



**DNOS.WPT.01
FIRST EDITION**

**DRAFT NATIONAL OCCUPATIONAL STANDARD FOR
WOOD PROCESSING TECHNOLOGIST**

ZAMBIA QUALIFICATIONS AUTHORITY

APPROVING AUTHORITY

This National Occupational Standard has been prepared and published under the authority of the Zambia Qualifications Authority Board on 15th February 2024.

ZAMBIA QUALIFICATIONS AUTHORITY

The Zambia Qualifications Authority Act No. 13 of 2011 was enacted by the Government of the Republic of Zambia to ***“provide for the development and implementation of a national qualifications framework; provide for the registration and accreditation of qualifications; establish the Zambia Qualifications Authority; provide measures to ensure that standards and registered qualifications are internationally comparable; and provide for matters connected with, or incidental to the foregoing”***. Among other functions, ZAQA is responsible for ***determining national standards for any occupation***, through various sector specific National Occupational Standards Development Teams (NOSDTs).

REVISION OF NATIONAL OCCUPATIONAL STANDARDS

National Occupational Standards (NOS) shall be revised every after **5 years**, or whenever necessary, by the issue of either amendments or of revised editions. It is important that users of NOS ascertain that they are in possession of the latest amendments or editions.

NOS DEVELOPMENT TEAM RESPONSIBLE

This National Occupational Standard was prepared by the Manufacturing National Occupational Standards Development Team, upon which the following organisations were represented:

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2. Copperbelt University (CBU)
3. Engineering Institution of Zambia (EIZ)
4. Good Time Steel Company Zambia Limited (GTS)
5. Lusaka Vocational and Technical College (LVTC)
6. Makeni Ecumenical Centre (MEC)
7. Ministry of Commerce, Trade and Industry (MCTI)
8. Ministry of Health (MoH)
9. National Institute for Scientific and Industrial Research (NISIR)
10. Northern Technical College (NORTEC)
11. University of Lusaka (UNILUS)
12. University of Zambia (UNZA)
13. Zambia Association of Manufacturers (ZAM)
14. Zambia Forestry College (ZFC)
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FOREWORD

The Zambia Qualifications Authority (ZAQA) is a statutory body under the Ministry of Higher Education established by ZAQA Act No. 13 of 2011 to “**develop and implement a national qualifications framework; register and accredit qualifications; and ensure that standards and registered qualifications are internationally comparable**”.

Among other functions, ZAQA is responsible for “**determining national standards for any occupation**”, through various sector specific National Occupational Standards Development Teams (NOSDTs) of experts composed of representation from appropriate authorities, government departments, industry, academia, regulators, consumer associations and non-governmental organisations, etc.

This National Occupational Standard (NOS) has been developed by the Manufacturing National Occupational Standards Development Team in accordance with the procedures and guidelines of ZAQA. All users should ensure that they have the latest edition of this publication as NOS are revised from time to time.

This NOS shall be used by, among others, industry, employers, quality assurance bodies, awarding and professional bodies and education and training institutions, as a benchmark to identify training needs, develop job profiles/descriptions, develop curricula and learning programmes, in various sectors where the occupation exists. In the Manufacturing sector, a demonstration of competence against this NOS may be required in order to run a business or practice a craft or profession.

JUSTIFICATION

Wood Processing involves converting logs and other raw wood materials into timber, veneer, plywood, block board and a wide variety of finished wood products. A Wood Processing Technologist is central to this sector as he/she is responsible for planning operations, designing the products to be produced, acquiring raw materials and servicing the woodworking machines and maintaining tools.

This National Occupational Standard highlights core knowledge, skills, competences and personal attributes that Wood Processing Technologist must possess to be successful in their jobs.

ACRONYMS AND ABBREVIATIONS

CS	Core Skill
DNOS	Draft National Occupational Standard
WPT	Wood Processing Technologist
NOS	National Occupational Standard
NOSDT	National Occupational Standards Development Team
OK	Organisational Knowledge
PC	Performance Criteria
PS	Professional Skill
RK	Regulatory Knowledge
RPL	Recognition of Prior Learning
TK	Technical Knowledge
ZAQA	Zambia Qualifications Authority
ZQF	Zambia Qualifications Framework

GLOSSARY OF TERMS

For the purposes of this NOS, the following terms and definitions shall apply:

Core Skills/Generic Skills: A group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the NOS, these include communication related skills that are applicable to most job roles.

