



***NATIONAL SKILLS QUALIFICATIONS/NATIONAL  
OCCUPATIONAL STANDARDS (NSQ/NOS)***

***ALUMINIUM FABRICATION AND INSTALLATION***

***LEVEL I***

***SEPTEMBER, 2025***

## **NATIONAL SKILLS QUALIFICATION**

### **GENERAL INFORMATION**

#### **OVERVIEW**

This qualification is designed for individuals who are interested in pursuing a career in Aluminium Fabrication and Installation for the award of National Skills Qualifications (NSQ). It is aimed at producing semi-skilled worker or assistant in Aluminium Fabrication and installation, NSQ Level 1 with the competencies necessary to support in the Construction Sector.

This qualification is subject to review as and when the need arises.

#### **QUALIFICATION PURPOSE**

This qualification is targeted at developing competence in assisting in Aluminium Fabrication and Installation

#### **QUALIFICATION REQUIREMENTS**

All Candidates must:

- a. Be medically fit
- b. Be physically fit
- c. Be mentally fit (Mental alertness)
- d. Have achieved all the mandatory units in the qualification
- e. Be vetted

#### **QUALIFICATION OBJECTIVES**

At the end of the qualification, the learner should be able to:

1. Apply occupational health, safety, and environmental guidelines
2. Communicate appropriately in working environment with team members
3. Work in an environment as team member.
4. Comprehend the Basic Aluminium Science
5. Identify and select Materials use in Aluminum Fabrication.
6. Identify and use Basic tools and equipment in Aluminum Fabrication.
7. Interpret Basic Drawing in Aluminum Fabrication
8. Measure and mark-out materials during fabrication.
9. Assist in cutting and grinding Operation during Aluminum Fabrication

#### **UNIT ASSESSMENT/EVIDENCE REQUIREMENTS:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is allowed in this unit and level.

**Assessment Methods to be Used Include:**

1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS) or Reflective Practice (RP)
5. Work Product (WP)
6. Assignment (ASS)

*(This depends on the Trade Areas to be assessed)*

**NATIONAL SKILLS QUALIFICATION  
LEVEL 1: ALUMINIUM FABRICATION AND INSTALLATION**

**Mandatory Units**

<b>Unit</b>	<b>Unit Reference Number</b>	<b>Unit Title</b>	<b>Credit Value</b>	<b>Guided Learning Hours</b>
1	CON/AFI/001/L1	Health, Safety and Environment	2	20
2	CON/AFI/002/L1	Communication System in a Work Environment	2	20
3	CON/AFI/003/L1	Teamwork in Construction Environment	2	20
4	CON/AFI/004/L1	Basic Aluminium Science	2	20
5	CON/AFI/005/L1	Material Identification and Selection	2	20
6	CON/AFI/006/L1	Basic Tools and Equipment	2	20
7	CON/AFI/007/L1	Basic Drawing and Interpretation	2	20
8	CON/AFI/008/L1	Measurement and Marking out	2	20
9	CON/AFI/009/L1	Cutting and grinding Operation	2	20
	<b>TOTAL</b>		18	180

**Key:**

**CON – CONSTRUCTION**

**AFI – ALUMINIUM Fabrication and installation**

## GENERAL GUIDE

<b>Unit Title</b>	Provides a clear explanation of the content of the unit.
<b>Unit Number</b>	The unique number assigned to the unit
<b>Unit Reference</b>	The unique reference number given to each unit at qualification approval by NBTE
<b>Unit Level</b>	Denotes the level of the unit within the National Skills Qualifications Framework NSQF.
<b>Unit Credit Value</b>	The value that has been given to the unit based on the expected learning time for an average learner. 1 credit value = 10 guided learning hours
<b>Unit Purpose</b>	Provides a brief outline of the unit content.
<b>Learning Outcome</b>	A statement of what a learner will know, understand or be able to do, as a result of learning process.
<b>Assessment Criteria</b>	A description of the requirements a learner must achieve to demonstrate that a learning outcome has been met.
<b>Unit Assessment Guidance</b>	Any additional guidance provided to support the assessment of the unit.
<b>Unit Guided Learning Hours</b>	The average number of hours of supervised or directed study time or assessment required to achieve a qualification or unit of qualification.

**UNIT 001: HEALTH, SAFETY AND ENVIRONMENT**

**Unit Reference Number:** CON/AFI/001/L1

**NSQ Level:** 1

**Credit Value:** 2

**Guided Learning Hours:** 20hours

**Unit Purpose:** This unit is designed to provide the learner with the knowledge and skills required for site safety, health and environment policies and procedures, maintaining good personal hygiene and application of safe work procedures.

**Unit assessment requirements/evidence requirements**

Assessment must be carried out in real workplace environment in which learning and human development training is carried out. Simulation is allowed in this unit and level.

