identified / located as per job requirements 1.5 Location of <b>brick / block structure</b> based on reference building lines is established using batterboard at +-3mm tolerance for proper alignment, squareness and dimension. 1.6 Horizontal / vertical guide for brick / block is installed according to job specifications. 1.7 Lay-out of brick / block structure is correctly marked as per job requirements
2. Perform laying brick / block for structure	2.1 Bricks and concrete block laid on the line at minimum allowance of 1/16inch (2mm) 2.2 Reinforcing bar / dowel is installed according to required job specifications 2.3 Mortars are spread on the base / edge of brick / block mortar according to job specifications 2.4 Bricks / blocks are positioned / laid according to design / specifications / locations 2.5 Constant checking of plumbness is done during brick / block laying. 2.6 Form works are installed in accordance with building plan, if necessary 2.7 Cast-in place concrete structures are constructed according to design and job specifications. 2.8 Work site is cleaned and kept in safe state in line with OSHC requirements

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range of Variables
3. Complete work / curing	<p>4.1 <b><i>Final checks</i></b> are made to ensure that work conforms with instructions, curing and other requirements</p> <p>4.2 Completed work is reported to the Foreman for final checking</p> <p>4.3 Tools, equipment and any surplus resources and materials are checked and monitored in accordance with established procedures</p> <p>4.4 Work area is maintained as to its cleanliness and safety</p>

## RANGE OF VARIABLES

VARIABLE	RANGE
1. PPE	1.1 Safety shoes 1.2 Safety goggles 1.3 Safety gloves 1.4 Safety helmet 1.5 Dust mask 1.6 Body harness as required 1.7 Safety belt 1.8 Proper clothes (long sleeves and long pants)
2. Materials	2.1 String or nylon cord 2.2 Concrete / CW nails 2.3 Lumber 2.4 Water 2.5 Mortar
3. Tools and equipment	3.1 Pail 3.2 Mortar box 3.3 Pointed trowel 3.4 Wooden float 3.5 Nylon string 3.6 Steel tape / push-pull rule 3.7 Mason hammer (piketa) 3.8 Plumb bob 3.9 Scaffolding 3.10 Pencil 3.11 Hand saw 3.12 Manual bender 3.13 Tie wire 3.14 Steel square 3.15 Hacksaw 3.16 Level hose 3.17 Spirit level 3.18 Mortar bucket 3.19 One-bagger mixer 3.20 Chalk line

VARIABLE	RANGE
4. Brick/block structures	Including but not limited to: 3.1 Stiffener columns 3.2 Lintel beams 3.3 Wall footing 3.4 Walls (exterior, interior and parapet, etc.) 3.5 Fireplace 3.6 Chimneys 3.7 Septic vaults
5. Final checks	5.1 Plumbness 5.2 Levelness 5.3 Squareness 5.4 Flatness / evenness of surface

## EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Correctly interpreted and identified plans and details</li> <li>1.2 Prepared and selected materials, tools and equipment consistent with the specifications and job requirements</li> <li>1.3 Located brick/block structure based on reference building lines for proper alignment, squareness and dimension</li> <li>1.4 Performed / laid-out brick/block for structure in accordance with required plumbness, levelness and squareness.</li> <li>1.5 Demonstrated compliance with safety regulations applicable to work site operations</li> <li>1.6 Identified, minimized and eliminated safety hazards</li> <li>1.7 Erected scaffold as per job requirement (max. height 1.8 m)</li> <li>1.7 Unexpected situations are responded accordingly.</li> </ul>
<p>2. Underpinning Knowledge</p>	<ul style="list-style-type: none"> <li>2.1 <b>SAFE WORK PRACTICES AND FIRST AID REGULATIONS</b> <ul style="list-style-type: none"> <li>2.1.1 Prevention of accidents</li> <li>2.1.2 First aid treatments and regulations</li> <li>2.1.3 Safe handling of materials, tools and equipment</li> <li>2.1.4 Housekeeping for safety</li> <li>2.1.5 Safety signs and symbols</li> <li>2.1.6 Rules on the safe use of scaffolds and ladders</li> </ul> </li> <li>2.2 <b>TRADE MATHEMATICS AND MENSURATION</b> <ul style="list-style-type: none"> <li>2.2.1 Linear measurements</li> <li>2.2.2 Fundamental operations of Mathematics (4 Basic Operations)</li> <li>2.2.3 System of measurement / Metric system of measurement</li> </ul> </li> <li>2.3 <b>BLUEPRINT AND SPECIFICATIONS READING</b> <ul style="list-style-type: none"> <li>2.3.1 Interpret blueprints</li> <li>2.3.2 Composition, properties, uses and size of clay and masonry</li> <li>2.3.3 Materials</li> <li>2.3.4 Basic structural bonds and joints</li> <li>2.3.5 Classification of concrete masonry units</li> <li>2.3.6 Properties of concrete block</li> <li>2.3.7 Materials use and specification</li> </ul> </li> <li>2.4 <b>MATERIALS</b> <ul style="list-style-type: none"> <li>2.4.1 Types and uses of mortar</li> <li>2.4.2 Masonry ties and reinforcements</li> <li>2.4.3 Types of masonry anchors, ties and reinforcements</li> <li>2.4.4 Form works and platforms</li> <li>2.4.5 Scaffolding construction elements and materials</li> </ul> </li> </ul>