Function: An activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of NOS.

Job Title: A unique set of functions that together form a unique employment opportunity in an organisation.

Knowledge and Understanding: Statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.

National Occupational Standards (NOS): Statements of the standards of performance individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding. They are precise descriptions of what an individual is expected to be able to do in his/her work role.

National Occupational Standards (NOS) Code: A unique reference code that identifies a NOS.

National Occupational Standards Development Team (NOSDT): An established group of national stakeholders/experts responsible for the development of National Occupational Standards within a specific economic sector or occupation.

Occupation: A set of job roles, which perform similar/related set of functions in an industry.

Organisational Context: The manner in which the organisation is structured and how it operates, including the extent of operative knowledge that managers have in their relevant areas of responsibility.

Performance Criteria: Statements that together specify the standard of performance required when carrying out a task.

Scope: A set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on the quality of performance required.

Sector: A conglomeration of different business operations having similar businesses and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.

Sub Sector: A further breakdown of the sector based on the characteristics and interests of its components.

Technical Knowledge: The specific knowledge needed to accomplish specific designated responsibilities.

Unit Title: An overall statement about what the incumbent should be able to do.

1. OVERVIEW

This is an introductory section providing a brief summary and specific information or commentary about the content of the NOS and the targeted sector and occupation to help the user judge whether it is relevant to them.

NOS Code	NOS. WPT.01
Occupation	Wood processing
Job Title	Wood Processing Technologist
Job Description	A Wood Processing Technologist is a person responsible for planning and designing the wood products to be produced, acquiring raw materials, supervising workers and servicing the woodworking machines. He/she also performs inspections on processed materials and finalised wood products for quality.
Job Purpose	A Wood Processing Technologist is responsible for converting raw wood materials into timber, veneer, plywood, block board and a wide variety of finished wood products
ZQF Level	6
Sector	Manufacturing
Sub sectors	Wood Product Manufacturing
Other Economic Sector(s) in which the Occupation is Practiced	Mining, Energy, Construction, Education, Government Ministries and Agencies, etc.
Other Similar Jobs that can be performed by the Wood Processing Technologist	Carpenter, Tutor/Trainer and consultancy.
Minimum Educational Job Entry Qualification(s)	Diploma
Practicing License Requirements (if any)	Membership with: The Zambia Institute of Manufacturers EIZ
Training/RPL	1. Use of ICTs (Internet, Computer packages, Email, Computer Software and Hardware necessary for the job.) 2. How to sketch manually and transfer to CAD 3. Drawing Quality Enhancement Methods
Minimum Job Entry Age	21 years
Prior Experience (Suggested)	Minimum of 1 year internship in wood processing industries
Performance Criteria	As described in the Units under Section 4

2. SCOPE

This National Occupational Standard specifies the fundamental knowledge and understanding, skills and competences that Wood Processing Technologists must possess to be successful in their jobs.

3. PERSONAL ATTRIBUTES (VALUES, ETHICS AND ATTITUDES)

This job requires an individual to possess ability to apply advanced mathematical principles and statistics to solve problems, exceptional technical and problem-solving skills as well as reasoning ability. He/she must have the ability to communicate effectively and clearly, as well as plan and prioritise their work. The individual must be courteous, creative, self-motivated, a great team worker, quality conscious, occupational health and safety orientated and physically fit. He/she must have experience in using AutoCAD and ability to use fingers, hands and feet with ease to complete the assigned task (dexterity).

4. UNITS AND ELEMENTS

This NOS is divided into **5 Units** representing the tasks that a jobholder should undertake in his/her day-to-day work. The Units are further broken down into elements depicting the number of activities to be carried out for the successful execution of a particular task.

UNIT 1. This Unit covers the skills and knowledge required by a Wood Processing Technologist to work according to personal health, safety and environmental rules and protocols at the site].