**Assessment methods to be used include:**

1. Direct Observation (DO)
2. Question and Answers (QA)
3. Witness Testimony (WT)
4. Personal Statement (PS)

*(This depends on the Trade Areas to be assessed)*

**Unit 001: Health, Safety and Environment**

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA (PC)	Evidence Type						Evidence Ref. Page Number
The learner will:		The learner can:							
<b>LO 1:</b> <i>Know how to maintain personal health and hygiene</i>	1.1	Wear clean, smart and appropriate Personal Protective Equipment.							
	1.2	Work safely at all times, complying with health and safety and other relevant regulations and guidelines.							
	1.3	Identify first aid personnel to apply first aid to treat any cuts, grazes and wounds.							
	1.4	Report illness and infection promptly to the appropriate persons.							
	1.5	State own responsibility under the Health and Safety Act as it relates to own occupation.							
	1.6	State general rules on hygiene that must be followed.							
	1.7	List Personal Protection Equipment							
	1.8	State the importance of maintaining good personal Hygiene.							
<b>LO 2:</b> <i>Maintain a hygienic, safe and hazard free workplace.</i>	2.1	State the importance of working in a healthy, safe and hygienic workplace							
	2.2	Follow health, hygiene and safety procedures during work							
	2.3	Describe emergency procedures during work							
	2.4	Describe organizational security procedures							
	2.5	Explain the disposal of waste and pollution control with organic and inorganic waste disposal methods.							
	2.6	Identify any hazards or potential hazards and how to deal with it correctly.							
	2.7	Describe the types of hazards in the workplace that may occur and how to deal with them							

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA (PC)	Evidence Type	Evidence Ref. Page Number
The learner will:		The learner can:		
	2.8	State hazards that can be dealt with personally and those that should be reported to someone else		
	2.9	State where information about health and safety in your workplace can be obtained		
<b>LO 3:</b> <i>Maintain a hygienic, safe and secure workplace</i>	3.1	State how to warn other people about hazards and why this is important		
	3.2	State why accidents and near accidents should be reported and who they should be reported to		
	3.3	Describe the types of emergencies that may happen in the workplace and how to deal with them		
	3.4	State where to find the first-aid equipment and who the registered first-aider is in the workplace		
	3.5	State safe lifting and handling techniques that should be followed		
	3.6	State other ways of working safely that are relevant to own position and why they are important		
	3.7	Describe organizational emergency procedures, in particular fire, and how these should be followed		
	3.8	State the possible causes of fire outbreak in the workplace		
	3.9	Describe how to minimize the risk of fire outbreak in the workplace		
	3.10	State where to find the alarms and how to set them off		
	3.11	State why a fire should never be approached unless it is safe to do so.		
	3.12	State the importance of following the fire safety laws		



LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA (PC)	Evidence Type		Evidence Ref. Page Number
The learner will:		The learner can:			
	3.13	Describe organizational security procedures and why these are Important			
	3.14	State the importance of reporting all usual or non- routine incidents to the appropriate personnel			

<b>Learners Signature:</b>  <b>Assessors Signature:</b>  <b>IQA Signature (if sampled)</b>	<b>Date</b>  <b>Date:</b>  <b>Date:</b>
<b>EQA Signature (if sampled)</b>	<b>Date:</b>

**Unit 002: COMMUNICATION SYSTEM IN WORK ENVIRONMENT**

**Unit reference number:** CON/AFI/002/L1

**NSQ Level:** 1

**Credit Value:** 2

**Guided Learning Hours:** 20 hours

**Unit Purpose:** This unit is designed to provide the learner with the knowledge and skills required to establish a quality communication system in the work environment.

**Unit assessment requirements/evidence requirements.**

Assessment must be carried out in real workplace environment in which learning and human development training is carried out. Simulation is allowed in this unit and level.

**Assessment methods to be used include:**

1. Direct Observation (DO)
2. Question and Answers (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)

*(This depends on the Trade Areas to be assessed)*

## Unit 002: Communication System in Work Environment

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA (PC)	Evidence Type				Evidence Ref. Page Number			
The learner will:		The learner can:								
<b>LO 1:</b> <i>Know communication system in a work environment</i>	1.1	Use simple verbal means to pass on necessary information								
	1.2	Use nonverbal means to pass on necessary information e.g. body language								
	1.3	Explain symbols and signs appropriately								
<b>LO 2:</b> <i>Know sources of information in a work environment</i>	2.1	Locate the source of information in an organization and work environment.								
	2.2	Relate appropriately with sources of information.								
	2.3	Use the general information flow systems in a work environment								
	2.4	Use information to avoid challenges in a work situation								
	2.5	Report findings in accordance with procedure in a work environment								
<b>LO 3:</b> <i>Know basic communication in a work environment</i>	3.1	Locate the various communication equipment in the work environment								
	3.2	Use communication equipment in a work Environment.								
	3.3	Relate information effectively to the right personnel								
	3.4	Pass information effectively using Symbols, Signs and Codes.								
	3.5	Comply with general instructions in line with ethics of the work environment.								

<b>Learners Signature:</b>	<b>Date</b>
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
<b>EQA Signature (if sampled)</b>	<b>Date:</b>

**Unit 003:****TEAM WORK IN CONSTRUCTION ENVIRONMENT**

**Unit Reference Number:** CON/AFI/003/L1

**NSQ Level:** 1

**Credit Value:** 2

**Guided Learning Hours:** 20 hours

**Unit Purpose:** This unit is designed to provide the learner with the knowledge and skills required to develop team spirit and positive working relationship with colleagues.

**Unit assessment requirements/evidence requirements.**

Assessment must be carried out in real workplace environment in which learning and human development training is carried out. Simulation is allowed in this unit and level.