	<p><b>2.5 TRADE THEORY</b> 2.5.1 Basic carpentry</p> <p><b>2.6 MASONRY TOOLS AND EQUIPMENT</b> 2.6.1 Types and uses of trowels 2.6.2 Chipping tools 2.6.3 Measuring and testing tools 2.6.4 Use of power cutter 2.6.5 Masonry saw 2.6.6 Proper use of hand tools</p> <p><b>2.7 MASONRY PROCESS</b> 2.7.1 Knowledge of masonry processes 2.7.2 Good housekeeping 2.7.3 Economic use of material</p>
3. Underpinning Skills	<p>3.1 Following work practices and first aid regulations 3.2 Applying trade math and mensuration 3.3 Interpreting blueprint and specifications 3.4 Using materials, tools and equipment 3.5 Applying trade theory 3.6 Performing laying of brick / blocks processes</p>
4. Resource Implications	<p>The following resources must be provided: 4.1 Workplace location 4.2 Tools and equipment appropriate to construction processes 4.3 Scaffolding and form works required for activity 4.4 Drawings and specifications relevant to the task 4.5 Basic PPE</p>
5. Methods of Assessment	<p>Competency must be assessed through: 5.1 Direct Observation 5.2 Questions related to underpinning knowledge 5.3 Interview 5.4 Portfolio</p>
6. Context for Assessment	<p>6.1 Competency may be assessed in the workplace or in a simulated workplace setting</p>

**UNIT OF COMPETENCY : PLASTER CONCRETE/MASONRY SURFACE**

**UNIT CODE : CON712304**

**UNIT DESCRIPTOR :** This unit covers the knowledge, skills and attitudes in plastering concrete / masonry surface. It includes skills required for preparing concrete / masonry surfaces for plastering and performing plastering work.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Prepare concrete / masonry surfaces for plastering	1.1 Appropriate <b>PPE</b> is selected and used according to job requirements. 1.2 Plans and details are interpreted as per job requirements 1.3 <b>Materials, tools and equipment</b> are selected and prepared in line with job requirements 1.4 Materials are properly staged/stockpiled at designated workplace and must be free from any foreign matters 1.5 Wall surface preparation is performed according to establish plastering procedure
2. Perform plastering work	2.1 Limits of plastering are determined to establish required thickness, plumbness, squareness, levelness and alignment of structure 2.2 Plastering wall is performed according to job requirements 2.3 Distribution of mortar / coating is applied on the wall surface evenly 2.4 Work site is cleaned and kept in safe state in accordance with OHS regulations
3. Complete plastering work / curing	4.1 <b>Final Checks</b> are made to ensure that work conforms with instructions, curing and other job requirements 4.2 Inform immediate superior upon completion of work 4.3 Tools, equipment and any surplus resources and materials are checked and monitored in accordance with established procedures 4.4 Work area is maintained of its cleanliness and safety

## RANGE OF VARIABLES

VARIABLE	RANGE
1. PPE	1.1 Safety goggles 1.2 Safety shoes 1.3 Working Gloves 1.4 Dust mask 1.5 Safety belt 1.6 Safety helmet 1.7 Proper working clothes
2. Materials	May include but are not limited to : 2.1 Mortar 2.2 Plastering guide 2.3 String or nylon cord 2.4 Concrete and CW nails 2.5 Water
3. Tools and equipment	May include but are not limited to : 3.1 Mason's hammer 3.2 Scaffolding 3.3 Steel tape / push-pull rule 3.4 Plumb bob 3.5 Leveling tools (leveling hose, spirit level) 3.6 Pail 3.7 Mortar box 3.8 Pointed trowel 3.9 Wooden float 3.10 Steel float 3.11 Shovel 3.12 Foam / paper 3.13 Straight edge / screed (bara) 3.14 Mason's brush 3.15 Claw hammer
4. Final checks	4.1 Plumbness 4.2 Levelness 4.3 Squareness 4.4 Evenness or flatness of surface

## EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Correctly interpreted and identified plans and details</li> <li>1.2 Performed concrete / masonry surface preparation in accordance with established plastering procedure</li> <li>1.3 Performed plastering works consistent with established plastering procedure</li> <li>1.4 Demonstrated compliance with safety regulations applicable to work site operations</li> <li>1.5 Demonstrated ability to produce quality of plastering works</li> <li>1.6 Demonstrated ability to erect and dismantle scaffolds</li> <li>1.7 Identified, minimized and eliminated safety hazards</li> <li>1.8 Communicated interactively with others when applicable to ensure safe and effective work operations</li> <li>1.9 Completed plastering concrete / masonry surface according to job specifications</li> </ul>
<p>Underpinning Knowledge</p>	<ul style="list-style-type: none"> <li>2.1 <b>SAFE WORK PRACTICES AND FIRST AID REGULATIONS</b> <ul style="list-style-type: none"> <li>2.1.1 Prevention of accidents</li> <li>2.1.2 Knows to do when accidents occur</li> <li>2.1.3 First aid treatments and regulations</li> <li>2.1.4 Safe handling of materials, tools and equipment</li> <li>2.1.5 Housekeeping for safety</li> <li>2.1.6 Safety signs and symbols</li> <li>2.1.7 Rules on the safe use of scaffolds and ladders</li> </ul> </li> <li>2.2 <b>TRADE MATHEMATICS AND MENSURATION</b> <ul style="list-style-type: none"> <li>2.2.1 Linear measurements</li> <li>2.2.2 Fundamental operations of mathematics</li> <li>2.2.3 System of measurement/Metric system of measurement</li> </ul> </li> <li>2.3 <b>BLUEPRINT AND SPECIFICATIONS READING</b> <ul style="list-style-type: none"> <li>2.3.1 Interpret Blueprints / Plans &amp; Drawings</li> <li>2.3.2 Composition, properties / types, uses and sizes of plastering</li> </ul> </li> <li>2.4 <b>MATERIALS</b> <ul style="list-style-type: none"> <li>2.4.1 Types / uses of Mortar</li> <li>2.4.2 Scaffoldings construction elements and materials</li> </ul> </li> <li>2.5 <b>TRADE THEORY</b> <ul style="list-style-type: none"> <li>2.5.1 Plastering proportion &amp; procedures</li> </ul> </li> <li>2.6 <b>MASONRY TOOLS AND EQUIPMENT</b> <ul style="list-style-type: none"> <li>2.6.1 Types and uses of trowels</li> <li>2.6.2 Measuring and testing tools</li> <li>2.6.3 Types and uses of brick hammers</li> </ul> </li> <li>2.7 <b>MASONRY PROCESS</b> <ul style="list-style-type: none"> <li>2.7.1 Methods of Plastering Works</li> <li>2.7.2 Economic use of material</li> </ul> </li> </ul>

3. Underpinning Skills	<ul style="list-style-type: none"> <li>3.1 Following safe work practices</li> <li>3.2 Applying trade Math and mensuration</li> <li>3.3 Interpreting blueprint and specification</li> <li>3.4 Using materials, tools and equipment</li> <li>3.5 Applying trade theory</li> <li>3.6 Performing plastering processes</li> </ul>
4. Resource Implications	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>4.1 Workplace location / simulated workplace setting</li> <li>4.2 Tools and equipment appropriate to construction processes</li> <li>4.3 Scaffolding/ form works /rebars required for activity</li> <li>4.4 Masonry materials relevant to the proposed activity</li> <li>4.5 Drawings/plans and specifications relevant to the task</li> </ul>
5. Methods of Assessment	<p>Competency must be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Direct Observation</li> <li>5.2 Interview</li> <li>5.3 Portfolio</li> <li>5.4 Third Party Report</li> <li>5.5 Demonstration</li> </ul>
6. Context for Assessment	<ul style="list-style-type: none"> <li>6.1 Competency may be assessed in the workplace or in a simulated workplace setting</li> </ul>

**UNIT OF COMPETENCY : INSTALL PRE-CAST BALUSTER AND HANDRAILS**

**UNIT CODE : CON712305**

**UNIT DESCRIPTOR :** This unit describes the outcomes required to install pre-cast baluster and handrail. It covers the skills required to prepare and install pre-cast baluster and handrail and for preparing completion work report.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Lay-out / establish pre-cast baluster and handrail location	1.1 Appropriate <b>PPE</b> is selected and used according to job requirement 1.2 Plans and details are interpreted as per job requirements 1.3 <b>Materials, tools and equipment</b> are prepared and selected consistent with job requirements 1.4 Pre-cast baluster and handrail is marked in accordance with job requirements
2. Perform pre-cast baluster and handrail installation	2.1 Pre-cast baluster and handrail are laid-out, aligned and secured according to job requirements 2.2 Mortar is applied to pre-cast baluster and handrail according to job requirements 2.3 Worksite is cleaned and kept in safe state in line with OHS regulations
3. Complete installation of pre-cast baluster and handrail work and curing	3.1 <b>Final Checks</b> are made to ensure that work conforms with instructions, curing and other job requirements. 3.2 Inform immediate superior upon completion of work 3.3 Tools, equipment and any surplus resources and materials are checked and monitored in accordance with established procedures 3.4 Work area is maintained of its cleanliness and safety