Unit No.	1
Unit Title	Safety, Health and Environmental at the working site
Description	This Unit describes the skills and knowledge required to work according to health, safety and environmental rules and protocols at the working site.
Scope	<p>This Unit covers the following:</p> <ul style="list-style-type: none"> • Ensure that all health and safety rules and regulations are followed by the Technologist and other employees • Ensure the operations of the establishment conforms to the required environmental protection standards • Ensure the safety of the employees, plant and equipment
Performance Criteria (PC) with respect to the Scope	
Element	Performance Criteria (PC)
Ensure that all health and safety rules and regulations are followed by the Technologist and other employees.	<p>To be competent, the individual must be able to:</p> <p>PC1. Interpret and implement the safety and health policies for the company</p> <p>PC2. Interpret and implement the safety and health regulations for the company</p> <p>PC3. Identify hazards and risks of all aspect of the operations of the plant and equipment</p>
Ensure the operations of the establishment conforms to the required environmental protection standards	<p>To be competent, the individual must be able to:</p> <p>PC4. Implement the safety and health policies for the company</p> <p>PC5. Implement the safety and health regulations for the company</p> <p>PC6. Eliminate hazards and risks of all aspects of the operations of the plant and equipment</p> <p>PC7. Observe environmental protection standards for the company</p>
Ensure the safety of the employees, plant and equipment	<p>To be competent, the individual must be able to:</p> <p>PC8. Apply the standard operating procedures for the employees, plant and equipment of the company</p> <p>PC9. Control hazards and assess risks of all aspect of the operations of the plant and equipment</p>
Knowledge and Understanding (K)	
A. Organisational Context (Knowledge of the company/ organisation and its processes)	<p>The individual on the job must demonstrate knowledge and understanding of:</p> <p>OK1. The company safety and health policies</p> <p>OK2. The company environmental policies and regulations</p> <p>OK3. The company standard operating procedures</p>

B. Technical Knowledge	The individual on the job must demonstrate knowledge and understanding of: TK1. Environmental risk assessment TK2. Safety and health risk assessment of the workstation TK3. Plant and equipment operation risk assessment
C. Regulatory Context (knowledge of rule and regulations)	The individual on the job must demonstrate knowledge and understanding of: RK1. Factories Act and Regulations RK2. EIZ ACT RK3. Mine Safety Act and Regulations RK4. Occupational Health and Safety Act and Regulations RK5. Workers' Compensation Act and Regulations RK6. Explosives Act and Regulations RK7. The Environmental Management Act RK8. The Employment Code Act
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The individual on the job must be able to: CS1. Write in English (at least working level) and/or have the means to give simple instructions in the local language used at the site CS2. Prepare and provide clear and simple instructions, details and sketches to co-workers
	Reading Skills
	The individual on the job must be able to: CS3. Read English and be able to or have the means to give simple instructions in the local language used at the site CS4. Read and interpret sketches, drawings or instructions provided for the required work
	Oral Communication (Listening and Speaking skills)
	The individual on the job must be able to: CS5. Listen attentively and interpret communication/instructions from the supervisor and other co-workers CS6. Convey information clearly and concisely to co-workers
B. Professional Skills	Decision Making
	The individual on the job must be able to: PS1. Carry out safety, health and environmental risk assessments (in conjunction with the Safety department) PS2. Identify and solve health, safety and environmental issues
	Plan and Organise
	The individual on the job should be able to: PS3. Plan and organise health, safety and environmental awareness meetings PS4. Demonstrate the use of other safety and health tools and equipment
	Customer Centricity
The individual on the job should be able to: PS5. Follow code of conduct PS6. Manage relationships with customers with intent to satisfying	

	their requirements
	Problem Solving
	The individual on the job should be able to: PS7. Recognize problems and search for solutions. PS8. Choose best methods to solve the problem. PS9. Approach relevant authority when required.
	Analytical Thinking
	The individual on the job should be able to: PS10. Apply domain knowledge and observation to select the right course of action
Critical Thinking	
The individual on the job should be able to: PS12. Critically evaluate information of incidences obtained from supervisors, co-workers and workers during day to day operations PS13. Ask relevant questions for better understanding from supervisors, co-workers and workers on the risks	

UNIT 2 [This Unit covers the skills and knowledge required by a Wood Processing Technologist to source for production materials].

