THE NATIONAL COUNCIL FOR TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING

OCCUPATIONAL STANDARDS

OCCUPATION: TEXTILE TECHNICIAN

LEVEL: NTA LEVEL 6

FEBRUARY 2024

TABLE OF CONTENTS

ABBREVIATIONS

A	Acrylic
Ba	Bamboo Fiber
C	Cotton Yarn
CBET	Competency Based Education and Training
CS	Card Sliver
G	Gassed Yarn
J	Combed Yarn
L	Polyvinyl Chloride Fibre
MS	Sliver
NACTVET	National Council for Technical and Vocational Education and Training
NOS	National Occupational Standards
O	Polypropylene
OE	Rotor Spinning
OS	Occupational Standards
R	Artificial Cotton
SF	Spinning Frame
SP	Spindle
SY	Yarn Evenness
T	Polyester
T/C	Polyester Cotton Yarn
TET	Technical Education and Training

T/R	Polyester-viscose Blended Yarn
TC	Tencel
TVET	Technical and Vocational Education and Training
V	Vinylon
V/C	Polyvinyl Alcohol Cotton Blended Yarn
WU	Weight Uniformity

GLOSSARY OF TERMS

Circumstantial Knowledge:	Detailed knowledge, which allows the decision-making in regard to different circumstances and cross cutting issues.
Competence:	The ability to use knowledge, understanding, practical, and thinking skills to perform effectively to the workplace standards required in employment.
Competency:	A description of the ability one possesses when able to perform a given occupational task effectively and efficiently.
Competency-based Education:	An instructional programme that derives its content from validated tasks and bases assessment on the learner's performance.
Curriculum:	A description or composite of statements about "what is to be learned" by the trainee/student in a particular instructional programme; a product that states the "intended learning outcomes".
Educational/Training Programme:	The complete curriculum and instruction (what and how) that is designed to prepare a person for employment in a job or other particular performance situation.
Occupation:	A specific position requiring the performance of specific tasks – essentially the same tasks are performed by all employees having the same title.
Occupational Area:	This is a broad grouping of related jobs. (Example: food service)
Occupational Competence:	The application of knowledge and skills that consistently meet the standards required by the work context.
Occupational Standards:	Specific requirements of competences people are expected to demonstrate in a particular occupational area, including knowledge and relevant attitudes. They also act as a performance tool of assessment of the prescribed outcomes.
Occupational/Job Analysis:	A process used to identify the tasks that are important to employees in any given occupation**.**
Performance Criteria:	Indicate expected end results or outcomes in the form of evaluative statements.
Skills:	The ability to perform occupational tasks with a high degree of proficiency within a given occupation. Skill is conceived of as a composite of three completely interdependent components: cognitive, affective, and psychomotor.

Standards:	A set of statements, which if proved true under working conditions, means that an individual is meeting an expected level and type of performance.
Task Analysis:	The process of analysing each task to determine the steps, circumstantial knowledge, attitudes, performance standards, tools and materials needed, as well as safety concerns required for the employees performing it.
Task:	A work activity that has a definite beginning and ending, is observable or measurable, and consists of two or more definite steps that leads to a product, service, or decision.
Underpinning Knowledge:	Crucial knowledge that an individual must acquire in order to demonstrate competences that are associated in performing a given task.
Verification Process:	The process of having experts review and confirm the importance of the task (competency) statements identified through occupational analysis. Other questions, such as the degree of task learning difficulty are also frequently asked. This process is also sometimes referred to as validation.

1.0. INTRODUCTION

Technical Education and Training (TET) is one of the most important education sub-sectors in Tanzania, responsible for developing a skilled workforce to support the country's industrialization economic agenda. Tanzania's *Development Vision 2025* intends to raise the country's economy to a middle-income status, with a high level of human development. This requires a skilled workforce that is aligned with the needs of the public and private sectors of the economy. The National Council for Technical and Vocational Education and Training (NACTVET) has begun the job of drafting Occupational Standards (OS) that will eventually be adopted as National Occupational Standards (NOS) for use in the delivery of TET that meets the needs of the labour market and the country's economic agenda.