**Assessment methods to be used include:**

1. Direct Observation (DO)
2. Question and Answers (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)

*(This depends on the Trade Areas to be assessed)*

**Unit 003: Team Work in Construction Environment**

<b>LEARNING OBJECTIVE (LO)</b>		<b>PERFORMANCE CRITERIA (PC)</b>	<b>Evidence Type</b>	<b>Evidence Ref. Page Number</b>
<b>The learner will:</b>		<b>The learner can:</b>		
<b>LO 1:</b> <i>Positive working relationships with colleagues</i>	1.1	Identify the need for developing positive working relationships with colleagues		
	1.2	Recognize the importance of relating with other people in a way that makes them feel valued and respected.		
	1.3	Assist team members when required		
	1.4	Communicate information to colleagues about own work that might affect others		
<b>LO 2:</b> <i>Take responsibilities within the team.</i>	2.1	Recognize own role and responsibilities within the team.		
	2.2	Perform individual tasks in line with the team rules and regulations		
	2.3	Participate effectively in teamwork		
<b>LO 3:</b> <i>Compliance with policy of organization</i>	3.1	Work in line with organizational standards		
	3.2	Use organizational Code of Practice		
	3.3	Explain organizational Code of Conduct		

<b>Learners Signature:</b>	<b>Date</b>
Assessors Signature:	Date:
IQA Signature (if sampled)	Date:
<b>EQA Signature (if sampled)</b>	<b>Date:</b>

**UNIT 004:****BASIC ALUMINIUM SCIENCE**

**Unit Reference Number:** CON/AFI/004/L1

**NSQ Level:** 1

**Credit Value:** 2

**Guided Learning Hour:** 20 Hours

**Unit Purpose:** This unit is designed to equip the learner with knowledge and skills on basic Aluminium science.

**Unit assessment requirements/evidence requirements.**

Assessment must be carried out in real workplace environment in which learning and human development training is carried out. Simulation is allowed in this unit and level.

**Assessment methods to be used include:**

1. Direct Observation (DO)
2. Personal statement/Learning Journal (PS/LJ)
3. Questions and Answers (QA)
4. Witness Testimony (WT)
5. Assignment (ASS)
6. Work Products (WP)

*(This depends on the Trade Areas to be assessed)*

**UNIT 004: Basic Aluminum Science**

<b>LEARNING OBJECTIVE (LO)</b>		<b>PERFORMANCE CRITERIA (PC)</b>	<b>Evidence Type</b>	<b>Evidence Ref. Page Number</b>
<b>The learner will:</b>		<b>The learner can:</b>		
<b>LO1:</b> <i>Know basic electricity</i>	1.1	Define Electricity		
	1.2	Define Voltage		
	1.3	Differentiate between AC and DC		
<b>LO2:</b> <i>Know heat and its effect</i>	2.1	Define temperature		
	2.2	State the melting points of Aluminium		
	2.3	Define conductor and insulator		
	2.4	Identify conductors and Insulators		
<b>LO 3:</b> <i>Know types of metals</i>	3.1	Define metals and non-metals		
	3.2	Explain classes of metals		
	3.4	List properties of metals		

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQAM Signature (if sampled)	Date:
<b>EQAM Signature (if sampled)</b>	<b>Date:</b>



**Unit 005:****MATERIAL IDENTIFICATION AND SELECTION**

**Unit Reference Number:** CON/AFI/005/L1

**NSQ Level:** 1

**Credit Value:** 2

**Guided Learning Hours:** 20 hours

**Unit Purpose:** This unit is designed to equip the learner with knowledge and skills on material identification and selection in Aluminium fabrication

**Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

**Assessment methods to be used include:**

1. Direct Observation (DO).
2. Written or Oral Question (Q&A).
3. Assignment.
4. Personal Statement

*(This depends on the Trade Areas to be assessed)*

### Unit 005: Material Identification and Selection

LEARNING OBJECTIVE (LO)  The learner will:		PERFORMANCE CRITERIA (PC)  The learner can:	Evidence Type	Evidence Ref. Page Number
<b>LO 1:</b> <i>Know Aluminium profiles used in fabrication</i>	1.1	Define Aluminium		
	1.2	List types of Aluminium profiles used in fabrication		
	1.3	Identify Aluminium profile materials		
	1.4	State advantages of types of Aluminium profiles		
<b>LO 2:</b> <i>Know basic properties of Aluminium</i>	2.1	Explain physical properties of Aluminium		
	2.2	Describe physical and mechanical properties of Aluminium		
	2.3	Explain the effect of Aluminium properties on common fabrication processes		
	2.4	Select appropriate materials for fabrication of Aluminium components		
<b>LO 3:</b> <i>Describe the properties and application of various Aluminium alloys.</i>	3.1	Define Aluminium Alloys		
	3.2	List aluminium alloys		
	3.3	List application of Aluminium Alloys		
	3.4	Identify the application of Aluminium Alloys		

Learners' Signature:	Date:
Assessors' Signature:	Date:
IQA Signature (if sampled):	Date:
EQA Signature (if sampled):	Date:

**UNIT 006:****BASIC TOOLS AND EQUIPMENT**

**Unit Reference Number:** CON/AFI/006/L1

**NSQ Level:** 1

**Credit Value:** 2

**Guided Learning Hour:** 20 hours

**Unit Purpose:** This unit is designed to equip the learner with the knowledge and skills to use basic tools for Aluminium fabrication and installation.

**Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

**Assessment methods to be used include:**

1. Direct Observation (DO)
2. Questions and Answers (QA)
3. Witness Testimony (WT)
4. Assignment (ASS)

*(This depends on the Trade Areas to be assessed)*

## UNIT 006: Basic Tools and Equipment

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA (PC)	Evidence Type	Evidence Ref.	Page Number
The learner will:		The learner can:			
<b>LO 1:</b> <i>Know basic tools measuring and marking - out operations</i>	1.1	List 3 basic tools for the following fitting operations: <ul style="list-style-type: none"> <li>• Measuring</li> <li>• Marking out</li> <li>• Cutting</li> <li>• Shaping</li> <li>• Joining</li> <li>• Grinding</li> </ul>			
	1.2	Explain basic tools measuring and marking - out operations			
	1.3	Identify appropriate tools for measuring and marking - out operations			
	1.4	Identify appropriate tools for cutting operation			
	1.5	Identify appropriate tools for grinding operations activities			
<b>LO 2:</b> <i>Know maintenance and care of tools</i>	2.1	Identify defects in tools.			
	2.2	Identify appropriate lubricant for tools protection			
	2.3	Lubricate tools against corrosion			
	2.4	Store tools in: <ul style="list-style-type: none"> <li>• Toolbox</li> <li>• Metal cabinet</li> <li>• Holder(chisels)</li> </ul>			
<b>LO 3:</b> <i>Know tools requisition record</i>	3.1	Explain how to fill tool requisition form			
	3.2	State the procedure for tool requisition			
	3.3	Request tools for cutting operation			
	3.4	Return tools after use			

Learners' Signature:	Date:
Assessors' Signature:	Date:
IQA Signature (if sampled):	Date:
<b>EQA Signature (if sampled):</b>	Date:

**UNIT 007:****BASIC DRAWING AND INTERPRETATION**

**Unit Reference Number:** CON/AFI/007/L1

**NSQ Level:** 1

**Credit Value:** 2

**Guided Learning Hour:** 20 hours

**Unit Purpose:** This unit is designed to equip the learner with the knowledge and skills required in sketching and interpretation of drawings.

**Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

**Assessment methods to be used include:**

1. Direct Observation (DO)
2. Personal statement/Learning Journal (PS/LJ)
3. Questions and Answers (QA)
4. Witness Testimony (WT)
5. Assignment (ASS)
6. Work Products (WP)

*(This depends on the Trade Areas to be assessed)*

### Unit 007: Basic Drawing and Interpretation

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA (PC)	Evidence Type		Evidence Ref. Page Number
The learner will:		The learner can:			
<b>LO 1:</b> <i>Know basic elements of drawing</i>	1.1	Define drawing			
	1.2	Explain types of lines in drawing			
	1.3	Explain simple isometric shapes			
	1.4	Explain the use of angles and symbols in drawing			
	1.5	Sketch a simple drawing			
<b>LO 2:</b> <i>Know simple dimensions in drawing</i>	2.1	Explain dimensions			
	2.2	List types of dimensions			
	2.3	Produce a simple drawing with dimensions			
<b>LO 3:</b> <i>Know interpretation of simple drawing</i>	3.1	Explain how to interpret simple drawing.			
	3.2	Explain how to obtain information on patterns from a given drawing			
	3.3	Explain how to obtain information on dimension from a given drawing			
	3.4	Explain how to obtain information on materials from a given drawing			

Learners' Signature:	Date:
Assessors' Signature:	Date:
IQA Signature (if sampled):	Date:
EQA Signature (if sampled):	Date:

**UNIT 008:****MEASUREMENT AND MARKING OUT**

**Unit Reference Number:** CON/AFI/008/L1

**NSQ Level:** 1

**Credit Value:** 2

**Guided Learning Hour:** 20 hours

**Unit Purpose:** This unit is designed to equip learners with basic knowledge and skills for measurement and marking-out operation.

**Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

**Assessment methods to be used include:**

1. Direct Observation (DO)
2. Personal statement/Learning Journal (PS/LJ)
3. Questions and Answers (QA)
4. Witness Testimony (WT)
5. Assignment (ASS)
6. Work Products (WP)

*(This depends on the Trade Areas to be assessed)*



## Unit 008: Measurement and Marking Out

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA (PC)	Evidence Type		Evidence Ref. Page Number
The learner will:		The learner can:			
<b>LO 1:</b> <i>Know measurement operation</i>	1.1	Define measurement			
	1.2	Explain units of measurements.			
	1.3	Convert measuring units for the following: <ul style="list-style-type: none"> <li>• Length</li> <li>• Mass</li> <li>• Area</li> <li>• Volume</li> <li>• Temperature</li> </ul>			
	1.4	Measure using SI units.			
	1.5	List basic measurement tools			
	1.6	Use measurement tools to carry out measurement			
	1.7	Explain the importance of accuracy in measurement			
	1.8	Explain tolerance in measurement			
<b>LO 2:</b> <i>Know marking out operation</i>	2.1	Define marking-out			
	2.2	List basic marking out tools			
	2.3	List various methods of marking out			
	2.4	Use marking out tools to perform marking out operation			
	2.5	Use of template in marking-out operation			
<b>LO 3:</b> <i>Know care for marking and measuring tools</i>	3.1	Explain how to care for measuring tools			
	3.2	Carry out care of the measuring tools			
	3.3	Explain how to care for marking-out tools			
	3.4	Carry out care for marking out tools			

Learners' Signature:

Date:

Assessors' Signature:

Date:

IQA Signature (if sampled):

Date:

**EQA Signature (if sampled):**

Date:

**UNIT 009:****CUTTING AND GRINDING OPERATIONS**

**Unit Reference Number:** CON/AFI/009/L1

**NSQ Level:** 1

**Credit Value:** 2

**Guided Learning Hour:** 20 hours

**Unit Purpose:** This unit is designed to equip learners with knowledge and skills in cutting and grinding operations.

**Unit assessment requirements/ evidence requirements:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

**Assessment methods to be used include:**

1. Direct Observation (DO)
2. Personal statement/Learning Journal (PS/LJ)
3. Questions and Answers (QA)
4. Witness Testimony (WT)
5. Assignment (ASS)
6. Work Products (WP)

*(This depends on the Trade Areas to be assessed)*

## Unit 009: Cutting and Grinding Operations

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA (PC)	Evidence Type					Evidence Ref. Page Number			
The learner will:		The learner can:									
<b>LO 1:</b> <i>Know cutting operations</i>	1.1	Explain cutting operation									
	1.2	List various methods of cutting									
	1.3	List cutting tools									
	1.4	Explain the right cutting technique and posture									
	1.5	Carry out cutting operation using appropriate tools									
	1.6	Describe safe use of cutting tools									
	1.7	Clean and clear work environment after cutting and grinding									
	1.8	Dispose waste after cleaning									
<b>LO 2:</b> <i>Know grinding operations</i>	2.1	Define grinding operation									
	2.2	Explain the importance of grinding operations									
	2.3	List types of grinding operations									
	2.4	List grinding tools									
	2.5	Explain manual grinding operation									
	2.6	Perform manual grinding operation									
	2.7	Explain electrical grinding operation.									
	2.8	Perform electrical grinding operation									
	2.9	Explain safe use of grinding tools									
<b>LO 3:</b> <i>Know the proper handling of cutting and grinding tools</i>	3.1	Explain the procedure for changing worn out cutting and grinding disc									
	3.2	Assist replacement of worn out cutting and grinding disc									
	3.3	Explain the care for various cutting tools									
	3.4	Explain the care for various grinding tools									

Learners' Signature:	Date:
Assessors' Signature:	Date:
IQA Signature (if sampled):	Date:
<b>EQA Signature (if sampled):</b>	Date:



***NATIONAL SKILLS QUALIFICATIONS/NATIONAL  
OCCUPATIONAL STANDARDS (NSQ/NOS)***

***ALUMINIUM FABRICATION AND INSTALLATION***

***LEVEL 2***

***SEPTEMBER, 2025***

# **NATIONAL SKILLS QUALIFICATION**

## **GENERAL INFORMATION**

### **OVERVIEW**

This qualification is designed for individuals who are interested in pursuing a career in the Aluminium Fabrication and Installation for the award of National Skills Qualifications (NSQ). It is aimed at producing semi-skilled worker or assistant in Aluminium Fabrication and Installation, NSQ Level II with the competencies necessary to support in the Construction Sector.

This qualification is subject to review as and when the need arises.

### **QUALIFICATION PURPOSE**

This qualification is targeted at developing competence in assisting in Aluminium Fabrication and Installation

### **QUALIFICATION REQUIREMENTS**

All Candidates must:

- a. Be medically fit
- b. Be physically fit
- c. Be mentally fit (Mental alertness)
- d. Have achieved all the mandatory units in the qualification
- e. Be vetted

### **QUALIFICATION OBJECTIVES**

At the end of the qualification, the learner should be able to:

1. Communicate effectively in workplace
2. Work in a team
3. Comply with health and safety requirement
4. Interpret basic Aluminium fabrication drawings, including dimensions, symbols, and specifications.
5. Perform accurate fabrication of Aluminium windows, including measuring, cutting, assembling, fitting, and installing components.
6. Carry out the fabrication and on-site installation of Aluminium doors, applying correct tools, techniques, and quality control measures.

### **UNIT ASSESSMENT/EVIDENCE REQUIREMENTS:**

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is allowed in this unit and level.

**Assessment Methods to be Used Include:**

1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS) or Reflective Practice (RP)
5. Work Product (WP)
6. Assignment (ASS)

*(This depends on the Trade Areas to be assessed)*



## NATIONAL SKILLS QUALIFICATION

### LEVEL 2: ALUMINIUM FABRICATION AND INSTALLATION

#### Mandatory Units

Unit	Unit Reference Number	Unit Title	Credit Value	Guided Learning Hours
1	CON/AFI/001/L2	Health, Safety and Environment	3	30
2	CON/AFI/002/L2	Communication System in a Work Environment	3	30
3	CON/AFI/003/L2	Teamwork in Construction Environment	3	30
4	CON/AFI/004/L2	Aluminium Fabrication drawing	4	40
5	CON/AFI/005/L2	Fabrication of Aluminium Windows	6	60
6	CON/AFI/006/L2	Fabrication of Aluminium Doors	6	60
	<b>Total</b>		25	250

## GENERAL GUIDE

<b>Unit Title</b>	Provides a clear explanation of the content of the unit.
<b>Unit Number</b>	The unique number assigned to the unit
<b>Unit Reference</b>	The unique reference number given to each unit at qualification approval by NBTE
<b>Unit Level</b>	Denotes the level of the unit within the National Skills Qualifications Framework NSQF.
<b>Unit Credit Value</b>	The value that has been given to the unit based on the expected learning time for an average learner. 1 credit value = 10 guided learning hours
<b>Unit Purpose</b>	Provides a brief outline of the unit content.
<b>Learning Outcome</b>	A statement of what a learner will know, understand or be able to do, as a result of learning process.
<b>Assessment Criteria</b>	A description of the requirements a learner must achieve to demonstrate that a learning outcome has been met.
<b>Unit Assessment Guidance</b>	Any additional guidance provided to support the assessment of the unit.
<b>Unit Guided Learning Hours</b>	The average number of hours of supervised or directed study time or assessment required to achieve a qualification or unit of qualification.