Unit No.	02
Unit Title	Sourcing of Material
Description	This Unit describes the skills and knowledge required by a technologist to plan and acquire the right materials to process and produce required finished wood products.
Scope	This Unit covers the following: <ul style="list-style-type: none"> • Identifying the correct material to be used in the factory. • Recommend the right materials to be used in the factory to management. • Facilitating the procurement process of the materials to be used in the factory.
Performance Criteria (PC) with respect to the Scope	
Element	Performance Criteria (PC)
Identifying the correct material to be used in the factory	To be competent, the individual must be able to: PC1. Identify the correct type of wood raw materials. PC2. Determine the correct type of additives and binders. PC3. Recognize the wood strength properties. PC4. Specify the type of material to be used in the factory. PC5. Quantify the materials to be used in the production cycle.
Recommend the right materials to be used in the factory to management	To be competent, the individual must be able to: PC6. Recommend the correct type of wood raw materials. PC7. Recommend the correct type of additives and binders. PC8. Specify the type of material to be used in the factory. PC9. Quantify the materials to be used in the production cycle.
Facilitating the procurement process of the material to be used in the factory	To be competent, the individual must be able to: PC10. Provide the specifications of the materials to be used in the Factory to management. PC11. Verify that the procured materials are the correct ones.
Knowledge and Understanding (K)	
A. Organisation-al Context (Knowledge of the company/ organisation and its processes)	The individual on the job must demonstrate knowledge and understanding of: OK1. Various types of wood materials. OK2. Strength properties of different types of wood. OK3. Specific types of materials to be used in the factory. OK4. Quantifying the materials to be used in the production cycle. OK5. Strategic direction and objectives/targets the company.
B. Technical Knowledge	The individual on the job must demonstrate knowledge and understanding of: TK1. How to identify the correct type of wood raw materials. TK2. Wood strength properties.

	<p>TK3. Identifying the correct types of additives and binders to be used.</p> <p>TK4. Preparing various types of material specification documents to management.</p> <p>TK5. Quantifying the materials to be used in the production cycle.</p>
C. Regulatory Context (knowledge of rules/ and regulations)	<p>The individual on the job must demonstrate knowledge and understanding of:</p> <p>RK1. Factories Act and Regulations</p> <p>RK2. EIZ ACT</p> <p>RK3. Mine Safety Act and Regulations</p> <p>RK4. Occupational Health and Safety Act and Regulations</p> <p>RK5. Workers’ Compensation Act and Regulations</p> <p>RK6. Explosives Act and Regulations</p> <p>RK7. The Environmental Management Act</p> <p>RK8. The Employment Code Act</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	<p>The individual on the job must be able to:</p> <p>CS1. Write in English (at least working level) and/or have the means to give simple instructions in the local language used at the site.</p> <p>CS2. Prepare and provide clear and simple instructions, details and sketches to co-workers.</p>
	Reading Skills
	<p>The individual on the job must be able to:</p> <p>CS3. Read English and be able to or have the means to give simple instructions in the local language used at the site,</p> <p>CS4. Read and interpret sketches, drawings or instructions provided for the required work.</p>
	Oral Communication (Listening and Speaking skills)
	<p>The individual on the job must be able to:</p> <p>CS5. Listen attentively and interpret communication/instructions from the supervisor and other co-workers</p> <p>CS6. Convey information clearly and concisely to co-workers</p>
B. Professional Skills	Decision Making
	<p>The individual on the job must be able to:</p> <p>PS1. Follow organization rule-based decision-making process.</p> <p>PS2. Take decision with systematic course of actions and/or response.</p>
	Plan and Organise
	<p>The individual on the job should be able to:</p> <p>PS3. Plan and organise work to meet the set targets</p> <p>PS4. Work and coordinate with others</p>
	Customer Centricity
<p>The individual on the job should be able to:</p> <p>PS5. Follow code of conduct.</p> <p>PS6. Manage relationships with customers with intent to satisfying their requirements</p>	

	Problem Solving
	The individual on the job should be able to: PS7. Recognize problems and search for solutions. PS8. Choose best methods to complete assigned tasks. PS9. Approach relevant authority when required
	Analytical Thinking
	The individual on the job should be able to: PS10. Apply domain knowledge, observations and select course of action to undertake. PS11. Apply risk based approach to analyse situations for actions
	Critical Thinking
	The individual on the job should be able to: PS12. Determine the implications of failure to conform to desired health, safety and environmental regulations and impact on the employees and the company.