Occupational Standards (OS) are performance criteria that are matched with labour market demands. Each of them describes the functions, performance standards, and understanding or knowledge underpinning a given occupation. They combine skills, knowledge, and attitudes to describe best practice. They are useful tools for establishing job roles, personnel recruitment, supervision, and appraisal, as well as TET Standards. They are also helpful for benchmarking and harmonizing job qualifications on a national and international level. Standards, in general, provide a solid framework for high-quality TET that is labour market-relevant, current, and consistent in application across all public and private institutions.

However, it must be noted that Occupational Standards are different from Training /Education Standards. Occupational standards are defined in terms of activities performed by a person in a selected occupation (e.g., an electrical engineer designs electrical circuits, performs troubleshooting in electrical circuits, etc.), and are usually defined by Employers following procedures as agreed upon by all the stakeholders. On the other hand, Training and Education Standards are developed from the activities defined in the occupational standards, and they specify learning objectives to ensure that the necessary skills and knowledge are developed by a person to enable him/her to function at an agreed level in an occupation. Training and Education Standards are used to define curricula in training institutions. It is critical, however, to establish a direct link between the occupational standards and the training standards for both of them to respond collaboratively to the demands of the labour market.

For the purpose of TET delivery, Tanzania has adopted the Competence Based Education and Training (CBET) approach. The CBET approach focuses on providing learners with the skills and knowledge required to meet the occupational standards. Occupational standards are thus the starting point for developing competency-based training (CBET) programmes. Therefore, it is quite

pertinent for TET institutions to use the relevant occupational standards as a benchmark for formulating their curricula.

Occupational Standards are developed based on a given occupation's current and future demands. As a result, they serve as a means of bridging the gap between the worlds of employment and technical education and training.

The document explains how the occupational standards were developed, as well as the scope, the occupational profile in the form of DACUM charts, and the Occupational Standards.

2.0 OCCUPATIONAL STANDARD DEVELOPMENT PROCESS

The process of developing these Occupational Standards involved both local and international expertise. The process began with an examination of major documents that guide Tanzanian skills development including the *10-year National Skills Development Strategy (2016-2026).* NACTVET labour market reports were also used in the literature review to determine the skills demand in the Tanzanian labour market as a whole.

After the literature review, a team of experts in consultation with practitioners developed draft occupational standards. The draft document was used to develop an occupational profile for each occupation (DACUM Chart), which is attached as an **Appendix** to every Occupational Standard.

The occupational standards were validated during the stakeholders' forum held on 22nd and 23rd February 2024 at Morogoro. The information from the stakeholders' forum provides insight from the workplace, professional bodies, regulatory bodies and sector ministries regarding trends and changes in the profession, including how well graduates are prepared for working in the occupation.

3.0. THE SCOPE AND OVERVIEW OF THE OCCUPATIONAL STANDARDS FOR TEXTILE TECHNICIANS

The standards cover a broad range of duties and tasks that can be performed by a Textile Technician. However, the occupational standards are not meant to replace individual job descriptions. Instead, they are to be used for guidance in defining skill levels and knowledge for the technician in specific settings or positions. The Textile Technician may perform tasks in a number of key areas of the occupational standards, but not necessarily in all areas. For example, in large operations, other individuals may be employed or designated to perform specific tasks. Generally, the Textile Technician performs the following responsibilities:

a) Drawing shift turnover

b) Drawing frame management

c) Drawing quality control

d) Spinning shift turnover

e) Spinning recognition and calculation drawing

f) Spinning frame management

g) Spinning quality control

h) Warping pre-post preparation

i) Warping shift turnover

j) Warping frame management

k) Warping quality control

l) Weaving shift turnover

m) Weaving recognition and calculation

n) Weaving frame operation and management

o) Quality control

The Occupational standards have been clustered into NTA qualification levels i.e. NTA level 4, 5 and 6.

4.0. VALIDITY PERIOD

Due to the rapid development of technology, the validity period of occupational standards is 3-5 years. The review will proceed in the same manner as the one before it, with new occupational standards being developed based on current trends of the labour market.

