TRAINING REGULATIONS

CONSTRUCTION PAINTING NC III

CIVIL WORKS
(CONSTRUCTION SECTOR)

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

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CONSTRUCTION SECTOR

CONSTRUCTION PAINTING NC III

TRAINING REGULATIONS FOR CONSTRUCTION PAINTING NC III

SECTION 1 CONSTRUCTION PAINTING NC III QUALIFICATION

The Construction Painting NC III Qualification consists of competencies that a person must achieve and that will enable him / her to erect scaffolds and platforms, estimate paint requirement, prepares concrete, wooden and steel surfaces for re-painting and / or re-touching work and perform re-painting / re-touching works.

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
500311109	Lead workplace communication
500311110	Lead small teams
500311111	Develop and practice negotiation skills
500311112	Solve problems related to work activities
500311113	Use Mathematical concepts and techniques
500311114	Use relevant technologies

CODE NO.	COMMON COMPETENCIES
	Units of Competency
CON931201	Prepare construction materials and tools
CON311201	Observe procedures, specifications and manuals of instruction
CON311202	Interpret technical drawings and plans
CON311203	Perform mensurations and calculations
CON311204	Maintain tools and equipment

CODE NO.	CORE COMPETENCIES
	Units of Competency
CON712326	Prepare tools, painting materials and equipment
CON712327	Prepare surface for painting
CON712328	Perform painting work
CON712329	Estimate painting requirements
CON712330	Perform mixing / tinting of paints
CON712331	Perform re-painting / re-touching work

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

- Painter III

SECTION 2 COMPETENCY STANDARDS

This section gives the details of the contents of the core units of competency required for **CONSTRUCTION PAINTING NC III**.

BASIC COMPETENCIES

UNIT OF COMPETENCY : LEAD WORKPLACE COMMUNICATION
UNIT CODE : 500311109

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to lead in the dissemination and discussion of ideas, information and issues in the workplace.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Communicate information about workplace processes	1.1 Appropriate ***communication method*** is selected 1.2 Multiple operations involving several topics areas are communicated accordingly 1.3 Questions are used to gain extra information 1.4 Correct sources of information are identified 1.5 Information is selected and organized correctly 1.6 Verbal and written reporting is undertaken when required 1.7 Communication skills are maintained in all situations
2. Lead workplace discussions	2.1 Response to workplace issues are sought 2.2 Response to workplace issues are provided immediately 2.3 Constructive contributions are made to workplace discussions on such issues as production, quality and safety 2.4 Goals/objectives and action plan undertaken in the workplace are communicated
3. Identify and communicate issues arising in the workplace	3.1 Issues and problems are identified as they arise 3.2 Information regarding problems and issues are organized coherently to ensure clear and effective communication 3.3 Dialogue is initiated with appropriate personnel 3.4 Communication problems and issues are raised as they arise

RANGE OF VARIABLES

VARIABLE	RANGE
1. Methods of communication	1.1 Non-verbal gestures 1.2 Verbal 1.3 Face to face 1.4 Two-way radio 1.5 Speaking to groups 1.6 Using telephone 1.7 Written 1.8 Internet

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1 Dealt with a range of communication/information at one time 1.2 Made constructive contributions in workplace issues 1.3 Sought workplace issues effectively 1.4 Responded to workplace issues promptly 1.5 Presented information clearly and effectively written form 1.6 Used appropriate sources of information 1.7 Asked appropriate questions 1.8 Provided accurate information
2. Underpinning knowledge	2.1 Organization requirements for written and electronic communication methods 2.2 Effective verbal communication methods
3. Underpinning Skills	3.1 Organize information 3.2 Understand and convey intended meaning 3.3 Participate in variety of workplace discussions 3.4 Comply with organization requirements for the use of written and electronic communication methods
4. Resource Implications	The following resources MUST be provided: 4.1 Variety of Information 4.2 Communication tools 4.3 Simulated workplace
5. Methods of Assessment	Competency may be assessed through: 5.1 Competency in this unit must be assessed through 5.2 Direct Observation 5.3 Interview
6. Context for Assessment	6.1 Competency may be assessed in the workplace or in simulated workplace environment

UNIT OF COMPETENCY : LEAD SMALL TEAMS
UNIT CODE : 500311110

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes to lead small teams including setting and maintaining team and individual performance standards.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Provide team leadership	1.1 ***Work requirements*** are identified and presented to team members 1.2 Reasons for instructions and requirements are communicated to team members 1.3 ***Team members' queries and concerns*** are recognized, discussed and dealt with
2. Assign responsibilities	2.1 Duties, and responsibilities are allocated having regard to the skills, knowledge and aptitude required to properly undertake the assigned task and according to company policy 2.2 Duties are allocated having regard to individual preference, domestic and personal considerations, whenever possible
3. Set performance expectations for team members	3.1 Performance expectations are established based on client needs and according to assignment requirements 3.2 Performance expectations are based on individual team members duties and area of responsibility 3.3 Performance expectations are discussed and disseminated to individual team members

4. Supervise team performance	4.1 ***Monitoring of performance*** takes place against defined performance criteria and/or assignment instructions and corrective action taken if required 4.2 Team members are provided with *feedback*, positive support and advice on strategies to overcome any deficiencies 4.3 ***Performance issues*** which cannot be rectified or addressed within the team are referenced to appropriate personnel according to employer policy 4.4 Team members are kept informed of any changes in the priority allocated to assignments or tasks which might impact on client/customer needs and satisfaction 4.5 Team operations are monitored to ensure that employer/client needs and requirements are met 4.6 Follow-up communication is provided on all issues affecting the team 4.7 All relevant documentation is completed in accordance with company procedures

RANGE OF VARIABLES

VARIABLE	RANGE
1. Work requirements	1.1 Client Profile 1.2 Assignment instructions
2. Team member's concerns	2.1 Roster/shift details
3. Monitor performance	3.1 Formal process 3.2 Informal process
4. Feedback	4.1 Formal process 4.2 Informal process
5. Performance issues	5.1 Work output 5.2 Work quality 5.3 Team participation 5.4 Compliance with workplace protocols 5.5 Safety 5.6 Customer service

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Maintained or improved individuals and/or team performance given a variety of possible scenario 1.2 Assessed and monitored team and individual performance against set criteria 1.3 Represented concerns of a team and individual to next level of management or appropriate specialist and to negotiate on their behalf 1.4 Allocated duties and responsibilities, having regard to individual's knowledge, skills and aptitude and the needs of the tasks to be performed 1.5 Set and communicated performance expectations for a range of tasks and duties within the team and provided feedback to team members
2. Underpinning Knowledge	2.1 Company policies and procedures 2.2 Relevant legal requirements 2.3 How performance expectations are set 2.4 Methods of Monitoring Performance 2.5 Client expectations 2.6 Team member's duties and responsibilities
3. Underpinning Skills	3.1 Communication skills required for leading teams 3.2 Informal performance counseling skills 3.3 Team building skills 3.4 Negotiating skills
4. Resource Implications	The following resources MUST be provided: 4.1 Access to relevant workplace or appropriately simulated environment where assessment can take place 4.2 Materials relevant to the proposed activity or task
5. Methods of Assessment	Competency may be assessed through: 5.1 Direct observations of work activities of the individual member in relation to the work activities of the group 5.2 Observation of simulation and/or role play involving the participation of individual member to the attainment of organizational goal 5.3 Case studies and scenarios as a basis for discussion of issues and strategies in teamwork
6. Context of Assessment	6.1 Competency assessment may occur in workplace or any appropriately simulated environment 6.2 Assessment shall be observed while task are being undertaken whether individually or in-group

UNIT OF COMPETENCY : DEVELOP AND PRACTICE NEGOTIATION SKILLS
UNIT CODE : 500311111

UNIT DESCRIPTOR : This unit covers the skills, knowledge and attitudes required to collect information in order to negotiate to a desired outcome and participate in the negotiation.