UNIT 3. This Unit covers the skills and knowledge required by a Wood Processing Technologist to supervise his working team

Unit No.	3
Unit Title	Supervision
Description	This Unit describes the skills and knowledge required to supervise and coordinate the production process
Scope	This unit covers the following: <ul style="list-style-type: none"> • Supervising workers • Providing oversight on the different components of the production process
Performance Criteria (PC) with respect to the Scope	
Element	Performance Criteria (PC)
Supervising workers	To be competent, the individual must be able to: PC1. Identify all the production lines. PC2. Observe and direct the execution of work as planned. PC3. Monitor and guide the workers in all the production lines.
Providing oversight on the different components of production process	To be competent, the individual must be able to: PC4. Demonstrate knowledge of all the components of the production process. PC5. Demonstrate Understanding of activities involved in each component of the production process. PC6. Ensure all the controls in the production lines are followed.
Knowledge and Understanding (K)	
A. Organisational Context (Knowledge of the company/ organisation and its processes)	The individual on the job must demonstrate knowledge and understanding of: OK1. The production process. OK2. The activities involved in each component of the production process. OK3. The company standard operating procedures
B. Technical Knowledge	The individual on the job must demonstrate knowledge and understanding of: TK1. Different activities within his/her work area. TK2. Applicable techniques of work. TK3. Quality, timelines, safety and risks at the site. TK4. Importance and need to support workers facing challenges in the workflow

<p>C. Regulatory Context (knowledge of rule and regulations)</p>	<p>The individual on the job must demonstrate knowledge and understanding of:</p> <ul style="list-style-type: none"> RK1. Factories Act and Regulations RK2. EIZ ACT RK3. Mine Safety Act and Regulations RK4. Occupational Health and Safety Act and Regulations RK5. Workers' Compensation Act and Regulations RK6. Explosives Act and Regulations RK7. The Environmental Management Act RK8. The Employment Code Act
<p>Skills (S)</p>	
<p>A. Core Skills/ Generic Skills</p>	<p>Writing Skills</p>
	<p>The individual on the job must be able to:</p> <ul style="list-style-type: none"> CS1. Write in English (at least working level) and/ or have the means to give simple instructions in the local language used at the site CS2. Prepare and provide clear and simple instructions, details and sketches to co-workers
	<p>Reading Skills</p>
	<p>The individual on the job must be able to:</p> <ul style="list-style-type: none"> CS3. Read English and be able to or have the means to give simple instructions in the local language used at the site CS4. Read and interpret sketches, drawings or instructions provided for the required work
	<p>Oral Communication (Listening and Speaking skills)</p>
	<p>The individual on the job must be able to:</p> <ul style="list-style-type: none"> CS5. Listen attentively and interpret communication/instructions from the supervisor and other co-workers CS6. Convey information clearly and concisely to co-workers
<p>B. Professional Skills</p>	<p>Decision Making</p>
	<p>The individual on the job must be able to:</p> <ul style="list-style-type: none"> PS1. Supervise the workers PS2. Monitor different components of the production process
	<p>Plan and Organise</p>
	<p>The individual on the job should be able to:</p> <ul style="list-style-type: none"> PS3. Plan and supervise the workers PS4. Coordinate different components of the production process
	<p>Customer Centricity</p>
	<p>The individual on the job should be able to:</p> <ul style="list-style-type: none"> PS5. Complete all assigned tasks in coordination with team members
<p>Problem Solving</p>	
<p>The individual on the job should be able to:</p> <ul style="list-style-type: none"> PS7. Identify problems and search for solutions PS8. Choose the best methods to solve the problem PS9. Approach relevant authority when required 	

	Analytical Thinking
	The individual on the job should be able to: PS10. Apply domain knowledge and observation to select the right course of action
	Critical Thinking
	The individual on the job should be able to: PS12. Critically evaluate information obtained from workers and co-workers involved in the operation process

UNIT 4 [This Unit covers the skills and knowledge required by a Wood Processing Technologist in the processing of wood products].