5.0. OCCUPATIONAL STANDARDS

5.1 OCCUPATIONAL STANDARDS FOR TEXTILE TECHNICIAN - NTA LEVEL 6

<table>
<tr><td>OCCUPATION</td><td>TEXTILE TECHNICIAN</td><td>OCCUPATION CODE</td><td></td></tr>
<tr><td>DUTY TITLE</td><td>CARRY OUT DRAWING</td><td>DUTY NO.</td><td>601</td></tr>
<tr><td>TASK TITLE</td><td>PERFORM QUALITY CONTROL OF DRAWING PROCESS</td><td>TASK NO.</td><td>6011</td></tr>
<tr><td>PERFORMANCE CRITERIA</td><td colspan="3">The person performing this task must be able to perform quqlity control of drawing process in accordance with national standards and customer specifications.</td></tr>
<tr><td>RANGE STATEMENT</td><td colspan="3">The task can be performed in the drawing workshop under the supervision of senior technicians or textile engineers.
The tools and equipment to be used include:
1. Manual for inspection and use of production equipment;
2. Scissors;
3. Uster machine
4. Safety gear.</td></tr>
<tr><td colspan="4">EVIDENCE REQUIREMENT</td></tr>
<tr><td colspan="2">PRACTICAL PERFORMANCE</td><td colspan="2">UNDERPINNING KNOWLEDGE</td></tr>
<tr><td colspan="2">The person performing this task must be able to do the following:
1. Determine the thickness of the sliver by hand and visual inspection;
2. Identify thick and thin sliver, broken sliver;
3. Deal with winding rollers;
4. Deal with equipment alarm;
5. Interpret control panel data;
6. Observe health, occupational and environmental safety rules and regulations.</td><td colspan="2">Detailed knowledge about:
1.0 Methods
The person performing this task must be able to explain how to:
1.1 Understand the causes of hanging flowers caught in the sliver and deal with them;
1.2 Analyse the causes and solutions for thick and thin strips, impurity strips, rough strips, and greasy strips.

2.0 Principles
The person performing this task must be able to explain:
2.1 The law of odd numbers of drawing processes;
2.2 Reasons for defects;
2.3 Quality requirements;
2.4 Drafting process of drawing frame.

3.0 Theories
The person performing this task must be able to explain the following:
3.1 Process flow of the drawing frame;
3.2 Reasons for uneven drawing.

4.0 Essential Skills</td></tr>
</table>

	4.1 Learning ability; 4.2 Time management skills; 4.3 Interpersonal skills; 4.4 Teamwork skills.
DESCRIPTION OF THE END PRODUCT / SERVICE	Quality control of drawing process is performed in accordance with the requirements of textile occupational standards and technical requirements.
CIRCUMSTANTIAL KNOWLEDGE	**Detailed knowledge about:** 1. Occupational health and safety.

OCCUPATION	TEXTILE TECHNICIAN	**OCCUPATION CODE**	
DUTY TITLE	CARRY OUT DRAWING	**DUTY NO.**	601
TASK TITLE	PERFORM TRAINING AND GUIDANCE IN DRAWING	**TASK NO.**	6012
PERFORMANCE CRITERIA	The person performing this task must be able to perform training and guidance of drawing workers in accordance with approved standards and specifications.		
RANGE STATEMENT	The task can be performed in the yarn manufacturing shed under the supervision of drawing technicians or textile engineers. The tools and equipment to be used include: 1. Manual for inspection and use of production equipment; 2. Scissors; 3. Safety gear.		

EVIDENCE REQUIREMENT

PRACTICAL PERFORMANCE	**UNDERPINNING KNOWLEDGE**
The person performing this task must be able to do the following: 1. Conduct theoretical training for junior staff; 2. Provide safety training to incoming new workers; 3. Guide the skills of junior personnel. 4. Guide junior staff to renovate varieties 5. Observe health, occupational and environmental safety rules and regulations.	**Detailed knowledge about:** **1.0 Methods** The person performing this task must be able to explain: 1.1 Determine training objectives, syllabus and content; 1.2 Conduct training on drawing shift turnover, drawing tour routes, and drawing joint knowledge; 1.3 Conduct drawing equipment training; 1.4 Conduct should-know training on the operating techniques of the drawing process; 1.5 Conduct training on the safety of drawing production. **2.0 Principles** The person performing this task must be able to explain the following principles: 2.1 Safety operation specifications for drawing frames; 2.2 Operational cautions for renovating varieties. **3.0 Theories** The person performing this task must be able to explain the following: 3.1 Drawing shift turnover, drawing tour routes, and drawing joint knowledge; 3.2 Knowledge of drawing frames; 3.3 Operation of the drawing frame; 3.4 Operational points of renovating varieties. **4.0 Essential Skills** 4.1 Excellent verbal expression skills;

	4.2 Communication skills.
DESCRIPTION OF THE END PRODUCT / SERVICE	Training and guidance of drawing workers is performed in accordance with approved standards and technical specifications.
CIRCUMSTANTIAL KNOWLEDGE	**Detailed knowledge about:** 1. Occupational health and safety.