**UNIT 001:** **HEALTH, SAFETY AND ENVIRONMENT**

**Unit Reference Number:** CON/AFI/001/L2

**NSQ Level:** 2

**Credit Value:** 3

**Guided Learning Hours:** 30 hours

**Unit Purpose:** This unit is designed to provide the learner with the knowledge and skills required for maintaining good personal hygiene and application of safe work procedures.

**Unit assessment requirements/evidence requirements**

Assessment must be carried out in real workplace environment in which learning and human development training is carried out. Simulation is allowed in this unit and level.

**Assessment methods to be used include:**

1. Direct Observation (DO)
2. Question and Answers (QA)
3. Witness Testimony (WT)
4. Personal Statement (PS)

*(This depends on the Trade Areas to be assessed)*

### Unit 001: Health, Safety and Environment

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA (PC)	Evidence Type				Evidence Ref. Page Number			
The learner will:		The learner can:								
<b>LO 1:</b> <i>Know how to Maintain personal health and hygiene</i>	1.1	Wear clean, smart and appropriate Personal Protective Equipment (PPE).								
	1.2	Work safely at all times, complying with health and safety and other relevant regulations and Guidelines.								
	1.3	Identify first aid personnel to apply first aid to treat any cuts, grazes and wounds.								
	1.4	Report illness and infection promptly to the appropriate Persons.								
	1.5	State own responsibility under the health and safety Act as it relates to own occupation.								
	1.6	State general rules on hygiene that must be followed.								
	1.7	Mention Personal Protection Equipment that use for Head Protection, Foot Protection, Face and eye Protection, Hand and Body protection.								
	1.8	State the importance of maintaining good personal Hygiene.								
<b>LO 2:</b> <i>Maintain a hygienic, safe and hazard free workplace.</i>	2.1	State the importance of working in a healthy, safe and hygienic workplace								
	2.2	Follow health, hygiene and safety procedures during work								
	2.3	Practice emergency procedures during work								
	2.4	Follow organizational security procedures								
	2.5	Ensure the disposal of waste and pollution control with organic and Inorganic waste disposal methods.								
	2.6	Identify any hazards or potential hazards and how to deal with it correctly.								

LEARNING OBJECTIVE (LO)  The learner will:		PERFORMANCE CRITERIA (PC)  The learner can:	Evidence Type				Evidence Ref. Page Number			
	2.7	Describe the types of hazards in the workplace that may occur and how to deal with them								
	2.8	State hazards that can be dealt with personally and those that should be reported to someone else								
	2.9	State where information about health and safety in your workplace can be obtained								
<b>LO 3:</b> <i>Maintain a hygienic, safe and secure workplace</i>	3.1	State how to warn other people about hazards and why this is important								
	3.2	State why accidents and near accidents should be reported and who they should be reported to								
	3.3	Describe the types of emergencies that may happen in the workplace and how to deal with them								
	3.4	State where to find the first-aid equipment and who the registered first-aider is in the workplace								
	3.5	State safe lifting and handling techniques that should be followed								
	3.6	State other ways of working safely that are relevant to own position and why they are important								
	3.7	Describe organizational emergencies procedures, in particular fire, and how these should be followed								
	3.8	State the possible causes for fire in the workplace								
	3.9	Describe how to minimize the possibility of fire in the workplace								
	3.10	State where to find the alarms and how to set them off								
	3.11	State why a fire should never be approached unless it is safe to do so.								
	3.12	State the importance of following the fire safety laws								

<b>LEARNING OBJECTIVE (LO)</b> <b>The learner will:</b>		<b>PERFORMANCE CRITERIA (PC)</b> <b>The learner can:</b>	<b>Evidence Type</b>				<b>Evidence Ref. Page Number</b>
	3.13	Describe organizational security procedures and why these are Important					
	3.14	State the importance of reporting all usual or non- routine incidents to the appropriate personnel					

Learners' Signature:	Date:
Assessors' Signature:	Date:
IQA Signature (if sampled):	Date:
<b>EQA Signature (if sampled):</b>	Date:

**UNIT 002:****COMMUNICATION SYSTEM IN WORK ENVIRONMENT**

**Unit Reference Number:** CON/AFI/002/L2

**NSQ Level:** 2

**Credit Value:** 3

**Guided Learning Hours:** 30 hours

**Unit Purpose:** This unit is designed to provide the learner with the knowledge and skills required to communicate effectively in the work environment.

**Unit assessment requirements/evidence requirements.**

Assessment must be carried out in real workplace environment in which learning and human development training is carried out. Simulation is allowed in this unit and level.

**Assessment methods to be used include:**

1. Direct Observation (DO)
2. Question and Answers (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)

*(This depends on the Trade Areas to be assessed)*

## Unit 002: Communication System in Work Environment

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA (PC)	Evidence Type	Evidence Ref. Page Number
The learner will:		The learner can:		
<b>LO 1:</b> <i>Know communication system in a work environment</i>	1.1	Use a simple verbal means to pass on necessary information		
	1.2	Use nonverbal means to pass on necessary information e.g. body language		
	1.3	Explain symbols and signs appropriately		
<b>LO 2:</b> <i>Know Sources of information in a work Environment</i>	2.1	Locate the source of information in an organization and work Environment.		
	2.2	Relate appropriately with source of information.		
	2.3	Use the general information flow systems in a work environment		
	2.4	Use information to avoid challenges in a work situation		
	2.5	Report findings in accordance to Procedure in a work environment		
<b>LO 3:</b> <i>Know basic communication in a work environment</i>	3.1	Locate the various communication equipment in the work environment		
	3.2	Use communication equipment in a work Environment.		
	3.3	Relate information effectively to the right personnel		
	3.4	Pass information effectively using Symbols, Signs and Codes.		
	3.5	Comply with general instructions in line with ethics of the work Environment.		