Unit No.	04
Unit Title	Production of Wood Products
Description	This Unit describes the skills and knowledge required to convert logs and other wood raw materials into timber, veneer, plywood, block board, other finished wood products.
Scope	This Unit covers the following: <ul style="list-style-type: none"> • Conducting pre-processing wood procedures • Production of wood into required finished products
Performance Criteria (PC) with respect to the Scope	
Element	Performance Criteria (PC)
Conducting pre-processing procedures	To be competent, the individual must be able to: PC1. Quantify the materials to be used in the production line PC2. Recognise the cutting patterns to be used PC3. Interpret the cutting, edging and planning techniques to be used PC4. Assess the quality of raw materials
Production of wood into required finished products	To be competent, the individual must be able to: PC5. Identify the products to be manufactured PC6. Interpret the designs of components to be produced PC7. Carry out machine setting PC8. Cut the wood into the required sortments PC9. Assemble the wood into the required products (veneer boards, plywood, block board, cabinets etc) PC10. Carry out the finishing works (sanding, varnishing and drying) PC11. Store the produced wood products correctly in the right Place PC12. Recycle some wood wastes into valuable products such cheap boards, particle boards etc. PC13. Service the machines after use
Knowledge and Understanding (K)	
A. Organisation-al Context (Knowledge of the company/ organisation and its processes)	The individual on the job must demonstrate knowledge and understanding of: OK1. Company standard operating procedures. OK2. Company rules and practices. OK3. Company vision, mission and values. OK4. Company strategic direction and objectives/targets.

<p>B. Technical Knowledge</p>	<p>The individual on the job must demonstrate knowledge and understanding of:</p> <ul style="list-style-type: none"> TK1. Local Manufacturing codes and mandatory standards for producing the require wood products. TK2. Preparing various types of job specification documents for job requirements. TK3. Plant and equipment operational risk assessment. TK4. Hazards associated with the operational activities. TK5. Accessing computer drawing using Auto-Cad software (used For viewing designs drawings). TK6. Sequencing of work schedules.
<p>C. Regulatory Context (knowledge of rule and regulations)</p>	<p>The individual on the job must demonstrate knowledge and understanding of:</p> <ul style="list-style-type: none"> RK1. Factories Act and Regulations RK2. EIZ ACT RK3. Mine Safety Act and Regulations RK4. Occupational Health and Safety Act and Regulations RK5. Workers' Compensation Act and Regulations RK6. Explosives Act and Regulations RK7. The Environmental Management Act RK8. The Employment Code Act
<p>Skills (S)</p>	
<p>A. Core Skills/ Generic Skills</p>	<p>Writing Skills</p>
	<p>The individual on the job must be able to:</p> <ul style="list-style-type: none"> CS1. Write in English (at least working level) and/or have the means to give simple instructions in the local language used at the site CS2. Prepare and provide clear and simple instructions, details and sketches to co-workers
	<p>Reading Skills</p>
	<p>The individual on the job must be able to:</p> <ul style="list-style-type: none"> CS3. Read English and be able to or have the means to give simple instructions in the local language used at the site CS4. Read and interpret sketches, drawings or instructions provided for the required work
<p>Oral Communication (Listening and Speaking skills)</p>	
<p>The individual on the job must be able to:</p> <ul style="list-style-type: none"> CS5. Listen attentively and interpret communication/instructions from the supervisor and other co-workers CS6. Convey information clearly and concisely to co-workers 	
<p>B. Professional Skills</p>	<p>Decision Making</p>
	<p>The individual on the job must be able to:</p> <ul style="list-style-type: none"> PS1. Follow organization rule-based decision-making process PS2. Take decision with systematic course of actions in consultation with the superiors
	<p>Plan and Organise</p>
<p>The individual on the job should be able to:</p> <ul style="list-style-type: none"> PS3. Plan and organise work to meet the set targets. PS4. Work and coordinate with others 	