OCCUPATION	TEXTILE TECHNICIAN	**OCCUPATION CODE**	
DUTY TITLE	CONDUCT YARN SPINNING	**DUTY NO.**	602
TASK TITLE	PERFORM SPINNING FRAME MANAGEMENT	**TASK NO.**	6021
PERFORMANCE CRITERIA	The person performing this task must be able to perform yarn jointing, doffing, re-piecing and spot cleaning in accordance with approved standards and specifications..		
RANGE STATEMENT	The task can be performed in the spinning shed under the supervision of spinning technicians or textile engineers. The tools and equipment to be used include: 1. Manual for inspection and use of production equipment; 2. Scissors; 3. Safety gear.		

EVIDENCE REQUIREMENT

PRACTICAL PERFORMANCE	**UNDERPINNING KNOWLEDGE**
The person performing this task must be able to do the following: 1. Dress according to production management requirements and select work tools for the task; 2. Conduct joints, yarn insertion, and creeling on machines according to operating methods; 3. Conduct doffing, hanking and re-piecing on machines according to operating methods; 4. Conduct itinerant spinning quality control operations according to a variety of touring routes; 5. Identify and address problems while cleaning well and propose methods to improve cleaning; 6. Record the work performed 7. Observe health, occupational and environmental safety rules and regulations.	Detailed knowledge about: **1.0 Methods** The person performing this task must be able to explain: 1.1 Inspect frame operating conditions and complete joints in time; 1.2 Complete the doffing and re-piecing in time when the tube is full of yarn; 1.3 Conduct regular itinerant inspections around the frame; 1.4 Inspect the machine's operating condition and maintenance, such as the machine's bearings, belts, and transmission system for looseness and wear; 1.5 Inspect spun yarn production for problems such as yarn breakage, knotting of spun yarns, machine jamming; 1.6 Inspect for safety hazards such as old electrical wiring, malfunctioning emergency stop buttons, and non-functioning fire extinguishers; 1.7 Inspect the sanitary condition of the production environment to avoid creating safety hazards and affecting productivity; 1.8 Clean frames, production work areas, keep them neat and organised, reduce sundries and garbage. **2.0 Principles** The person performing this task must be able to explain the following principles: 2.1 Operating methods for jointing, doffing and re-piecing; 2.2 Operation specifications for frame startup and

	emergency stops. **3.0 Theories** The person performing this task must be able to explain the following: 3.1 Normal operational workflow of the frame; 3.2 Disposal measures of emergency situation; 3.3 Frame breakdown maintenance methods. **4.0 Essential Skills** 4.1 Communication skills; 4.2 Teamwork skills; 4.3 Report writing skills.
DESCRIPTION OF THE END PRODUCT / SERVICE	SPINNING FRAME MANAGEMENT is performed in accordance with approved standards and specifications
CIRCUMSTANTIAL KNOWLEDGE	**Detailed knowledge about:** 1. Frame safety management; 2. Safety operation in production; 3. Maintenance operation processes and procedures.

OCCUPATION	TEXTILE TECHNICIAN	**OCCUPATION CODE**	
DUTY TITLE	CONDUCT YARN SPINNING	**DUTY NO.**	602
TASK TITLE	PERFORM YARN QUALITY MANAGEMENT	**TASK NO.**	6022
PERFORMANCE CRITERIA	The person performing this task must be able to produce quality spun yarns in accordance with approved national standards and customer requirements.		
RANGE STATEMENT	The task can be performed in the spinning shed under the supervision of spinning technicians or textile engineers. The tools and equipment to be used include: 1. Manual for inspection and use of production equipment; 2. Spanner, screwdriver and other maintenance tools; 3. Safety gear.		