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Materials	May include but are not limited to: 1.1 G.I. wires 1.2 Reinforcing bars 1.3 Form work materials 1.4 Water 1.5 Strings or nylon cord 1.6 Concrete and CW nails 1.7 Lumber
2. Tools and equipment	May include but are not limited to: 2.1 Push-pull rule 2.2 Steel square 2.3 Leveling tools ( levelling hose , spirit level) 2.4 Plumb bob 2.5 Mason's hammer 2.6 Pencil 2.7 Pointed trowel 2.8 Shovel 2.9 Mortar box 2.10 Hacksaw / bar cutter 2.11 Finishing Trowel 2.12 Steel float 2.13 Chalk line
3. PPE	May include but are not limited to: 3.1 Safety goggles 3.2 Safety shoes 3.3 Safety gloves 3.4 Safety belt / body harness 3.5 Safety Helmet 3.6 Proper working clothes
4. Final checks	4.1 Plumbness 4.2 Levelness 4.3 Squareness 4.4 Alignment of balusters

## EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Interpreted plans and details according to job requirements</li> <li>1.2 Prepared and selected materials consistent with the job requirements</li> <li>1.3 Laid out and established location of pre-cast baluster and in accordance with job requirements</li> <li>1.4 Installed pre-cast baluster and handrail consistent with the job requirements</li> <li>1.5 Demonstrated compliance with safety regulations applicable to work site operations</li> <li>1.6 Demonstrated ability to produce quality installation works</li> <li>1.7 Erected scaffoldings (if needed) in accordance with OHSC regulation</li> </ul>
<p>2. Underpinning Knowledge</p>	<ul style="list-style-type: none"> <li>2.1 <b>SAFE WORK PRACTICES AND FIRST AID REGULATIONS</b> <ul style="list-style-type: none"> <li>2.1.1 Prevention of accidents</li> <li>2.1.2 Appropriate actions to take when accidents occur</li> <li>2.1.3 First aid treatments and regulations</li> <li>2.1.4 Safe handling of materials, tools and equipment</li> <li>2.1.5 Housekeeping for safety</li> <li>2.1.6 Safety signs and symbols</li> <li>2.1.7 Rules on the safe use of scaffolds and ladders</li> </ul> </li> <li>2.2 <b>TRADE MATHEMATICS AND MENSURATION</b> <ul style="list-style-type: none"> <li>2.2.1 Linear measurements</li> <li>2.2.2 Fundamental operations of Mathematics</li> </ul> </li> <li>2.3 <b>BLUEPRINT AND SPECIFICATIONS READING</b> <ul style="list-style-type: none"> <li>2.3.1 Interpret blueprints / plans &amp; drawings</li> </ul> </li> <li>2.4 <b>MATERIALS</b> <ul style="list-style-type: none"> <li>2.4.1 Types and uses of pre-cast baluster and handrail</li> <li>2.4.2 Form works and platforms</li> <li>2.4.3 Scaffoldings construction elements and materials</li> </ul> </li> <li>2.5 <b>TRADE THEORY</b> <ul style="list-style-type: none"> <li>2.5.1 Basic carpentry</li> <li>2.5.2 Basic re-bar work</li> </ul> </li> <li>2.6 <b>MASONRY TOOLS AND EQUIPMENT</b> <ul style="list-style-type: none"> <li>2.6.1 Types and uses of trowels</li> <li>2.6.2 Measuring tools</li> <li>2.6.3 Proper use of hand tools</li> </ul> </li> <li>2.7 <b>MASONRY PROCESS</b> <ul style="list-style-type: none"> <li>2.7.1 Methods of Installation of pre-cast baluster and handrail</li> <li>2.7.2 Curing processes</li> </ul> </li> </ul>

3. Underpinning Skills	3.1 Following safe work practices and first aid regulations 3.2 Applying trade Math and mensuration 3.3 Interpreting blueprint and specifications 3.4 Using materials, tools and equipment 3.5 Applying trade theory 3.6 Following instalation of pre-cast baluster and handrail
4. Resource Implications	The following resources must be provided: 4.1 Workplace location / simulated workplace setting 4.2 Tools and equipment appropriate to construction processes 4.3 Scaffolding / form works / rebars required for activity 4.4 Masonry materials relevant to the proposed activity 4.5 Drawings / plans and specifications relevant to the task
5. Methods of Assessment	Competency must be assessed through: 5.1 Direct Observation 5.2 Interview 5.3 Portfolio 5.4 Third Party Report 5.5 Demonstration
6. Context for Assessment	6.1 Competency may be assessed in the workplace or in a simulated workplace setting

## SECTION 3 TRAINING STANDARDS

These guidelines are set to provide the Technical and Vocational Education and Training (TVET) providers with information and other important requirements to consider when designing training programs for **Masonry NC Level II**.