ELEMENT	PERFORMANCE CRITERIA *Italicized* terms are elaborated in the Range of Variables
1. Plan negotiations	1.1 Information on ***preparing for negotiation*** is identified and included in the plan 1.2 Information on creating ***non verbal environments*** for positive negotiating is identified and included in the plan 1.3 Information on ***active listening*** is identified and included in the plan 1.4 Information on different ***questioning techniques*** is identified and included in the plan 1.5 Information is checked to ensure it is correct and up-to- date
2. Participate in negotiation	2.1 Criteria for successful outcomes are agreed upon by all parties 2.2 Desired outcome of all parties are considered 2.3 Appropriate language is used throughout the negotiation 2.4 A variety of questioning techniques are used 2.5 The issues and processes are documented and agreed upon by all parties 2.6 Possible solutions are discussed and their viability assessed 2.7 Areas for agreement are confirmed and recorded 2.8 Follow-up action is agreed upon by all parties

RANGE OF VARIABLES

VARIABLE	RANGE
1. Preparing for negotiation	1.1 Background information on other parties to the negotiation 1.2 Good understanding of topic to be negotiated 1.3 Clear understanding of desired outcome/s 1.4 Personal attributes 1.4.1self awareness 1.4.2 self esteem 1.4.3 objectivity 1.4.4 empathy 1.4.5 respect for others 1.4.6 Interpersonal skills 1.4.7 listening/reflecting 1.4.8 non verbal communication 1.4.9 assertiveness 1.4.10 behavior labeling 1.4.11 testing understanding 1.4.12 seeking information 1.4.13 self disclosing 1.5 Analytic skills 1.5.1 observing differences between content and process 1.5.2 identifying bargaining information 1.5.3 applying strategies to manage process 1.5.4 applying steps in negotiating process 1.5.5 strategies to manage conflict 1.5.6 steps in negotiating process 1.5.7 options within organization and externally for resolving conflict
2. Non-verbal environments	2.1 Friendly reception 2.2 Warm and welcoming room 2.3 Refreshments offered 2.4 Lead in conversation before negotiation begins
3. Active listening	3.1 Attentive 3.2 Don't interrupt 3.3 Good posture 3.4 Maintain eye contact 3.5 Reflective listening

4. Questioning techniques	4.1 Direct 4.2 Indirect 4.3 Open-ended

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Demonstrated sufficient knowledge of the factors influencing negotiation to achieve agreed outcome 1.2 Participated in negotiation with at least one person to achieve an agreed outcome
2. Underpinning Knowledge and Attitude	2.1 Codes of practice and guidelines for the organization 2.2 Organizations policy and procedures for negotiations 2.3 Decision making and conflict resolution strategies procedures 2.4 Problem solving strategies on how to deal with unexpected questions and attitudes during negotiation 2.5 Flexibility 2.6 Empathy
3. Underpinning Skills	3.1 Interpersonal skills to develop rapport with other parties 3.2 Communication skills (verbal and listening) 3.3 Observation skills 3.4 Negotiation skills
4. Resource Implications	The following resources MUST be provided: 4.1 Room with facilities necessary for the negotiation process 4.2 Human resources (negotiators)
5. Methods of Assessment	Competency may be assessed through: 5.1 Observation/demonstration and questioning 5.2 Portfolio assessment 5.3 Oral and written questioning 5.4 Third party report
6. Context for Assessment	6.1 Competency to be assessed in real work environment or in a simulated workplace setting.

UNIT OF COMPETENCY : SOLVE PROBLEMS RELATED TO WORK ACTIVITIES
UNIT CODE : 500311112

UNIT DESCRIPTOR : This unit of covers the knowledge, skills and attitudes required to solve problems in the workplace including the application of problem solving techniques and to determine and resolve the root cause of problems.

ELEMENT	PERFORMANCE CRITERIA *Italicized* terms are elaborated in the Range of Variables
1. Identify the problem	1.1 Variances are identified from normal operating parameters; and product quality 1.2 Extent, cause and nature are of the problem are defined through observation, investigation and ***analytical techniques*** 1.3 ***Problems*** are clearly stated and specified
2. Determine fundamental causes of the problem	2.1 Possible causes are identified based on experience and the use of problem solving tools / analytical techniques. 2.2 Possible cause statements are developed based on findings 2.3 Fundamental causes are identified per results of investigation conducted
3. Determine corrective action	3.1 All possible options are considered for resolution of the problem 3.2 Strengths and weaknesses of possible options are considered 3.3 Corrective actions are determined to resolve the problem and possible future causes 3.4 **Action *plans*** are developed identifying measurable objectives, resource needs and timelines in accordance with safety and operating procedures
4. Provide recommendation / s to manager	4.1 Report on recommendations are prepared 4.2 Recommendations are presented to appropriate personnel 4.3 Recommendations are followed-up, if required

RANGE OF VARIABLES

VARIABLE	RANGE
1. Analytical techniques	1.1 Brainstorming 1.2 Intuitions/Logic 1.3 Cause and effect diagrams 1.4 Pareto analysis 1.5 SWOT analysis 1.6 Gant chart, Pert CPM and graphs 1.7 Scattergrams
2. Problem	2.1 Non – routine process and quality problems 2.2 Equipment selection, availability and failure 2.3 Teamwork and work allocation problem 2.4 Safety and emergency situations and incidents
3. Action plans	3.1 Priority requirements 3.2 Measurable objectives 3.3 Resource requirements 3.4 Timelines 3.5 Co-ordination and feedback requirements 3.6 Safety requirements 3.7 Risk assessment 3.8 Environmental requirements

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Identified the problem 1.2 Determined the fundamental causes of the problem 1.3 Determined the correct / preventive action 1.4 Provided recommendation to manager These aspects may be best assessed using a range of scenarios / case studies / 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.
2. Underpinning Knowledge	2.1 Competence includes a thorough knowledge and understanding of the process, normal operating parameters, and product quality to recognize non-standard situations 2.2 Competence to include the ability to apply and explain, sufficient for the identification of fundamental cause, determining the corrective action and provision of recommendations 2.3 Relevant equipment and operational processes 2.4 Enterprise goals, targets and measures 2.5 Enterprise quality, OHS and environmental requirement 2.6 Principles of decision making strategies and techniques 2.7 Enterprise information systems and data collation 2.8 Industry codes and standards
3. Underpinning Skills	3.1 Using range of formal problem solving techniques 3.2 Identifying and clarifying the nature of the problem 3.3 Devising the best solution 3.4 Evaluating the solution 3.5 Implementation of a developed plan to rectify the problem

4. Resource Implications	Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios / case studies / what ifs will be required as well as bank of questions which will be used to probe the reason behind the observable action.
5. Methods of Assessment	Competency may be assessed through: 5.1 Case studies on solving problems in the workplace 5.2 Observation 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. 5.3 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.
6. Context of Assessment	6.1 In all workplace, it may be appropriate to assess this unit concurrently with relevant teamwork or operation units.

UNIT OF COMPETENCY : USE MATHEMATICAL CONCEPTS AND TECHNIQUES

UNIT CODE : 500311113

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required in the application of mathematical concepts and techniques.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Identify mathematical tools and techniques to solve problem	1.1 Problem areas are identified based on given condition 1.2 ***Mathematical techniques*** are selected based on the given problem
2. Apply mathematical procedure/solution	2.1 Mathematical techniques are applied based on the problem identified 2.2 Mathematical computations are performed to the level of accuracy required for the problem 2.3 Results of mathematical computation is determined and verified based on job requirements
3. Analyze results	3.1 Result of application is reviewed based on expected and required specifications and outcome 3.2 ***Appropriate action*** is applied in case of error

RANGE OF VARIABLES

VARIABLE	RANGE
1. Mathematical techniques	May include but are not limited to: 1.1 Four fundamental operations 1.2 Measurements 1.3 Use/Conversion of units of measurements 1.4 Use of standard formulas
2. Appropriate action	2.1 Review in the use of mathematical techniques (e.g. recalculation, re-modeling) 2.2 Report error to immediate superior for proper action

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Identified, applied and reviewed the use of mathematical concepts and techniques to workplace problems
2. Underpinning Knowledge	2.1 Fundamental operation (addition, subtraction, division, multiplication) 2.2 Measurement system 2.3 Precision and accuracy 2.4 Basic measuring tools/devices
3. Underpinning Skills	3.1 Applying mathematical computations 3.2 Using calculator 3.3 Using different measuring tools
4. Resource Implications	The following resources **MUST** be provided: 4.1 Calculator 4.2 Basic measuring tools 4.3 Case Problems
5. Methods of Assessment	Competency may be assessed through: 5.1 Authenticated portfolio 5.2 Written Test 5.3 Interview/Oral Questioning 5.4 Demonstration
6. Context of Assessment	6.1 Competency may be assessed in the work place or in a simulated work place setting

UNIT OF COMPETENCY : USE RELEVANT TECHNOLOGIES
UNIT CODE : 500311114

UNIT DESCRIPTOR : This unit of competency covers the knowledge, skills, and attitude required in selecting, sourcing and applying appropriate and affordable technologies in the workplace.