EVIDENCE REQUIREMENT

PRACTICAL PERFORMANCE	**UNDERPINNING KNOWLEDGE**
The person performing this task must be able to do the following: 1. Identify spinning problems; 2. Determine the cause of defects in this process; 3. Determine the effect of the defect on subsequent processes; 4. Address spinning problems; 5. Identify missing parts and replace damaged parts; 6. Prepare work sheets; 7. Record spinning process parameters, spinning room temperature and humidity; 8. Record the operating condition and maintenance of the machine 9. Observe health, occupational and environmental safety rules and regulations.	Detailed knowledge about: **1.0 Methods** The person performing this task must be able to explain: 1.1 Detect yarn quality indicators such as unevenness and faults; 1.2 Analyse the causes of yarn unevenness and faults; 1.3 Adjust the spinning process and change the damaged part of the machine. **2.0 Principles** The person performing this task must be able to explain the following principles: 2.1 Methods for detecting yarn quality indicators; 2.3 Influence of spinning process parameters on quality; 2.4 Methods of adjusting spinning process parameters; 2.5 Operating methods for replacing damaged part of the machine. **3.0 Theories** The person performing this task must be able to explain the following: 3.1 Yarn quality inspection standards; 3.2 Factors affecting yarn quality; 3.3 Disposal measures of emergency situation; 3.4 Frame breakdown maintenance methods; 3.5 Yarn quality control methods; 3.6 Factors affecting yarn quality indicators; 3.7 Parameter adjustment strategies and procedures of spinning process.

	4.0 Essential Skills 4.1 Communication skills; 4.2 Teamwork skills; 4.3 Report writing skills.
DESCRIPTION OF THE END PRODUCT / SERVICE	Yarn quality management is conducted in accordance with approved national standards and customer requirements.
CIRCUMSTANTIAL KNOWLEDGE	**Detailed knowledge about:** 1. Occupational health and safety.

OCCUPATION	TEXTILE TECHNICIAN	**OCCUPATION CODE**	
DUTY TITLE	CARRY OUT WARPING	**DUTY NO.**	603
TASK TITLE	CONDUCT WARPING FRAME MANAGEMENT	**TASK NO.**	6031
PERFORMANCE CRITERIA	The person performing this task must be able to conduct warping frame management in accordance with approved standards and specifications.		
RANGE STATEMENT	The task can be performed in the warping shed under the supervision of senior technicians or textile engineers. The tools and equipment to be used include: 1. Warping frame; 2. Yarn; 3. Yarn threading tools; 4. Reed cutter; 5. Scissors; 6. Pencil/Marker pen 7. Safety gear.		

EVIDENCE REQUIREMENT

PRACTICAL PERFORMANCE	**UNDERPINNING KNOWLEDGE**
The person performing this task must be able to do the following: 1. Dispose of broken ends; 2. Deal with defects such as wire jumper and stranded wires; 3. Tie fisherman's knots in 1min: 20 for medium cotton yarn, 18 for low cotton yarn, and 17 for filament; 4. Complete single yarn jointing finding and yarn mending for warping machines within 12s; 5. Complete head finding, jointing and yarn mending of 3 yarns in the warping machine within 75s; 6. Complete the reeding at the given time 7. Observe health, occupational and environmental safety rules and regulations.	**Detailed knowledge about:** **1.0 Methods** The person performing this task must be able to explain how to: 1.1 Distinguish yarn defects; 1.2 Deal with yarn defects; 1.3 Operate jointing reeding; 1.4 Tie a knot. **2.0 Principles** The person performing this task must be able to explain the following principles: 2.1 Criteria for classifying yarn defects; 2.2 Jointing methods and quality requirements; 2.3 Single measurement criteria for senior workers; 2.4 Safety operating specifications for warping equipment; 2.5 Safety operation specifications of work tools. **3.0 Theories** The person performing this task must be able to explain the following: 3.1 Multi-broken end handling methods; 3.2 Handling of wire jumper and stranded wires; 3.3 Operating methods for reeding;

	3.4 Methods of identifying defects. **4.0 Essential Skills** 4.1 Communication skills; 4.2 Teamwork skills; 4.3 Math skills.
DESCRIPTION OF THE END PRODUCT / SERVICE	Warping frame management is performed in accordance with industry specifications and requirements.
CIRCUMSTANTIAL KNOWLEDGE	**Detailed knowledge about:** 1. Occupational health and safety.