	Customer Centricity
	The individual on the job should be able to: PS5. Follow code of conduct PS6. Manage relationships with customers with intent to satisfying their requirements
	Problem Solving
	The individual on the job should be able to: PS7. Identify problems and search for solutions PS8. Choose best methods to complete assigned tasks PS9. Approach relevant authority when required
	Analytical Thinking
The individual on the job should be able to: PS10. Apply domain knowledge, observations and data to select course of action to perform tasks PS11. Apply risk-based approach to analyse situations for actions	
Critical Thinking	
The individual on the job should be able to: PS12. Critically evaluate information obtained from customers, supervisor and co-workers to perform day to day activities PS13. Ask relevant questions for better understanding	

UNIT 5. This Unit covers the skills and knowledge required by a Wood Processing Technologist to work according to personal health, safety and environmental rules and protocols at the site].

Unit No.	5
Unit Title	Entrepreneurship in Wood Processing
Description	This Unit describes the skills and knowledge required that would enable the Wood Processing Technologist become self-reliant, innovative and create wealth and jobs.
Scope	This Unit covers the following: <ul style="list-style-type: none"> • Introducing entrepreneurship • Identify entrepreneurial opportunities in the environment • Developing new products • Developing a business plan
Performance Criteria (PC) with respect to the Scope	
Element	Performance Criteria (PC)
Introducing entrepreneurship	To be competent, the individual must be able to: PC1. Identify the principles of entrepreneurship PC2. Recognise the types of entrepreneurs PC3. Explain the characteristics of entrepreneurs PC4. Explain the role of entrepreneurship
Identifying entrepreneurial opportunities in the environment	To be competent, the individual must be able to: PC5. Explain entrepreneurship opportunity theories PC6. Identify entrepreneurial opportunities in the environment PC7. Recognise the factors affecting entrepreneurship opportunities
Developing new products	To be competent, the individual must be able to: PC8. Apply new product development strategies PC9. Apply the new product development process
Developing a business plan	To be competent, the individual must be able to: PC10. Explain the features of a business plan PC11. Develop a business plan PC12. Implement a business plan accordingly
Knowledge and Understanding (K)	
A. Organisational Context (Knowledge of the company/ organisation and its processes)	The individual on the job must demonstrate knowledge and understanding of: <ul style="list-style-type: none"> OK1. Relevant legislation, standards, policies, and procedures relevant to work OK2. Who to approach for support to obtain work related information, clarifications, and support. OK3. Documentation and related procedures applicable in the context of work.

B. Technical Knowledge	The individual on the job must demonstrate knowledge and understanding of: TK1. Entrepreneurial skills. TK2. Use of IT statistical and analytical tools. TK3. The company standard operating procedures. TK4. Business planning. TK5. Product and market research.
C. Regulatory Context (knowledge of rule and regulations)	The individual on the job must demonstrate knowledge and understanding of: RK1. Factories Act and Regulations RK2. EIZ ACT RK3. Mine Safety Act and Regulations RK4. Occupational Health and Safety Act and Regulations RK5. Workers’ Compensation Act and Regulations RK6. Explosives Act and Regulations RK7. The Environmental Management Act RK8. The Employment Code Act RK9. Company Registration Act and Regulations
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The individual on the job must be able to: CS1. Write in English (at least working level) and/or have the means to give simple instructions in the local language used at the site CS2. Prepare and provide clear and simple instructions, details and sketches to co-workers
	Reading Skills
	The individual on the job must be able to: CS3. Read English and be able to or have the means to give simple instructions in the local language used at the site CS4. Read and interpret sketches, drawings or instructions provided for the required work
B. Professional Skills	Oral Communication (Listening and Speaking skills)
	The individual on the job must be able to: CS5. Listen attentively and interpret communication/instructions from the supervisor and other co-workers CS6. Convey information clearly and concisely to co-workers
	Decision Making
	The individual on the job must be able to: PS1. Follow organization rule-based decision-making process PS2. Take decision with systematic course of actions and/or response
	Plan and Organise
	The individual on the job should be able to: PS3. Plan and organise production and marketing strategic planning meetings PS4. Organise work schedules to meet deadlines PS5. Work constructively and collaboratively with others