ELEMENT	PERFORMANCE CRITERIA *Italicized* terms are elaborated in the Range of Variables
1. Study/select appropriate technology	1.1 Usage of different ***technologies*** is determined based on job requirements 1.2 Appropriate technology is selected as per work specification
2. Apply relevant technology	2.1 Relevant technology is effectively used in carrying out function 2.2 Applicable software and hardware are used as per task requirement 2.3 ***Management concepts*** are observed and practiced as per established industry practices
3. Maintain/enhance relevant technology	3.1 Maintenance of technology is applied in accordance with the ***industry standard operating procedure***, ***manufacturer's operating guidelines*** and ***occupational health and safety procedure*** to ensure its operative ability 3.2 Updating of technology is maintained through continuing education or training in accordance with job requirement 3.3 Technology failure/ defect is immediately reported to the concern/responsible person or section for ***appropriate action***

RANGE OF VARIABLES

VARIABLE	RANGE
1. Technology	May include but are not limited to: 1.1 Office technology 1.2 Industrial technology 1.3 System technology 1.4 Information technology 1.5 Training technology
2. Management concepts	May include but not limited to: 2.1 Real Time Management 2.2 KAIZEN or continuous improvement 2.3 5s 2.4 Total Quality Management 2.5 Other management/productivity tools
3. Industry standard operating procedure	3.1 Written guidelines relative to the usage of office technology/equipment 3.2 Verbal advise/instruction from the co-worker
4. Manufacturer's operating guidelines/ instructions	4.1 Written instruction/manuals of specific technology/ equipment 4.2 General instruction manual 4.3 Verbal advise from manufacturer relative to the operation of equipment
5. Occupational health and safety procedure	5.1 Relevant statutes on OHS 5.2 Company guidelines in using technology/equipment
6. Appropriate action	6.1 Implementing preventive maintenance schedule 6.2 Coordinating with manufacturer's technician

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Studied and selected appropriate technology consistent with work requirements 1.2 Applied relevant technology 1.3 Maintained and enhanced operative ability of relevant technology
2. Underpinning Knowledge	2.1 Awareness on technology and its function 2.2 Repair and maintenance procedure 2.3 Operating instructions 2.4 Applicable software 2.5 Communication techniques 2.6 Health and safety procedure 2.7 Company policy in relation to relevant technology 2.8 Different management concepts 2.9 Technology adaptability
3. Underpinning Skills	3.1 Relevant technology application/implementation 3.2 Basic communication skills 3.3 Software applications skills 3.4 Basic troubleshooting skills
4. Resource Implications	The following resources MUST be provided: 4.1 Relevant technology 4.2 Interview and demonstration questionnaires 4.3 Assessment packages
5. Methods of Assessment	Competency must be assessed through: 5.1 Interview 5.2 Actual demonstration 5.3 Authenticated portfolio (related certificates of training/seminar)
6. Context of Assessment	6.1 Competency may be assessed in actual workplace or simulated environment

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 ***Italicized*** terms are elaborated in the Range of Variable
1. Identify materials	1.1 ***Materials*** are listed as per job requirements 1.2 Quantity and ***description of materials*** 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 ***company standard operating procedures (SOP)*** 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

1. Critical aspects of competency	Assessment requires evidence that the candidate: 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 Tools provided with appropriate safety devices
2. Underpinning knowledge	2.1 Types and uses of construction materials and tools 2.2 Different forms 2.3 Requisition procedures
3. Underpinning skills	3.1 Preparing materials and tools 3.2 Proper handling of tools and equipment 3.3 Following instructions
4. Resource implications	The following resources should be provided: 4.1 Workplace location 4.2 Materials relevant to the unit of competency 4.3 Technical plans, drawings and specifications relevant to the activities
5. Methods of assessment	Competency in this unit must be assessed through: 5.1 Direct observation and oral questioning
6. Context of assessment	6.1 Competency may be assessed in the workplace or in a simulated workplace 6.1 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines

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 ***Italicized*** 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 ***Manual*** 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

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. Underpinning knowledge	2.1 Types of manuals used in construction sector 2.2 Identification of symbols used in the manuals 2.3 Identification of units of measurements 2.4 Unit conversion
3. Underpinning skills	3.1 Reading and comprehension skills required to identify and interpret construction manuals and specifications 3.2 Accessing information and data
4. Resource implications	The following resources should be provided: 4.1 All manuals/catalogues relative to construction sector
5. Methods of assessment	Competency should be assessed through: 5.1 Direct observation 5.2 Questions/interview Assessment of underpinning knowledge and practical skills may be combined
6. Context of assessment	6.1 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines 6.2 Assessment may be conducted in the workplace or a simulated environment

UNIT OF COMPETENCY: INTERPRET TECHNICAL DRAWINGS AND PLANS
UNIT CODE : CON311202

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes in analyzing and interpreting symbols, data and work plan based on the required performance standards.

ELEMENTS	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Analyze signs, symbols and data	1.1 ***Technical plans*** are obtained according to job requirements 1.2 Signs, symbols and data are identified according to job specifications 1.3 Signs symbols and data are determined according to ***classification*** or as appropriate in ***drawing***
2. Interpret technical drawings and plans	2.1 Necessary ***tools, materials*** and equipment are identified according to the ***plan*** 2.2 Supplies and materials are listed according to specifications 2.3 Components, assemblies or objects are recognized as required 2.4 Dimensions are identified as appropriate to the plan 2.5 Specification details are matched with existing/available resources and in line with job requirements 2.6 Work plan is drawn following the specifications
3. Apply freehand sketching	3.1 Where applicable, correct freehand sketching is produced in accordance with the job requirements

RANGE OF VARIABLES

VARIABLES	RANGE
1. Technical Plans	Including but not limited to: 1.1 Electrical plans 1.2 Structural plans 1.3 Architectural plans 1.4 Plumbing plans 1.5 Welding Procedures Specifications (WPS)
2. Work plan	2.1 Job requirements 2.2 Installation instructions 2.3 Components instruction
3. Classification	Including but not limited to: 3.1 Electrical 3.2 Mechanical 3.3 Plumbing
4. Drawing	4.1 Drawing symbols 4.2 Alphabet of lines 4.3 Orthographic views 4.4 Front view 4.5 Right side view/left side view 4.6 Top view 4.7 Pictorial 4.8 Schematic diagram 4.9 Electrical drawings 4.10 Structural drawings 4.11 Plumbing drawings 4.12 Water 4.13 Sewerage/Drainage 4.14 Ventilation 4.15 Welding symbols
5. Tools and materials	Including but not limited to: 5.1 Compass 5.2 Divider 5.3 Rulers 5.4 Triangles 5.5 Drawing tables 5.6 Computer

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires that the candidate: 1.1 Identified and determined signs, symbols and data according to work plan, job requirements and classifications 1.2 Identified tools and equipment in accordance with job requirements 1.3 Listed supplies and materials according to blueprint specifications 1.4 Drawn work plan following specifications 1.5 Demonstrated ability to determine job specifications based on working / technical drawing
2. Underpinning Knowledge	2.1 TRADE MATHEMATICS 2.1.1 Linear measurement 2.1.2 Dimension 2.1.3 Unit conversion 2.2 BLUEPRINT READING AND PLAN SPECIFICATION 2.2.1 Electrical, mechanical plan, symbols and abbreviations 2.2.2 Drawing standard symbols 2.3 TRADE THEORY 2.3.1 Basic technical drawing 2.3.2 Types technical plans 2.3.3 Various types of drawings 2.3.4 Notes and specifications
3. Underpinning Skills	3.1 Interpreting drawing/orthographic drawing 3.2 Interpreting technical plans 3.3 Matching specification details with existing resources 3.4 Following instructions 3.5 Handling of drawing instruments
4. Resource Implications	The following resources should be provided: 4.1 Workplace 4.2 Drawings and specification relevant to task 4.3 Materials and instrument relevant to proposed activity

5. Methods of Assessment	Competency should be assessed through: 5.1 Direct Observation 5.2 Questions/Interview 5.3 Written test related to underpinning knowledge
6. Context of Assessment	6.1 Competency assessment may occur in the workplace or in any appropriate simulated environment 6.2 Assessment shall be observed while task are being undertaken whether individually or in group 6.3 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines

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 ***Italicized** terms* 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 ***geometric shape*** 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 1.1 Alternative measuring tools are used without sacrificing cost and quality of work
2. Carry out measurements and calculations	*2.1* Accurate ***measurements*** are obtained according to job requirements 2.2 Alternative measuring tools are used without sacrificing cost and quality of work 2.3 ***Calculation*** 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-ohmeter 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

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

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.