OCCUPATION	TEXTILE TECHNICIAN	**OCCUPATION CODE**	
DUTY TITLE	CARRY OUT WARPING	**DUTY NO.**	603
TASK TITLE	CONDUCT WARP BEAM QUALITY CONTROL	**TASK NO.**	6032
PERFORMANCE CRITERIA	The person performing this task must be able to conduct warp beam quality control in accordance with approved standards and specifications.		
RANGE STATEMENT	The task can be performed in the warping workshop under the supervision of senior technicians or textile engineers. The tools and equipment to be used include: 1. Warping frame; 2. Warp beam; 3. Yarn; 4. Scissors; 5. Calculators; 6. Pencil/Marker pen 7. Safety gear.		

EVIDENCE REQUIREMENT

PRACTICAL PERFORMANCE	**UNDERPINNING KNOWLEDGE**
The person performing this task must be able to do the following: 1. Analyse the effect of yarn faults on the warping process; 2. Determine the effect of uneven yarn tension on post-process quality; 3. Inspect the exterior quality of the hollow warp beam for burr, deformation, unevenness of the shaft, scratches, staining of the shaft holes, and rust stains; 4. Check the broken ends, large and small ends, and double stranded yarns 5. Observe health, occupational and environmental safety rules and regulations.	**Detailed knowledge about:** **1.0 Methods** The person performing this task must be able to explain how to: 1.1 Inspect yarn quality and analyse the effect of yarn faults on the warping process; 1.2 Determine the uniformity of strand tension; 1.3 Inspect the exterior quality of the hollow warp beam, distinguish quality problems such as burr, deformation, unevenness of the shaft, scratches, staining of the shaft holes, and rust stains; 1.4 Inspect the quality of the warp beam, distinguish warping faults such as broken ends, small and large ends and double stranded yarns. **2.0 Principles** The person performing this task must be able to explain the following principles: 2.1 Effect of yarn defects on warping quality; 2.2 The effect of uneven yarn tension on post-process; 2.3 Appearance quality requirements for hollow warp beams; 2.4 Quality inspection requirements for warp beams. **3.0 Theories**

	The person performing this task must be able to explain the following: 3.1 Classification of yarn defects in the warping process; 3.2 Adjustment measures for warping sliver yarn tension; 3.3 Appearance quality requirements for hollow warp beams; 3.4 Quality control and inspection methods for warp beams. **4.0 Essential Skills** 4.1 Communication skills; 4.2 Teamwork skills; 4.3 Math skills.
DESCRIPTION OF THE END PRODUCT / SERVICE	Inspection of yarn quality and warp beam quality is performed in accordance with industry specifications and requirements.
CIRCUMSTANTIAL KNOWLEDGE	**Detailed knowledge about:** 1. Occupational health and safety.

OCCUPATION	TEXTILE TECHNICIAN	**OCCUPATION CODE**	
DUTY TITLE	CARRY OUT WARPING	**DUTY NO.**	603
TASK TITLE	CONDUCT FAULT IDENTIFICATION AND QUALITY TRACKING	**TASK NO.**	6033
PERFORMANCE CRITERIA	The person performing this task must be able to conduct fault identification and quality tracking of warped yarn in accordance with approved industry standards and specifications.		
RANGE STATEMENT	The task can be performed in the warping workshop under the supervision of senior technicians or textile engineers. The tools and equipment to be used include: 1. Warping frame; 2. Warp beam; 3. Yarn threading tools; 4. Yarn; 5. Calculator; 6. Operating tools (wrench, gloves, etc.) 7. Safety gear.		

EVIDENCE REQUIREMENT	
PRACTICAL PERFORMANCE	**UNDERPINNING KNOWLEDGE**
The person performing this task must be able to do the following: 1. Check oil leakage of drilling rig; 2. Check the brake pads for wear; 3. Determine the defects of warping process; 4. Analyse and provide feedback on defects in the previous process 5. Observe health, occupational and environmental safety rules and regulations.	**Detailed knowledge about:** **1.0 Methods** The person performing this task must be able to explain how to: 1.1 Inspect warping equipment for faults, e.g. inspect warping equipment for oil leakage and deal with it promptly; 1.2 Inspect the starting and braking devices, such as inspecting the brake pads for wear and determine whether the car can be switched on and off properly; 1.3 Determine the defects of warping process, such as broken ends, wavy yarn, seam allowance; 1.4 Analyse and provide feedback on defects in the previous process. **2.0 Principles** The person performing this task must be able to explain the following principles: 2.1 Safety operation procedures for warping equipment; 2.2 Troubleshooting methods for warping equipment; 2.3 Classification and characterization of defects in the warping process;