### 3.1 CURRICULUM DESIGN

**Course Title: Masonry NC Level II**

**Nominal Training Hours:**        **18 hours (Basic)**  
    **24 hours (Common)**  
    **216 hours (core)**

**Course Description:**

This course is designed to enhance the knowledge, skills and attitudes of mason in accordance with industry standards. It covers the basic, common and core competencies in masonry.

#### BASIC COMPETENCIES

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Participate in workplace communication	1.1 Obtain and convey workplace information. 1.2 Complete relevant work related documents. 1.3 Participate in workplace meeting and discussion.	Group discussion  Interaction	Demonstration Observation Interviews/ questioning
2. Work in a team environment	2.1 Describe and identify team role and responsibility in a team. 2.2 Describe work as a team member.	Discussion  Interaction	Demonstration Observation Interviews/ questioning
3. Practice career professionalism	3.1 Integrate personal objectives with organizational goals. 3.2 Set and meet work priorities. 3.3 Maintain professional growth and development.	Discussion  Interaction	Demonstration Observation Interviews/ questioning
4. Practice occupational health and safety	4.1 Evaluate hazard and risks 4.2 Control hazards and risks 4.3 Maintain occupational health and safety awareness	Discussion  Plant tour  Symposium	Observation Interview

## COMMON COMPETENCIES

### SECTOR : CONSTRUCTION

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Prepare construction materials and tools	1.1 Identify Materials 1.2 Requisition Materials 1.3 Receive and inspect materials	Audio Visual Simulation Discussion Practical Exercise Demonstration	Direct observation Questions or interview Portfolio (credentials) Written / Oral Test Demonstration
2. Observe procedures, Specifications and Manuals of Instructions	2.1 Identify and access specification/ manuals	Audio Visual Simulation Discussion Practical Lab Demonstration	Direct observation Oral questioning Written test or examination Third party report Demonstration (able to impart knowledge and skills)
3. Perform mensurations and calculation	3.1 Select measuring instruments 3.2 Carry out measurements and calculations	Audio Visual Simulation Discussion Practical Lab Demonstration	Direct observation Oral questioning Written test or examination Third party report Demonstration (able to impart knowledge and skills)
4. Maintain tools and equipment	4.1 Check condition of tools and equipment 4.2 Perform basic preventive maintenance 4.3 Sharpen edge and tooth cutting tools 4.4 Store tools and equipment	Audio Visual Simulation Discussion Practical Lab Demonstration	Direct observation of application of tasks. Oral questioning Written test or examination Third party report Demonstration

## CORE COMPETENCIES

The core competencies for Masonry NC II covers the units of competency such as lay brick/block for structure, plaster concrete/masonry surface and install pre-cast baluster and handrails.

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Lay brick/block for structure	<ol style="list-style-type: none"> <li>1. Identify and explain the uses of tools and equipment in brick/block laying.</li> <li>2. Identify and explain the composition, properties, uses and types of masonry materials.</li> <li>3. Enumerate and explain the various methods and processes in masonry construction.</li> <li>4. Identify and interpret drawing symbols and plans.</li> <li>5. Perform trade mathematics and mensuration.</li> <li>6. Perform 5S.</li> <li>7. Identify and describe safework practices and first aid regulations.</li> <li>8. Perform safe work practices and respond to emergency situations.</li> <li>9. Install/dismantle scaffold.</li> <li>10. Install and mark batterboards.</li> <li>11. Install reinforcing bar/dowel.</li> <li>12. Lay brick/block.</li> <li>13. Check for plumbness/ squareness.</li> <li>14. Construct/cast-in place concrete structures.</li> <li>15. Check all brick/block and concrete works for quality.</li> <li>16. Clean work site and maintain</li> </ol>	Lecture Demonstration On-the-Job Dual training Project-based instruction	<ul style="list-style-type: none"> <li>• Observation and oral questioning</li> <li>• Demonstration and oral questioning</li> <li>• Written test</li> </ul>