ELEMENTS	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Check condition of tools and equipment	1.1 ***Materials, tools and equipmen***t 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 ***PPE*** 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 2.3 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: 2.1 Tools 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 2.2 Measuring instruments/equipment
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

1. Critical aspects of competency	Assessment requires that the candidate: 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 OHSA regulations 1.8 Stored tools and equipment safely in appropriate locations and in accordance with company practices
2. Underpinning knowledge	2.1 SAFETY PRACTICES 2.1.1 Use of PPE 2.1.2 Handling of tools and equipment 2.1.3 Good housekeeping 2.2 MATERIALS, TOOLS AND EQUIPMENT 2.2.1 Types and uses of lubricants 2.2.2 Types and uses of cleaning materials 2.2.3 Types and uses of measuring instruments and equipment 2.3 PREVENTIVE MAINTENANCE 2.3.1 Methods and techniques 2.3.2 Procedures
3. Underpinning skills	3.1 Preparing maintenance materials, tools and equipment 3.2 Proper handling of tools and equipment 3.3 Performing preventive maintenance 3.4 Following instructions
4. Resource implications	The following resources should be provided: 4.1 Workplace 4.2 Maintenance schedule 4.1 Maintenance materials, tools and equipment relevant to the proposed activity/task
5. Methods of assessment	Competency should be assessed through: 5.1 Direct observation 5.2 Written test/questioning relevant to Underpinning knowledge

6. Context of assessment	6.1 Competency assessment may occur in workplace or any appropriate simulated environment 6.2 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines

CORE COMPETENCIES

UNIT OF COMPETENCY : **PREPARE TOOLS, PAINTING MATERIALS AND EQUIPMENT**

UNIT CODE : **CON712326**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes in identifying and preparing paint and associated materials such as base coat (metal primer), patching compound (putty) and finish coat and tools and painting equipment.

ELEMENTS	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Identify, select and prepare painting materials, tools and equipment	1.1 Work instruction is secured and interpreted from appropriate personnel and/or working drawing. 1.2 Appropriate ***PPE*** is identified, selected and used in line with job requirements and OSHA specifications. 1.3 ***Painting materials, tools and equipment*** are selected and prepared consistent with job requirements, plans and/or paint schedules.
2. Prepare paints and requirements	2.1 Appropriate PPE is used in line with job requirements. 2.2 Areas to be painted are measured according to job requirements. 2.3 Safety precautions are observed during preparation of paint materials. 2.4 Paints are identified, prepared and staged/stored consistent with job requirements and in line with standard operating procedures. 2.5 Tinting or acri-color is prepared in accordance with job requirements. 2.6 ***Unexpected situations*** are responded to in line with company rules and regulations.

RANGE OF VARIABLES

VARIABLES	RANGE
1. Painting materials	May include but are not limited to: 1.1 Base coat materials 1.1.1 Metal primer 1.1.2 Wood primer 1.1.3 Concrete sealer 1.2 Enamel paint (flat, gloss, semi-gloss) 1.3 Elastromeric/ Latex paint 1.4 Tinting/ Acri-color paint 1.5 Paint/ Lacquer thinner 1.6 Empty cans 1.7 Rust converter for rusted surfaces 1.1 Patching compound (putty, decalite/ calsomine powder) 1.9 Top/ Intermediate/Finishing coat 1.10 Concrete neutralizer 1.11 Alkaline remover 1.12 Rags 1.13 Lithmus paper 1.14 Water 1.15 Soaped water 1.16 Waterproof sand paper 1.17 Solvent
2. Tools and equipment	May include but are not limited to: 2.1 Mixing stick 2.2 Spatula/Putty knife (Paleta) 2.3 Screw driver 2.4 Hammer 2.5 Lifeline and anchorage 2.6 Paint brush 2.7 Roller brush 2.8 Color charts 2.9 Spray/Mortar gun 2.10 Air compressor 2.11 Sand papers 2.12 Steel brush or Cap brush 2.13 Scaffold 2.14 Ladder 2.15 Paint mixer 2.16 Sanding machine 2.17 Nail set (Punsol)

3. PPE	May include but not limited to: 3.1 Body harness/Safety belt 3.2 Gloves 3.3 Safety shoes 3.4 Hard hat 3.5 Respirator/Dust mask 3.6 Goggles 3.7 Overall coat and pants 3.8 Ear muff/plug
4. Unexpected situations	May include but are not limited to: 4.1 Damaged to materials 4.2 Injury to personnel

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Selected and prepared painting materials, tools and equipment consistent with the job requirements 1.2 Identified, selected and used appropriate PPE in line with job requirements 1.3 Interpreted work instruction and working drawings 1.4 Identified, prepared and staged/stored paints consistent with the job requirements. 1.5 Demonstrated compliance with safety regulations applicable to worksite operations and OSHA regulations 1.6 Work completed without injury or damage to materials
2. Underpinning Knowledge	May include but are not limited to: 2.1 Materials uses and specifications 2.1.1 Types of paint 2.1.2 Types of thinner/reducer 2.1.3 Grades of sand paper 2.1.4 Types of patching compound 2.1.5 Other materials for surface preparation 2.2 Tools and equipment 2.3 Types of paint brush and roller/tray 2.4 Types of measuring tools 2.5 Proper use of painting hand tools 2.6 Safety use of scaffoldings 2.7 Plans and specifications interpretation 2.7.1 Architectural details/section 2.7.2 Floor plans and elevation 2.7.3 Painting schedule 2.8 Mensuration and shop Mathematics
3. Underpinning Skills	3.1 Selecting and preparing painting materials, tools and equipment 3.2 Interpreting plans and specifications 3.3 Applying mensuration 3.4 Following 5S 3.5 Preparing paint coats for: 3.5.1 Concrete 3.5.2 Steel 3.5.3 Wood 3.6 Preparing patching compound 3.7 Staging/preparing scaffolds

4. Resource Implications	Things necessary to conduct method of assessment: 4.1 Workplace location 4.2 Tools and equipment appropriate to work processes 4.3 Materials relevant to the proposed activity 4.4 Working drawings, instructions and specifications relevant to the task 4.5 Appropriate PPE
5. Methods of Assessment	Competency in this unit must be assessed through: 5.1 Observation of practical demonstration of skills 5.2 Oral questions related to underpinning knowledge
6. Context for Assessment	6.1 Competency may be assessed in the workplace or in a simulated workplace setting

UNIT OF COMPETENCY : **PREPARE SURFACE FOR PAINTING**
UNIT CODE : **CON712327**

UNIT DESCRIPTOR : This unit covers the outcomes required to prepare surface area for painting.

ELEMENTS	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Inspect surface	1.1 ***Scaffolds/***platforms/guard rail systems/ladders are laid-out and assembled consistent with detailed plans and manufacturer's specifications. 1.2 ***Surfaces*** are inspected in line with job requirements and standard operating procedures. 1.3 Area is checked against paint schedule and plans 1.4 ***Foreign matters*** are checked according to job requirements 1.5 Appropriate ***PPE*** is used according to job requirements 1.6 Inspection report is submitted to appropriate personnel according to job requirements
2. Clean surface	2.1 Appropriate PPE is used according to job requirements 2.2 Surfaces are sanded smoothly according to industry requirements and appropriate chemicals are applied when necessary 2.3 Surfaces with ***minor imperfection*** are primed and/or putted according to job specifications 2.4 Proper tool usage is observed in line with job requirements 2.5 ***Unexpected situations*** are responded to according to company rules and regulations 2.6 Worksite is cleaned and kept in safe state and in accordance with OSHA regulations 2.7 Daily completion report is submitted to appropriate personnel according to job requirements.