Learners' Signature:

Date:

Assessors' Signature:

Date:

IQA Signature (if sampled):

Date:

**EQA Signature (if sampled):**

Date:

**UNIT 003:****TEAMWORK IN CONSTRUCTION ENVIRONMENT**

**Unit Reference Number:** CON/AFI/003/L2

**NSQ Level:** 2

**Credit Value:** 3

**Guided Learning Hours:** 30 hours

**Unit Purpose:** This unit is designed to provide the learner with the knowledge and skills required to develop team spirit and positive working relationship with colleagues.

**Unit assessment requirements/evidence requirements.**

Assessment must be carried out in real workplace environment in which learning and human development training is carried out. Simulation is allowed in this unit and level.

**Assessment methods to be used include:**

1. Direct Observation (DO)
2. Question and Answers (QA)
3. Witness Testimony (WT)
4. Personal statement (PS)

*(This depends on the Trade Areas to be assessed)*

### Unit 003: Teamwork in Construction Environment

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA (PC)	Evidence Type	Evidence Ref. Page Number
The learner will:		The learner can:		
<b>LO 1:</b> <i>Positive working relationships with colleagues</i>	1.1	Identify the need for developing positive working relationships with colleagues		
	1.2	Recognize the importance of relating with other people in a way that makes them feel valued and respected.		
	1.3	Assist Team members when required		
	1.4	Report the personnel when request for assistance fall outside area of responsibility		
	1.5	Communicate information to colleagues about own work that might affect others		
<b>LO 2:</b> <i>Take responsibilities within the team.</i>	2.1	Recognize own role and responsibilities within the team.		
	2.2	Perform individual tasks in line with the team rules and regulations		
	2.3	Participate effectively in teamwork		
<b>LO 3:</b> <i>Comply with policy of organization</i>	3.1	Work in line with organizational Standard		
	3.2	Use organizational code of practice		
	3.3	Explain organizational Code of Conduct		

Learners' Signature:	Date:
Assessors' Signature:	Date:
IQA Signature (if sampled):	Date:
EQA Signature (if sampled):	Date:

**UNIT 004:****ALUMINIUM FABRICATION DRAWING**

**Unit Reference Number:** CON/AFI/004/L2

**NSQ Level:** 2

**Credit Value:** 4

**Guided Learning Hour:** 40 hours

**Unit Purpose:** This unit is designed to equip learner with the knowledge and skills in Aluminium Fabrication drawing.

**Unit assessment requirements/evidence requirements.**

Assessment must be carried out in real workplace environment in which learning and human development training is carried out. Simulation is allowed in this unit and level.

**Assessment methods to be used include:**

1. Direct Observation (DO)
2. Personal statement/Learning Journal (PS/LJ)
3. Questions and Answers (QA)
4. Witness Testimony (WT)
5. Assignment (ASS)
6. Work Products (WP)

*(This depends on the Trade Areas to be assessed)*

# Unit 004: Aluminum Fabrication Drawing

LEARNING OBJECTIVE (LO)		PERFORMANCE CRITERIA (PC)	Evidence Type		Evidence Ref. Page Number
The learner will:		The learner can:			
<b>LO 1</b> <i>Know basic elements of drawing</i>	1.1	Define fabrication drawing.			
	1.2	Explain different types of lines used in fabrication drawings.			
	1.3	Identify different types of lines used in fabrication drawings			
	1.4	Describe simple isometric shapes.			
	1.5	Explain the use of angles and symbols in fabrication drawings.			
	1.6	Create a basic sketch representing a fabrication component			
<b>LO 2</b> <i>Know simple dimensions in drawing.</i>	2.1	Explain dimensions in fabrication.			
	2.2	Explain the importance of dimensions in fabrication.			
	2.3	List types of dimensions used in drawings.			
	2.4	Produce a simple drawing accurately with appropriate dimensions			
<b>LO 3</b> <i>Interpret simple Aluminium fabrication drawings</i>	3.1	Explain how to interpret fabrication drawings.			
	3.2	Extract pattern information from a given drawing.			
	3.3	Identify dimensional data from fabrication drawings.			
	3.4	Identify the required materials as specified in a drawing			

**UNIT 005: FABRICATION OF ALUMINIUM WINDOWS**

**Unit Reference Number:** CON/AFI/005/L2

**NSQ Level:** 2

**Credit Value:** 6

**Guided Learning Hours:** 60 hours

**Unit Purpose:** This unit is designed to equip learners with the fundamental knowledge and skills required to fabricate Aluminum windows.