	tools and equipment.		
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Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
2. Plaster concrete/masonry surface	<ol style="list-style-type: none"> <li>1. Identify and explain the uses of tools and equipment in plastering concrete surface.</li> <li>2. Identify and explain the materials used in plastering</li> <li>3. Identify and explain the use of masonry anchors, ties and reinforcements.</li> <li>4. Identify and interpret drawing symbols and plans.</li> <li>5. Perform trade mathematics and mensuration.</li> <li>6. Perform 5S.</li> <li>7. Identify and describe safety practices and first aid regulations in plastering.</li> <li>8. Perform safe work practices and respond to emergency situations.</li> <li>9. Install/dismantle scaffold.</li> <li>10. Establish plumbness and squareness of surface.</li> <li>11. Plaster wall.</li> <li>12. Check all plastered wall/s.</li> <li>13. Clean work site and maintain tools and equipment.</li> </ol>	<p>Lecture</p> <p>Demonstration</p> <p>On-the-Job</p> <p>Dual training</p> <p>Project-based instruction</p>	<ul style="list-style-type: none"> <li>• Observation and oral questioning</li> <li>• Demonstration and oral questioning</li> <li>• Written test</li> </ul>
3. Install pre-cast baluster and handrails	<ol style="list-style-type: none"> <li>1. Identify and explain the uses of tools and equipment in installing pre-cast baluster/handrails.</li> <li>2. Identify and explain the materials used in installing pre-cast baluster/handrails.</li> <li>3. Enumerate the methods of installing pre-cast baluster and handrails.</li> <li>4. Identify and interpret drawing symbols and plans.</li> <li>5. Perform trade mathematics and mensuration.</li> </ol>	<p>Lecture</p> <p>Demonstration</p> <p>On-the-Job</p> <p>Dual training</p> <p>Project-based instruction</p>	<ul style="list-style-type: none"> <li>• Observation and oral questioning</li> <li>• Demonstration and oral questioning</li> <li>• Written test</li> </ul>

	<ol style="list-style-type: none"> <li>6. Perform 5S.</li> <li>7. Identify and describe safe work practices and first aid regulations in installing pre-cast baluster and handrails.</li> <li>8. Perform safework practices and respond to emergency situation.</li> <li>9. Lay out and mark the location of pre-cast baluster/handrails.</li> <li>10. Install baluster/ handrails.</li> <li>11. Check all installed baluster/handrails.</li> <li>12. Clean work site and maintain tools and equipment.</li> </ol>		
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### 3.2 TRAINING DELIVERY

The delivery of training should adhere to the design of the curriculum. Delivery should be guided by the 10 basic principles of competency-based TVET.

- The training is based on curriculum developed from the competency standards;
- Learning is modular in its structure;
- Training delivery is individualized and self-paced;
- Training is based on work that must be performed;
- Training materials are directly related to the competency standards and the curriculum modules;
- Assessment is based in the collection of evidence of the performance of work to the industry required standard;
- Training is based both on and off-the-job components;
- Allows for recognition of prior learning (RPL) or current competencies;
- Training allows for multiple entry and exit; and
- Approved training programs are Nationally Accredited

The competency-based TVET system recognizes various types of delivery modes, both on and off-the-job as long as the learning is driven by the competency standards specified by the industry. The following training modalities may be adopted when designing training programs:

- The dualized mode of training delivery is preferred and recommended. Thus programs would contain both in-school and in-industry training or fieldwork components. Details can be referred to the Dual Training System (DTS) Implementing Rules and Regulations.
- Modular/self-paced learning is a competency-based training modality wherein the trainee is allowed to progress at his own pace. The trainer just facilitates the training delivery.
- Peer teaching/mentoring is a training modality wherein fast learners are given the opportunity to assist the slow learners.
- Supervised industry training or on-the-job training is an approach in training designed to enhance the knowledge and skills of the trainee through actual experience in the workplace to acquire specific competencies prescribed in the training regulations.
- Distance learning is a formal education process in which majority of the instruction occurs when the students and instructor are not in the same place. Distance learning may employ correspondence study, audio, video or computer technologies.

### **3.3 TRAINEE ENTRY REQUIREMENTS**

Trainees or students wishing to gain entry into this course should possess the following requirements:

- can communicate either oral and written
- physically and mentally fit
- with good moral character
- can perform basic mathematical computation and mensuration

### 3.4 LIST OF TOOLS,EQUIPMENT AND MATERIALS

Recommended list of tools, equipment and materials for the training of 25 trainees for **Masonry NC Level II**.