RANGE OF VARIABLES

VARIABLES	RANGE
1. Scaffolds	1.1 15-feet high 1.2 20-feet long
2. Surface	2.1 Concrete 2.2 Steel 2.3 Wooden
3. Foreign matters	May include but are not limited to: 3.1 Substances/Chemicals 3.1.1 Grease 3.1.2 Oil 3.1.3 Alkaline 3.1.4 Dust 3.1.5 Rust 3.2 Exposed nails/rebars/wires 3.3 Welding spatters
4. PPE	May include but not limited to: 4.1 Body harness/Safety belt 4.2 Gloves 4.3 Safety shoes 4.4 Hard hat 4.5 Respirator/Dust mask 4.6 Goggles 4.7 Overall coat and pants
5. Minor imperfection	May include but are not limited to: 5.1 Minor cracks 5.2 Surface imperfection 5.3 Dents 5.4 Holes
6. Unexpected situations	May include but are not limited to: 6.1 Damaged to materials 6.2 Injury to personnel

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Laid-out and assembled scaffolds/platforms/guard rail systems/ladders consistent with detailed plans and manufacturer's specifications. 1.2 Inspected surfaces in line with job requirements and standard operating procedures. 1.3 Sanded surfaces smoothly according to industry requirements and appropriate chemicals are applied when necessary. 1.3 Patched surfaces with minor imperfection according to job specifications. 1.4 Observed proper tool usage in line with job requirements. 1.5 Identified, selected and used appropriate PPE in line with job requirements. 1.6 Communicated interactively with others where applicable to ensure safe and effective work operations. 1.8 Work completed without injury or damage to materials.
2. Underpinning Knowledge	2.1 Safety and maintenance 2.1.1 Safety rules and regulations 2.1.2 Fire prevention 2.1.3 First aid treatment 2.1.4 Proper handling and care of tools, materials and equipment 2.2 Trade theory 2.2.1 Grades of sandpaper 2.2.2 Paint defects and troubleshooting 2.2.3 Various paint remover and cleaner 2.3 Trade Mathematics and mensuration 2.4 Tools and equipment 2.4.1 Sander (Pneumatic) 2.4.2 Compressor 2.4.3 Handtools (spatula, hammer, nail set) 2.5 Plans and specifications interpretation 2.5.1 Painting schedule 2.5.2 Architectural plans 2.6 Methods and procedures 2.7 Methods/procedures of surface preparation 2.8 5S 2.9 Surface inspection procedures 2.10 Application of primer and filler

3. Underpinning Skills	3.1 Following safety and maintenance procedures 3.2 Staging/preparing scaffolds 3.3 Interpreting specifications 3.4 Applying mensuration 3.5 Following 5S 3.6 Preparing surfaces for: 3.6.1 Concrete 3.6.2 Steel 3.6.3 Wood 3.7 Smoothing surfaces 3.8 Preparing inspection and completion reports
4. Resource Implications	Things necessary to conduct method of assessment: 4.1 Workplace location 4.2 Tools and equipment appropriate to work processes 4.3 Materials relevant to the proposed activity 4.2 Working drawings, instructions and specifications relevant to the task 4.5 Appropriate PPE
5. Methods of Assessment	Competency in this unit must be assessed through: 5.1 Observation of practical demonstration of skills 5.2 Interview/Oral questioning related to underpinning knowledge 5.3 Portfolio
6. Context for Assessment	6.1 Competency may be assessed in the workplace or in a simulated workplace setting.

UNIT OF COMPETENCY : PERFORM PAINTING WORK
UNIT CODE : CON712328

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes in the application of paints and performance for painting work based on the required performance standard.

ELEMENTS	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Prepare tools and equipment	1.1 Work instruction is secured and interpreted from appropriate personnel and/or working drawings. 1.2 Appropriate PPE is selected and used according to job requirements. 1.3 Proper ***tools and equipment*** are prepared in line with the job requirements. 1.4 Safety is observed in line with OSHA specifications. 1.5 ***Unexpected situations*** are dealt with in accordance with company rules and regulations.
2. Apply paint coat materials	2.1 Appropriate ***PPE*** is selected and used in line with job requirements. 2.2 ***Paint coat materials*** are consistently mixed and applied in sequence and in accordance with job requirements. 2.3 Proper tool usage is observed and in line with manufacturer's specifications. 2.4 Worksite is cleaned and kept safe in line with OSHA regulations.
3. Complete work	3.1 Final checks are made to ensure that work conforms with instructions and requirements. 3.2 Completion report is prepared and submitted to appropriate officer. 3.3 Tools, equipment and any surplus resources and materials are checked and monitored in accordance with established procedures.

4. Dismantle scaffolds/platforms	4.1 Scaffolds/platform/guard rail systems are dismantled, staged and stored in conformity with correct procedures and manufacturers specifications. 4.2 Safety is observed in line with industry requirements. 4.3 Worksite is cleaned and kept in safe state in line with OSHA regulations. 4.4 Unexpected situations are dealt with in line with company rules and regulations.

RANGE OF VARIABLES

VARIABLES	RANGE
1. Tools and equipment	May include but not limited to: 1.1 Paint brushes 1.2 Scraper 1.3 Chisel 1.4 Paint roller 1.5 Masking tape 1.6 Spatula 1.7 Mixing stick 1.8 Rags 1.9 Putty knife 1.10 Lifeline and anchorage 1.11 Roller brush 1.12 Spray/Mortar gun 1.14 Air compressor 1.15 Steel brush or Cap brush
2. Paint coat materials	2.1 Sand paper 2.2 Base coat materials 2.2.1 Metal primer 2.2.2 Wood primer 2.2.3 Concrete sealer 2.3 Enamel paint (flat, gloss, semi-gloss) 2.4 Elastromeric/ Latex paint 2.5 Tinting/ Acri-color paint 2.6 Paint/ Lacquer thinner and water 2.7 Empty cans 2.8 Rust converter for rusted surfaces 2.9 Patching compound (Putty, decalite/ calsomine powder) 2.10 Top/ Intermediate/Finishing coat 2.11 Concrete neutralizer
3. PPE	Includes but not limited to: 3.1 Gloves 3.2 Dust mask 3.3 Safety shoes 3.4 Hard hat 3.5 Respirator 3.6 Belt/body harness 3.7 Goggles 3.8 Working clothes

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Prepared tools and equipment consistent with job requirements. 1.2 Consistently mixed and applied painting materials in accordance with the standard procedures and job requirements. 1.3 Demonstrated ability to use painting tools according to standard procedures. 1.4 Dismantled scaffolds/platforms according to standard operating procedures 1.5 Complied with safety regulations applicable to worksite operations. 1.6 Communicated interactively with others, where applicable, to ensure safe and effective work operations. 1.7 Completed painting work within specifications and without injury to personnel or damage to materials. 1.8 Followed company rules and regulations.

2. Underpinning Knowledge	2.1 Safety and maintenance 2.1.1 Hazards 2.1.2 Safety rules and regulations 2.1.3 Fire prevention 2.1.4 First aid treatment 2.1.5 Proper handling and care of tools and equipment 2.1.6 Housekeeping 2.2 Trade theory 2.2.1 Painting principle/technique 2.3 Tools and equipment 2.3.1 Types of spray equipment 2.3.2 Capacity of compressor 2.3.4 Principles of scaffold dismantling 2.4 Materials uses and specifications 2.4.1 Different types of paints/thinners 2.4.2 Types of fillers 2.5 Methods and procedures 2.5.1 Methods of paint application 2.6 Mensuration and shop Mathematics 2.6.1 Linear measurements 2.6.2 Metric system 2.6.3 Basic Mathematical operation 2.7 Specification interpretation 2.7.1 Floor plan and elevations 2.7.2 Architectural details 2.8 Company rules and regulations
3. Underpinning Skills	Interpreting specifications 3.1 Following safety and maintenance procedures 3.2 Selecting and preparing paint coat material, tools and equipment 3.3 Applying mensuration and shop Mathematics 3.4 Applying paint coat materials 3.5 Following procedures for maintaining, staging and storing of tools and equipment 3.6 Following company rules and regulations
4. Resource Implications	Things necessary for the conduct of method of assessment: 4.1 Workplace location 4.2 Tools and equipment appropriate to painting work 4.3 Materials relevant to the proposed activity 4.4 Plans and specifications relevant to the task 4.5 Appropriate PPE

5. Methods of Assessment	Competency in this unit must be assessed through: 5.1 Direct observation of application to tasks 5.2 Questions related to underpinning knowledge
6. Context for Assessment	6.1 Competency may be assessed in the workplace or in a simulated workplace setting

UNIT OF COMPETENCY	**:**	**ESTIMATE PAINTING REQUIREMENTS**
UNIT CODE	**:**	**CON712329**
UNIT DESCRIPTOR	**:**	This unit deals with the knowledge, skills and attitudes in the measurement of area to be painted, computation and estimates of painting requirements (materials).