**Unit assessment requirements/ evidence requirement**

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

**Assessment methods to be used include:**

1. Direct Observation (DO)
2. Written or Oral Questions (Q&A)
3. Assignments
4. Personal Statement
5. Recognition of Prior Learning (RPL)
6. Work Product (WP)

*(This depends on the Trade Areas to be assessed)*

**Unit 005: Fabrication of Aluminum Windows**

<b>LEARNING OBJECTIVE (LO)</b>  <b>The learner will:</b>		<b>PERFORMANCE CRITERIA (PC)</b>  <b>The learner can:</b>	<b>Evidence Type</b>	<b>Evidence Ref. Page Number</b>
<b>LO 1:</b> <i>Know Aluminium window components and materials</i>	1.1	List types of Aluminium windows		
	1.2	Identify types of Aluminium window profiles and accessories		
	1.3	Describe functions of Aluminium components in window fabrication		
	1.4	Select appropriate materials for different window types		
<b>LO 2:</b> <i>Measure and mark out materials accurately.</i>	2.1	Use measuring tools to obtain correct window dimensions		
	2.2	Interpret fabrication drawings or specifications		
	2.3	Mark out Aluminium profiles accurately based on measurements.		
<b>LO 3:</b> <i>Cut and prepare Aluminium profiles for fabrication</i>	3.1	Select appropriate cutting tools and equipment		
	3.2	Cut profiles to specified sizes		
	3.4	File or smooth cut edges as required		
<b>LO 4:</b> <i>Assemble Aluminum window frames.</i>	4.1	Align profiles correctly		
	4.2	Join profiles correctly using fixtures or fasteners		
	4.3	Drill necessary holes or components		
	4.4	Fit necessary holes or components		
	4.5	Check square of frame		
	4.6	Fit and align frame		
<b>LO 5:</b> <i>Install fittings and accessories.</i>	5.1	Identify required fittings (e.g., hinges, handles, locks)		
	5.2	Attach accessories securely and accurately		

LEARNING OBJECTIVE (LO)  The learner will:		PERFORMANCE CRITERIA (PC)  The learner can:	Evidence Type	Evidence Ref. Page Number
	5.3	Assist to test functional operation of fittings		
	5.4	Assist to ensure fabricated windows meet specified quality standards		
<b>LO 6:</b> <b><i>Install Aluminum windows on site.</i></b>	6.1	Prepare window openings for installation of sub frames		
	6.2	Position and fix Aluminium windows securely in place		
	6.3	Use sealants or insulation materials where necessary		
	6.4	Assist to inspect, level and adjust installation for proper operation and finish		

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled):	Date:
<b>EQA Signature (if sampled):</b>	Date:



**UNIT 006:****FABRICATION OF ALUMINIUM DOORS**

**Unit reference number:** CON/AFI/006/L2

**NSQ Level:** 2

**Credit value:** 6

**Guided learning hours:** 60 hours

**Unit Purpose:** This unit is designed to equip learners with the fundamental knowledge and skills required to fabricate Aluminum Doors.

**Unit assessment requirements/ evidence requirement**

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

**Assessment methods to be used include:**

1. Direct Observation (DO)
2. Written or Oral Questions (Q&A)
3. Assignments
4. Personal Statement
5. Recognition of prior learning (RPL)
6. Work Product (WP)

*(This depends on the Trade Areas to be assessed)*

**Unit 006: Fabrication of Aluminum Doors**

<b>LEARNING OBJECTIVE (LO)</b>  <b>The learner will:</b>		<b>PERFORMANCE CRITERIA (PC)</b>  <b>The learner can:</b>	<b>Evidence Type</b>		<b>Evidence Ref. Page Number</b>
<b>LO 1:</b> <i>Know Aluminum doors components and materials</i>	1.1	List types of Aluminum doors			
	1.2	Identify types of Aluminium Doors profiles and accessories			
	1.3	Describe functions of Aluminum components in door fabrication			
	1.4	Select appropriate materials for different Door types			
<b>LO 2:</b> <i>Measure and mark out materials accurately</i>	2.1	Identify measuring tools to obtain correct dimensions			
	2.2	Use measuring tools to obtain correct dimensions			
	2.3	Interpret fabrication drawings or specifications			
	2.4	Mark out Aluminium profiles accurately based on measurements.			
<b>LO 3:</b> <i>Cut and prepare Aluminum profiles for fabrication</i>	3.1	Identify appropriate cutting tools and equipment			
	3.2	Select appropriate cutting tools and equipment			
	3.3	Cut profiles to specified sizes			
	3.4	File or smooth cut edges as required			
<b>LO 4:</b> <i>Assemble Aluminum doors frames.</i>	4.1	Align and join profiles correctly using fixtures or fasteners			
	4.2	Drill and fit necessary holes or components			
	4.3	Check square of frame			
	4.4	Fit and align frame			
<b>LO 5:</b> <i>Install fittings and accessories.</i>	5.1	Identify required fittings (e.g., hinges, handles, locks)			
	5.2	Attach accessories securely and accurately to sub frame			
	5.3	Assist to test functional operation of fittings			

<b>LEARNING OBJECTIVE (LO)</b>  <b>The learner will:</b>		<b>PERFORMANCE CRITERIA (PC)</b>  <b>The learner can:</b>	<b>Evidence Type</b>				<b>Evidence Ref. Page Number</b>			
	5.4	Ensure fabricated Doors meet specified quality standards								
<b>LO 6:</b> <i>Install Aluminum doors on site.</i>	6.1	Prepare Doors openings for installation								
	6.2	Position and fix Aluminium Doors securely in place								
	6.3	Apply sealants or insulation materials where necessary								
	6.4	Inspect and adjust installation for proper operation and finish								

Learners Signature:	Date:
Assessors Signature:	Date:
IQA Signature (if sampled):	Date:
<b>EQA Signature (if sampled):</b>	
Date:	

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