TOOLS		EQUIPMENT		MATERIAL	
Qty.	Description	Qty.	Description	Qty.	Description
10 pcs.	Bucket	1 unit	One bagger mixer	625 pcs.	Concrete Hollow blocks
1 pc	Mixing board	25 sets	PPE	4450 pcs.	Bricks
12 pcs.	Shovel	1 set	Automatic level (optional)	20 bags	Cement
25 pcs.	Steel trowel	1 unit	Welding machine	6 m <sup>3</sup>	Sand
25 pcs.	Wooden float	2 pcs.	Portable Grinder	50 pcs.	Reinforcing bars (10 mm dia)
25 pcs.	Steel tape	2 pcs.	Hammer drill		Water
6 pcs.	Mason hammer	2 pcs.	Electric drill	40 kls.	GI wire
6 pcs.	Plumb bob			10 kls.	Common wire Nails (assorted sizes)
1 set	Scaffolding			100 pcs.	Lumber(2" x 2" x 10')
6 pcs.	Marking gauge			5 kls.	Concrete nails
6 pcs.	Hand saw			10 bags	Lime
2 pcs.	Bar cutter			10 bags	Fly ash
2 pcs.	Bar bender			25 pcs.	Pencil
4 pcs.	Steel square			5 kls.	Nylon string
25 pcs.	Cold chisel			6 m <sup>3</sup>	Gravel
12 pcs.	Hacksaw			5 m	Sand Screen 100mm
6 pcs.	Level hose			5 gals.	Concrete neutralizer
25 pcs.	Straight edge			9 pcs	Plywood ½" X 4' X 8'
6 pcs.	Spirit level			12 pcs.	Handrails 3"x4"x8"
25 pcs.	Claw hammer			50 pcs.	5"x5" pre-cast baluster
25 pcs.	Chalk line				
25 pcs.	Steel float				
4 pcs.	Measuring box				

2 dozen	Hack saw blade				
5 kls.	Welding rod				
12 pcs.	Tri-square				
25 pcs.	Steel brush				
4 pcs.	Wheel borrow				
25 pcs.	4" Paint Brush				
25 pcs.	2" Paint Brush				
12 pcs.	Claw bar				
4 pcs.	Sledge hammer				
20 meters	Rope 1" dia.				
4 pcs.	Pulley				
1 set	Drill bits				

**NOTE:** Estimate of materials was based on an individual project of a 1m X 2m wall with 8" X 8" X 1m concrete post hence, the kind and quantity of materials will vary accordingly on the type of projects designed.

### 3.5 TRAINING FACILITIES

#### Masonry NC – II

The masonry workshop must be of concrete structure. Based on class size of 25 students/trainees the space requirements for the teaching/learning and circulation areas are as follows:

TEACHING/LEARNING AREAS	SIZE IN METERS	AREA IN SQ. METERS	TOTAL AREA IN SQ. METERS
Open plain ground	25 X 25		625
Lecture Room (job site/school) including wash area			62.5
<b>Total Workshop Area</b>			<b>687.50</b>

### **3.6 TRAINERS QUALIFICATIONS FOR**

#### **Masonry NC II**

##### **TRAINER QUALIFICATION (TQ II)**

- Must be a holder of NC III or its equivalent qualification
- Must have undergone training on Training Methodology II (TM II) or have attended any trainer training methodology course accredited by TESDA or graduate of any education course
- Must be physically and mentally fit
- Must have at least 2 years job/industry experience

*Reference: TESDA Board Resolution No. 2004 03*

### **3.7 INSTITUTIONAL ASSESSMENT**

Institutional assessment is undertaken by trainees to determine their achievement of units of competency. A certificate of achievement is issued for each unit of competency.

## **SECTION 4 NATIONAL ASSESSMENT AND CERTIFICATION ARRANGEMENTS**

- 4.1. To attain the National Qualification of Masonry NC II, the candidate must demonstrate competence through project-type assessment covering all the units listed in Section 1. Successful candidates shall be awarded a National Certificate signed by the TESDA Director General.
- 4.2. The qualification of Masonry NC II maybe attained through:
  - 4.2.1 Accumulation of Certificates of Competency (COCs) in the following areas:
    - 4.2.1.1 Prepare masonry materials
    - 4.2.1.2 Perform basic masonry work
    - 4.2.1.3 Lay bricks / blocks for structure
    - 4.2.1.4 Plaster concrete / masonry surface
    - 4.2.1.5 Install pre-cast balusters and handrail

Successful candidates shall be awarded Certificates of Competency (COCs)
  - 4.2.2 Demonstration of competence through project-type assessment covering all required units of the qualification
- 4.3. Assessment shall focus on the core units of competency. The basic and common units shall be integrated or assessed concurrently with the core units.
- 4.4. The following are qualified to apply for assessment and certification:
  - 4.3.1 Graduates of formal, non-formal and informal including enterprise-based training programs
  - 4.3.2. Experienced Workers (wage employed or self-employed)
- 4.5. The guidelines on assessment and certification are discussed in detail in the Procedures Manual on Assessment and Certification and guidelines on the Implementation of the Philippine TVET Qualification and Certification System (PTQCS).