ELEMENTS	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Measure and compute the surface area	1.1 Plans and specifications are interpreted in accordance with job requirements 1.2 Surface area is measured and computed in accordance with job requirements 1.3 Computed surface area is reported to immediate supervisor in accordance with job requirements
2. Compute painting requirements	2.1 ***Painting materials*** are computed in accordance with job requirements 2.2 ***Tools and equipment*** are identified and selected in accordance with job requirements 2.3 ***Estimates*** are prepared and submitted to immediate supervisor in accordance with job requirements

RANGE OF VARIABLES

VARIABLES	RANGE
1. Painting materials	May include but are not limited to: 1.1 Water base paint 1.2 Lacquer base paint 1.3 Oil base paint 1.4 Filler compound 1.5 Tinting/Acri color 1.6 Sand paper 1.7 Rags 1.8 Solvent/thinner 1.9 Masking tape 1.10 Epoxy
2. Tools and equipment	Including but not limited to: 2.1 Lifeline and anchorage 2.2 Spray/Mortar gun 2.3 Air compressor 2.4 Scaffolds 2.5 Ladder 2.6 Appropriate PPE
3. Estimates	May include but are not limited to: 3.1 Bill of materials 3.2 Tools and equipment 3.3 Man-hour requirements

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Interpreted plans and specifications in accordance with job requirements 1.2 Measured and computed surface area in accordance with job requirements 1.3 Computed materials and man-hour requirements in accordance with job requirements 1.4 Identified and selected tools and equipment in accordance with job requirements 1.5 Scaled plans accurately for estimation 1.6 Prepared bill of materials in accordance with job requirements and standard procedures

2. Underpinning Knowledge	2.1 Trade theory 2.1.1 Color matching 2.1.2 Basic paint chemistry 2.1.3 Estimating procedures 2.1.4 Mix consistency 2.2 Materials uses and specifications 2.2.1 Different types of paint 2.2.2 Different types of solvent/thinner 2.2.3 Different types of filler 2.2.4 Different types of cleaning solvent 2.2.5 Grades of sand paper 2.2.6 Neutralizer 2.2.7 Rags 2.2.8 Rust converter 2.2.9 Paint remover 2.2.10 Drop cloth 2.2.11 Protective covers 2.3 Plans and specification interpretation 2.3.1 Architectural plans 2.3.2 Painting schedule 2.4 Tools and equipment 2.4.1 Types of paint brush and roller/tray 2.4.2 Different types of spray equipment 2.4.4 Capacity of compressor 2.4.4 Putty knife (paleta) 2.4.5 Steel brush 2.4.6 Portable grinder/sander 2.4.7 Measuring tools 2.4.8 Scaffold 2.4.9 Ladders 2.4.10 Spatula 2.5 Trade Mathematics and mensuration 2.5.1 Areas and volume 2.5.2 Ratio and proportion 2.5.3 Percentage 2.5.4 Linear measurements 2.5.7 Basic Mathematical operation 2.5.8 Metric system
3. Underpinning Skills	3.1 Interpreting plan and specifications 3.2 Applying trade theory 3.3 Applying trade Mathematics and mensuration 3.4 Selecting appropriate materials, tools and `equipment

4. Resource Implications	Things necessary for the conduct of method of assessment: 4.1 Workplace location 4.2 Tools and equipment appropriate to work processes 4.3 Materials relevant to the proposed activity 4.4 Drawings and specifications relevant to the task
5. Methods of Assessment	Competency in this unit must be assessed through: 5.1 Direct Observation 5.2 Questions related to underpinning knowledge
6. Context for Assessment	6.1 Competency may be assessed in the workplace or in a simulated workplace setting.

UNIT OF COMPETENCY : PERFORM MIXING/TINTING OF PAINTS
UNIT CODE : CON712330

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes in performing mixing/tinting of paints based on job requirements and specifications.

ELEMENTS	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Prepare materials and tools	1.1 Appropriate ***PPE*** are selected according to job requirements. 1.2 Materials and tools are prepared and selected consistent with job requirements. 1.3 ***Materials and tools*** are properly staged in line with standard operating procedures.
2. Mix/tint paints	2.1 Appropriate PPE are used according to job requirements 2.2 Paints are mixed/tinted according to job requirements 2.3 Worksite is cleaned and kept in safe state in accordance with OSHA regulations 2.4 ***Unexpected situations*** are dealt with according to company rules and regulations
3. Complete work	3.1 Final checks are made to ensure that work conforms with instructions and to requirements. 3.2 Completion report is prepared and submitted to appropriate officer. 3.3 Tools, equipment and any surplus resources and materials are checked and monitored in accordance with established procedures. 3.4 Work area is monitored as to cleanliness and safety.

RANGE OF VARIABLES

VARIABLES	RANGE
1. Materials	May include but not limited to: 1.1 Color guide 1.2 Tinting color 1.3 Paint 1.3.1 Lacquer base 1.3.2 Water base 1.3.3 Spirit/alcohol base 1.3.4 Enamel base 1.3.5 Acrylic base 1.4 Filler 1.5 Solvents/thinners
2. Tools	May include but not limited to: 2.1 Mixing stick 2.2 Empty cans 2.3 Piece of glass/board 2.4 Screw driver 2.5 Hacking knife
3. PPE	May include but not limited to: 3.1 Gloves 3.2 Dust mask 3.3 Safety shoes 3.4 Hard hat 3.5 Respirator

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Prepared and selected materials according to job requirements 1.2 Mixed/tinted paints according to job requirements 1.3 Demonstrated compliance with safety regulations applicable to worksite operations 1.4 Identified faults and problems that occur and take necessary action to rectify 1.5 Completed work without damage to materials or injury to personnel 1.6 Accomplished and submitted completion report
2. Underpinning Knowledge	2.1 Safety and maintenance 2.1.1 Hazards 2.1.2 Safety rules and regulations 2.1.3 Fire prevention 2.1.4 First aid treatment 2.1.5 Proper handling and care of tools and equipment 2.1.6 Housekeeping 2.2 Tools and equipment 2.2.1 Types of spray equipment 2.2.2 Capacity of compressor 2.3 Trade Mathematics and mensuration 2.2.1 Areas and volume 2.2.2 Ratio and proportion 2.2.3 Percentage 2.2.4 Linear measurements 2.2.5 Metric system 2.2.7 Basic Mathematical operation 2.4 Plans and specification interpretation 2.4.1 Orthographic projection 2.4.2 Sectional view 2.5 Methods and procedures 2.5.1 Color matching 2.5.2 Methods of mixing paint
3. Underpinning Skills	3.1 Interpreting plan and specifications 3.2 Following safety and maintenance procedures 3.3 Using appropriate tools and equipment 3.4 Applying trade Mathematics and mensuration 3.5 Mixing and tinting of paints according to job requirements 3.6 Following company rules and regulations

4. Resource Implications	Things necessary for the conduct of method of assessment: 4.1 Well-ventilated workplace location 4.2 Tools and equipment appropriate to mixing/tinting of color 4.3 Materials relevant to the proposed activity 4.4 Drawings and specifications relevant to the task 4.5 Appropriate PPE
5. Methods of Assessment	Competency in this unit must be assessed: 5.1 Direct observation of practical demonstration of skills 5.2 Questions related to underpinning knowledge 5.3 Portfolio 5.4 Third party report
6. Context for Assessment	6.1 Competency may be assessed in the workplace or in a simulated workplace setting.

UNIT OF COMPETENCY : **PERFORM RE-PAINTING AND/OR RE-TOUCHING WORKS**

UNIT CODE : **CON712331**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes in preparing for identifying and rectifying defects and carrying-out re-painting and/or re-touching works.

ELEMENTS	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Prepare for re-painting and re-touching works	1.1 Work instruction is secured from appropriate personnel according to job requirements. 1.2 Appropriate ***PPE*** are selected and used according to OSHA specifications. 1.3 Existing paints are examined and evaluated according to job requirements/owners specifications. 1.4 ***Materials and tools*** are selected and prepared according to job requirements.
2. Identify defects and corrective measures	2.1 Causes of defects are detected through observation of the old paint and familiarity with the locality environment. 2.2 Corrective measures are recommended based on the nature and type of defects. 2.3 Report is prepared and completed as to required specifications.
3. Carry-out re-painting and/or re-touching	3.1 Damaged parts are scraped to base of materials or substrate and smoothened for spot priming. 3.2 Surface is spot primed to cover scraped and unscraped surfaces. 3.3 Surface is smoothened, flat and even through sanding as per job requirements. 3.4 Intermediate coats are applied and sanded in line with job requirements. 3.5 Final topcoat is applied in line with standard operating procedures and manufacturer's specifications. 3.6 Proper tool usage is observed in line with manufacturer's specifications. 3.7 Worksite is cleaned and kept in safe state in line with OHSA regulations. 3.8 ***Unexpected situations*** are dealt with in line with company rules and regulations.

ELEMENTS	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
4. Complete work	4.1 Final checks are made to ensure that work conforms with job requirements. 4.2 Completion report is prepared and submitted to appropriate officer. 4.3 Tools, equipment and any surplus resources and materials are checked and monitored in accordance with established procedures. 4.4 Work area is monitored as to cleanliness and safety.