	Customer Centricity
	The individual on the job should be able to: PS6. Follow code of conduct. PS7. Manage relationships with customers with intent to satisfying their requirements
	Problem Solving
	The individual on the job should be able to: PS8. Recognize problems and search for solutions PS9. Choose best methods to solve the problem PS10. Approach relevant authority when required
	Analytical Thinking
The individual on the job should be able to: PS11. Apply domain knowledge and observation to select the right course of action	
Critical Thinking	
The individual on the job should be able to: PS12. Critically evaluate information of incidences obtained from customers, supervisors, co-workers and workers during day-to-day operations PS13. Ask relevant questions for better understanding from supervisors, co-workers and workers on the risks	

5. EQUIPMENT, TOOLS AND CONSUMABLE MATERIALS

These include, but not limited to:

Equipment and Tools:

Design and Prototyping equipment and tools, computer software applications, Machine shop equipment and tools, Fabrication shop equipment and tools, Electrical equipment, Maintenance equipment and tools, Testing equipment and tools, Personal protective equipment, etc.

Raw Materials and Consumables:

Wood, Glues, Chemicals, Additives, Nails, Lubricants, Spare parts and components, etc.

6. DILEMMAS/CHALLENGES AND COMPLEXITIES FOR A JOB HOLDER

Wood Processing Technologist face challenges such as obsolete and/or inappropriate equipment and tools, budgetary constraints, inadequate product costing skills, poor technical skill, bureaucracy in procurement procedures, lack of appreciation of preventive maintenance by non-engineering management staff, labour intensive nature of the work, rapid changing of technology and materials, and lack of personal protective equipment.

6.1 Alternative Choices (Solutions) to Dilemmas and Complexities

Solutions to challenges include: selecting and procuring appropriate equipment and tools for the job; supporting capacity building through training; recruitment and/or inclusion of engineering professionals in management teams, deployment of automation where feasible, provision of personal protective equipment, participating in lobbying and formulation of policies and allocation of adequate financial resources.

7. WORKING CONDITIONS/ENVIRONMENT

Wood Processing Technologist work with a variety of machinery, toxic substances and volatile materials. Their work environment is susceptible to fires, explosions, structural failures and equipment malfunctions. Working conditions include cold, hot and wet conditions, climbing heights, standing and/or walking for long hours, lifting materials, working in day or night shifts, and working in areas that are noisy and dusty as well as areas with limited lighting and ventilation, etc.

8. PARTIES INVOLVED/INTERACTING WITH THE JOB HOLDER OR TRAINEE

8.1 Internal/Within the Organisation

Management, supervisors, subordinates and other section members, etc.

8.2 External/Outside the Organisation

Government regulators, professional bodies, clients, suppliers, fellow Technologist from other companies, labour unions, clients, students/interns, etc.

9. PHYSICAL DEMANDS ON THE BODY

- Physique to sustain strenuous conditions;
- Be able to walk and stand for long periods of time;
- Bend, stretch, twist, or reach out;
- Be able to lift relatively heavy woods, tools and equipment;
- Be able to use fingers, hands and feet with ease to complete the assigned task (dexterity);
- Etc.

ANNEX A

Criteria for Assessments based on this NOS

A.1 Guidelines for Assessment

A.1.1 Criteria for assessment for curricula and learning programmes based on this NOS will be created by curricula and programmes developers. Each Performance Criteria (PC) will be assigned marks proportional to its importance in the NOS. Curricula and programmes developers will also lay down proportion of marks for theory and practical skills for each performance criteria, giving more weight to practical skills.

There shall be allocated the 'Total Mark', which will be the sum of all marks in each Unit, distributed across the number of PCs in that particular Unit. The 'out of' mark will be the mark allocated to each PC, which will be shared between theory and skills practical assessments.

A.1.2 Individual awarding/assessment bodies or institutions and other users of the NOS will create unique question papers for the theory part and evaluations for skill practical part for their respective candidates.

ANNEX B NOS Version Control

This Annex gives details necessary for the tracking of the NOS versions based on the number of revisions.

NOS Code	DNOS.WPT.01		
ZQF Level	5	Version Number	01
Sector	Manufacturing	Date of Approval	
Sub Sector	Wood Product Manufacturing	Date of Last Review	N/A
Occupation	Wood Processing Technologist	Date of Next Review	