# COMPETENCY MAP

## CONSTRUCTION - CIVIL WORKS SUB-SECTOR

# MASONRY

<b>CORE COMPETENCIES</b>	Repairs defective concrete and masonry surfaces	<b>Perform basic masonry</b>	<b>Lay brick/ block for structures</b>	<b>Plaster concrete/ masonry</b>	<b>Install pre-cast ballusters and handrails</b>	<b>Prepare masonry materials</b>	Prepare tools, painting materials and equipment	Prepare Surface for Painting
	Apply special cement finishes to concrete and masonry surfaces	Estimate Paint Requirements	Perform Painting Works	Stake-out Building Lines	Fabricate Formworks	Install Formwork Components	Strip Formwork Components	Install Framing Works
	Perform Single Unit Plumbing Installation and Assemblies	Perform Minor Construction Works	Install architectural ceiling, wall sheats/panels/ boards and floor	Fabricate/Install Door/Window Jambes and Panels	Install stair components and/or pre-fabricated stair assembly	Install built-in and/or pre-fabricated cabinets	Perform Mixing/Tinting of Color Paints	Perform Painting Repair Work
	Perform Complex and Multi-Story Plumbing Installation and Assemblies	Perform Plumbing Repair and Maintenance Works	Conduct Pipe Leak Testing	Make Piping Joints and	Install Hot and Potable Chilled Water Piping System	Prepare Pipes for Installation	Draft Plumbing Design	
<b>COMMON COMPETENCIES</b>	<b>Prepare construction Materials and Tools</b>	<b>Observe Procedures, Specifications and Manuals of Instructions</b>	<b>Maintain Tools and Equipment</b>	<b>Perform Mensurations and Calculations</b>	<b>Interpret Technical Drawings and Plans</b>			
<b>BASIC COMPETENCIES</b>	Receive and Respond to workplace communication	Work with others	Demonstrate work	<b>Participate workplace communication</b>	<b>Work in team environment</b>	<b>Practice professionalism</b>	<b>Practice occupational health and Safety procedures</b>	Practice basic housekeeping procedures
	Lead workplace communication	Lead small teams	Develop and practice negotiation	Solve problems related to activities	Use mathematical method	Use technologies	Utilize specialized communication skills	Develop team and individual
	Apply problem solving techniques to workplace	Collect and organize information	Plan and organize work	Promote environment protection				

## DEFINITION OF TERMS

1. Baluster Refers to a post, which supports a handrail and encloses the open sections of a stairway.
2. Competency Is the application of knowledge, skills and attitudes to perform work activities to the standard expected in the workplace.
3. Cement Is a dry powder from silica, alumina, lime, iron oxide and magnesia which hardens when mix with water.
4. Certification Refers to the process of verifying and validating competencies of a person through assessment.
5. Dowel A headless, cylindrical pin which, is sunk into corresponding holes.
6. Element Refers to the building blocks of a unit of competency. It describes in outcome terms the functions that a person who works in a particular area of work is able to perform.
7. Evidence Guide It is a guide for assessment that provides information on critical aspects of competency, underpinning knowledge, underpinning skills, resource implications, context of assessment and assessment method.
8. Form works Refer to the temporary wooden casing used to contain concrete during its placing and hardening.
9. General Masonry Refers to the preparation and placement of concrete for structures; finishing masonry surfaces by plastering, chipping, grinding, jointing, sand blasting, terrazzo and other related processes; installation, laying, fitting and setting of masonry products, such as bricks, stones, marble tiles, mosaic panels and similar or associated materials.
10. Grout Refers to a fluid mixture of cement and water, or a mixture of cement, sand and water.
11. Handrail Refers to a narrow rail to be grasped by a person for support.
12. Level Refers to the category following the level of difficulty and complexity of skills and knowledge required to do the job.
13. Lintel Refers to the horizontal member over an opening such as door or window, usually carrying the load.

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| 14. Mortar                                  | Refers to a mixture of cement lime and sand used for laying bricks or masonry.  |
| 15. Philippine TVET Qualification Framework | Refers to a comprehensive, nationally consistent framework for qualifications in the TVET sector. It also provides the parameter for the integration of learning and assessment in the middle skills development. |
| 16. Qualification                           | Refers to the national certificate issued by the TESDA or its accredited industry organizations in recognition that a person has achieved competencies relevant to a trade or industry.                           |
| 17. Range of Variable                       | It describes the circumstances or context in which the work is to be performed.   |
| 18. Reinforcing bar                         | Refers to the steel rods that are embedded in building materials such as concrete for reinforcement.  |
| 19. Scaffold                                | Refers to a temporary or movable platform supported on the ground or suspended, used for working at considerable heights above the ground.  |
| 20. Terrazo                                 | Refers to a mosaic surface made by embedding marble or granite chips in mortar, allowing the mortar to harden, and the grinding and polishing the surface.  |
| 21. Unit of Competency                      | Refers to a discrete aspect of work, which would normally be performed by only one person.  |

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