RANGE OF VARIABLES

VARIABLES	RANGE
1. Materials	May include but not limited to: 1.1 Primer coats 1.2 Paint finisher 1.3 Sand paper 1.4 Intermediate coat 1.5 Top coat 1.6 Paint remover 1.7 Tinting color 1.8 Rags 1.9 Masking tapes 1.10 Solvents/thinners 1.11 Filler
2. Tools	May include but not limited to: 2.1 Scraper 2.2 Hammer 2.3 Paint brush 2.4 Mixing stick 2.5 Putty knife 2.6 Paint roller with pan 2.7 Spray gun 2.8 Compressor 2.9 Spatula
3. PPE	May include but not limited to: 3.1 Gloves 3.2 Mask/respirator 3.3 Safety shoes 3.4 Hard hat 3.5 Safety belt 3.6 Goggles

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Evaluated and examined existing paints according job requirements/owner specifications 1.2 Detected the cause of defects through observation of the old paint and familiarity with the locality environment 1.3 Recommended corrective measures based on the nature and type of defects 1.4 Applied and sanded final topcoats according to standard procedures 1.5 Demonstrated compliance with safety regulations applicable to worksite operations 1.6 Selected materials, tools and equipment in accordance with specifications and job requirements. 1.7 Identified faults and problems that occur and take necessary action to rectify 1.8 Communicated interactively with others where applicable to ensure safe and effective work operations
2. Underpinning Knowledge	2.1 Safety and maintenance 2.1.1 Hazards 2.1.2 Safety rules and regulations 2.1.4 Fire prevention 2.1.5 First aid treatment 2.1.6 Proper handling and care of tools and equipment 2.1.7 Housekeeping 2.2 Tools and equipment 2.2.1 Types of spray equipment 2.2.2 Capacity of compressor 2.3 Trade Mathematics and mensuration 2.3.1 Linear measurements 2.3.2 Areas and volume 2.4 Methods and procedures 2.4.1 Color matching 2.4.2 Methods of mixing paint 2.4.3 Methods of re-painting and/or re-touching application 2.5.4 Paint defects and troubleshooting
3. Underpinning Skills	3.1 Following safety and maintenance procedures 3.2 Preparing materials and tools 3.3 Performing re-painting and/or re-touching works 3.4 Evaluating and examining old paints 3.5 Applying trade Mathematics and mensuration

4. Resource Implications	Things necessary for the conduct of assessment: 4.1 Workplace location 4.2 Tools and equipment appropriate to work processes 4.3 Materials relevant to the proposed activity 4.4 Drawings and specifications relevant to the task 4.5 Appropriate PPE
5. Methods of Assessment	Competency in this unit must be assessed: 5.1 Direct observation of practical demonstration of skills 5.2 Questions related to underpinning knowledge 5.3 Portfolio 5.4 Third party report
6. Context for Assessment	6.1 Competency may be assessed in the workplace or in a simulated workplace setting.

SECTION 3 TRAINING STANDARDS

These standards are set to provide technical and vocational education and training (TVET) providers with information and other important requirements to consider when designing training programs for Construction Painting NC III.

3.1 CURRICULUM DESIGN

Course Title: **CONSTRUCTION PAINTING** NC Level: **III**

Nominal Training Duration: **20 hours (Basic)**
24 hours (Common)
158 hours (Core)

Course Description:

This course is designed to enhance the knowledge, skills and desirable work attitude in Building Construction Worker (Construction Painting) NC III. It covers core competencies on preparing painting tools, materials & equipment, painting surfaces; performing painting works, mixing/tinting of paints, and re-painting and/or re-touching work; and estimating painting requirements.

BASIC COMPETENCIES

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Lead workplace communication	1.1 Communicate information about workplace processes 1.2 Lead workplace discussions 1.3 Identify and communicate issues arising in the workplace	Lecture Demonstration Practical exercises	Observation and oral questioning Written test

2. Lead small team	2.1 Provide team leadership 2.2 Assign responsibilities 2.3 Set performance expectations for team members 2.4 Supervised team performance	Lecture Demonstration Practical exercises	Observation and oral questioning Written test
3. Solve workplace problems related to work activities	3.1 Identify the problem 3.2 Determine fundamental cause problem 3.3 Determine correct / preventive action 3.4 Provide recommendation to manager	Lecture Demonstration Practical exercises	Observation and oral questioning Written test
4. Develop and practice negotiation skills	4.1 Identify relevant information in planning negotiations 4.2 Participate in negotiations 4.3 Document areas for agreement	Direct observation Simulation / role playing Case studies	Written test Practical / performance test
5. Use mathematical concepts and techniques	5.1 Identify mathematical tools and techniques to solve problem 5.2 Apply mathematical procedures / solution 5.3 Analyze results	Direct observation Simulation / role playing Case studies	Written test Practical / performance test

6. Use relevant technologies	6.1 Identify appropriate technology 6.2 Apply relevant technology 6.3 Maintenance / enhance relevant technology	Direct observation Simulation / role playing Case studies	Written test Practical performance test

COMMON COMPETENCIES

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 mensuration 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
5. Interpret technical drawings and plans	5.1 Read / Interpret blueprints and plans 5.2 Perform freehand sketching	Lecture Demonstration Practical exercises	Demonstration and oral questioning Written test

CORE COMPETENCIES

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Prepare paint, and painting materials	1.1 Prepare paint and painting materials 1.2 Prepare painting tools and equipment	Demonstration / Film viewing Modular / Self pace Distant learning	Interview Direct observation Demonstration Written exam
2. Prepare surface for painting	2.1 Inspect and clean steel surface 2.2 Inspect and clean wood surface 2.3 Inspect and clean concrete surface 2.4 Layout scaffolds/ platform 2.5 Assemble / install scaffold / platforms and ladder	Demonstration Modular	Interview Written Practical Direct observation
3. Perform painting Work	3.1 Identify and prepare the needed materials, tools and surface area 3.2 Apply base coating 3.3 Apply intermediate and finish / top coating 3.4 Dismantle scaffold	Demonstration / Film viewing Modular / Self pace learning E-learning	Interview Demonstration Observation

4. Estimate paint requirements	4.1 Determine the area to be re-painted 4.2 Compute the cost of area to be re-painted	Demonstration Modular / Self pace learning Distance learning	Interview Written Demonstration Observation
5. Perform mixing / tinting of color paint	5.1 Prepare paint 5.2 Tint paint	Demonstration Modular / Self pace learning Film Viewing	Direct observation Oral / questionnaire Demonstration of practical Skills
6. Perform painting repair work	6.1 Identify and prepare painting repair works 6.2 Rectify defect paints 6.3 Carry out painting repair works	Demonstration Modular/Self pace learning	Interview Written Practical Direct observation

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

This section specifies the qualifications of trainees. Other requirements like health and physical are also stated. Passing entry written examinations may also be indicated if necessary.

- can communicate both oral and written
- physically and mentally fit
- With good moral character
- can perform basic mathematical computation

3.4 LIST OF TOOLS, EQUIPMENT AND MATERIALS CONSTRUCTION PAINTING NC III

Recommended list of tools, equipment and materials for the training of 25 trainees for Construction Painting – NC III

TOOLS		EQUIPMENT		MATERIALS	
QTY		**QTY**		**QTY**	
25 pcs	Steel brush or cap brush	1 unit	Electrical drill	50 qt.	Catalyst
50 pcs.	Nylon/paint brush	1 unit	Compressor	50 qt.	Tinting color
50 m.	Rope	2 units	Sander/Sanding Machine	50 pail	Paint
10 pcs.	Ripping bar/crow bar	20 sets	Scaffold H frame	8 pcs.	Nail set
10 pcs.	Cold Chisel	2 units	Pulley	100 pcs.	Sand paper
10 pcs.	Cross cut saw	2 units	Ladder	10 gal.	Neutralizer
6 pcs.	Wrench/spanner	25 sets	Railing system	2 liters	Alkaline remover
2 pcs.	Screw driver set	20 sets	Scaffold tubular	20 kg.	Patching compound/ kalsomine
20 pcs.	Scraper	5 units	Spray gun	5 boxes	Litmus paper or PH paper
2 sets	Spray gun cleaning kit				Water
20 pcs.	Putty knife			50 bot.	Paint remover
12 pcs.	Chipping hammer			2 liters	Rust converter
10 pcs.	Hose couplings and fittings				Soaped water

TOOLS		EQUIPMENT		MATERIALS	
QTY		**QTY**		**QTY**	
25 pcs.	Claw hammer			20 gal.	Paint thinner
10 pcs.	Calculator			20 gal.	Lacquer thinner
25	Paint roller/pan			2 gal.	Solvent
10 pcs.	Pull push rule/tape			50 ft.	Sand paper
50 pcs.	Putty pallet			2 gal.	Concrete sealer
50 sets	Base jack			10 kilos	Rags
50 pcs.	Lumber sill			50 rolls	Masking tape
12 pcs.	Wrecking bar			4 kgs.	Concrete nail
25 sets	Platforms			25 pcs,	Mixing stick
10 pcs.	X-brace			25 pcs.	Mixing can
10 pcs.	Smooth plane			25 pcs.	Measuring cups
10 pcs.	Jack plane				
10 pcs.	Black plane				
50 pcs.	Gloves				
25 pcs.	Dust masks/Respirator				
25 pcs.	Safety shoes				
25 pcs.	Hard hat			**LEARNING MATERIALS**	
25 pcs.	Belt/safety harness				Working drawing
25 pcs.	Goggles				Color guide
25 pcs.	Overall coat				Company forms
					Paint schedule and plans
					Interactive instructional modules
					Books in Painting

3.5 TRAINING FACILITIES

Based on a class size of 25 students/trainees

Space Requirement	Size in Meters	Area in Sq. Meters	Total Area in Sq. Meters
Laboratory/Workshop Area		-	100
Lecture Room		25	25
Tool, Supply / Storage Room		10	10
Learning Resource Center		15	15
Wash room and Toilet		10	10
Facilities / Equipment / Circulation area (30% of Workshop Component Space)			48
TOTAL AREA			**208**

3.6 TRAINER'S QUALIFICATION CONSTRUCTION SECTOR

CONSTRUCTION PAINTING – NC III

Must have undergone training on Training Methodology II(TM II)
Must be a holder of National Certificate Level III
Good moral character
Must be physically and mentally fit
*Must have at least 6 months industry experience and/or teaching experience

*Optional. Only when required by the hiring institution

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 Construction Painting NC III, 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 Construction Painting NC III maybe attained through:

4.2.1 Accumulation of Certificates of Competency (COCs) in the following areas:

4.2.1.1 Prepare paint and painting materials
4.2.1.2 Prepare surface for painting
4.2.1.3 Perform painting work
4.2.1.4 Estimate painting requirements
4.2.1.5 Perform mixing / tinting of paints
4.2.1.6 Perform re-painting / re-touching work

Successful candidates shall be awarded Certificates of Competency (COCs)

4.2.2 Demonstration of competence through project-type assessment covering all the 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

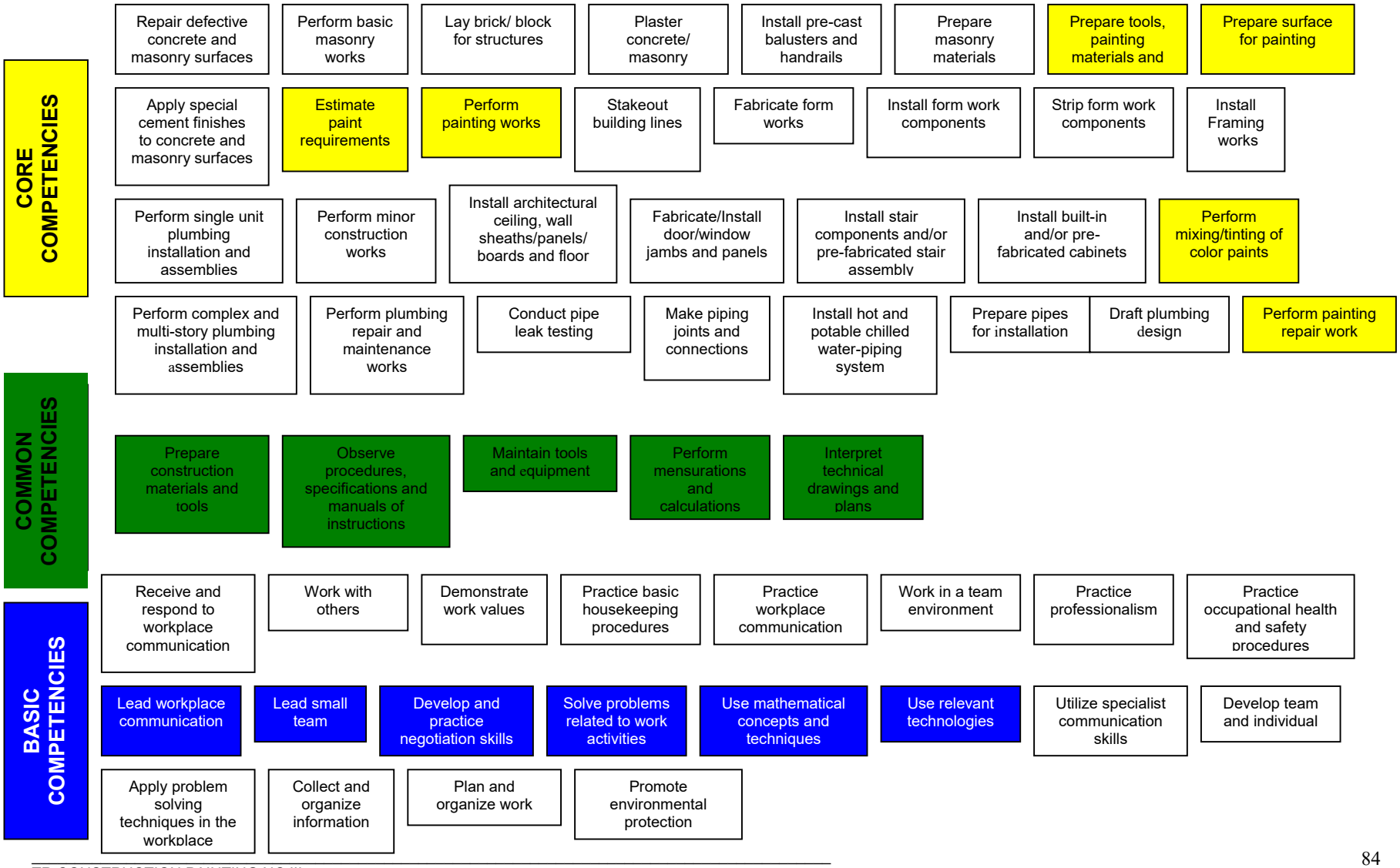
4.3.2. Experienced Workers (wage employed or self-employed)

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
CIVIL WORKS SUB-SECTOR

ANNEX A

CONSTRUCTION PAINTING NC III



DEFINITION OF TERMS

1. Alkalinity	Refers to the measurement of the concentration of base or amount of free base present.
2. Certification	Refers to the process of verifying and validating competencies of a person through assessment.
3. Competency	Is the application of knowledge, skills and attitudes to perform work activities to the standard expected in the workplace.
4. 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.
5. 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.
6. Intermediate coat	Refers the middle layer of coating system, bond between primer and topcoat.
7. Level	Refers to the category following the level of difficulty and complexity of skills and knowledge required to do the job.
8. Neutralizer	Refers to the substance that makes or reacts with a substrate (object to be coated) to render it neutral.
9. Paint	Refers in general to all types of protective coatings, and in particular to a mixture containing a pigment and vehicle, which can be spread to a thin film on interior or exterior surfaces.
10. 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.
11. Primer	Refers to the first or primary coating.
12. Primer surface / sealer	Refers to the intermediate or middle coating used after application of putty.
13. 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.
14. Range of Variable	It describes the circumstances or context in which the work is to be performed.

15. Solvent	Refers to a product contained in thinner/reducer
16. Solvent-based	Refers to a coating that uses as its solvent
17. Structural steep painting	Refers to the application of paint on structural steel surfaces for one or more several reasons: preservation, sanitation, decoration, beauty, economy, and improved lighting effect, improved heating effect, improved working conditions, distribution, camouflage and identification.
18. Substrait	Refers to the type of surface to be painted.
19. Topcoat	Refers to the fast or outermost layer of a coating system.
20. Stock	Refers to a product or material kept in storage until needed for use or transferred to some ultimate point for use.
21. Unit of Competency	Refers to a discrete aspect of work, which would normally be performed by only one person.
22. Viscosity	Refers to the density of paint before and after mixing thinner.
23. Water-based	Refers to a coating that uses water as its solvent.
24. Wall	Refers to a vertical structure or member forming an enclosure or defining a space.

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- **Skills Standards and Certification Office**
- **National Institute for Technical-Vocational Education and Training**

The Management and Staff of the Philippine Constructors Association (PCA)

The Management and Staff of the National Union of Building Construction Workers (NUBCW)