	2.4 Cause analysis of defects in the warping process and statistical analysis of warping quality; 2.5 Requirements for determining warping defects. **3.0 Theories** The person performing this task must be able to explain the following: 3.1 Safety operation procedures for equipment; 3.2 Troubleshooting methods for warping equipment; 3.3 Characterization of defects in the warping process; 3.4 Cause analysis of warping defects and quality tracking requirements; 3.5 Formation causes of common defects in warping process and requirements for preventive measures; 3.6 Statistical analysis method of warping broken end rate, good beam rate and defects in the previous process. **4.0 Essential Skills** 4.1 Communication skills; 4.2 Teamwork skills. **5.0 Math Skills** 5.1 Measure and unit; 5.2 Statistics.
DESCRIPTION OF THE END PRODUCT / SERVICE	Fault identification and quality tracking of warped yarn is conducted in accordance with in accordance with approved industry standards and specifications.
CIRCUMSTANTIAL KNOWLEDGE	**Detailed knowledge about:** 1. Safety operation of equipment; 2. Occupational health and safety.

OCCUPATION	TEXTILE TECHNICIAN	**OCCUPATION CODE**	
DUTY TITLE	CARRY OUT WARPING	**DUTY NO.**	603
TASK TITLE	PERFORM WARPING TRAINING AND GUIDANCE	**TASK NO.**	6034
PERFORMANCE CRITERIA	The person performing this task must be able to conduct training and guidance on the given warping equipment.		
RANGE STATEMENT	The task can be performed in the warping workshop under the supervision of senior technicians or textile engineers. The tools and equipment to be used include: 1. Warping frame; 2. Teaching equipment (multimedia, computers, etc.); 3. Safety manual; 4. Operating tools; 5. Yarn threading tools; 6. Scissors; 7. Calculators 8. Safety gear.		

EVIDENCE REQUIREMENT

PRACTICAL PERFORMANCE	**UNDERPINNING KNOWLEDGE**
The person performing this task must be able to do the following: 1. Analyse the training syllabus and train the theoretical knowledge for personnel 2. Conduct safety training; 3. Guide the practical operation of personnel 4. Guide trainees to renovate varieties 5. Observe health, occupational and environmental safety rules and regulations.	**Detailed knowledge about:** **1.0 Methods** The person performing this task must be able to explain how to: 1.1 Train warping knowledge; 1.2 Train safety knowledge of warping operations; 1.3 Deal with warping defects; 1.4 Operate warping equipment; 1.5 Train the essentials of operational skills for renovating varieties. **2.0 Principles** The person performing this task must be able to explain the following principles: 2.1 Occupational function precautions; 2.2 Training methods; 2.3 Warping quality standards; 2.4 Troubleshooting methods for warping equipment; 2.5 Safety regulations for warping operation; 2.6 Warping quality analysis methods; 2.7 Normal workflow. **3.0 Theories** The person performing this task must be able to explain the following:

	3.1 Requirements related to the warping operation. **4.0 Essential Skills** 4.1 Communication skills; 4.2 Teamwork skills; 4.3 Theoretical knowledge training; 4.4 Math skills.
DESCRIPTION OF THE END PRODUCT / SERVICE	Training and guidance on warping operations are conducted in accordance with approved industry standards and specifications.
CIRCUMSTANTIAL KNOWLEDGE	**Detailed knowledge about:** 1. Safety operation of equipment; 2. Occupational health and safety; 3. Vocational training laws and regulations.

OCCUPATION	TEXTILE TECHNICIAN	**OCCUPATION CODE**	
DUTY TITLE	CONDUCT WEAVING	**DUTY NO.**	604
TASK TITLE	CARRY OUT OPERATION AND INSPECTION OF DRAWING-IN PROCESS	**TASK NO.**	6041
PERFORMANCE CRITERIA	The person performing this task must be able to carry out operation and inspection of drawing-in process in accordance with approved industry standards and specifications.		
RANGE STATEMENT	The task can be performed in the textile workshop under the supervision of senior technicians or textile engineers. The tools and equipment to be used include: 1. Loom; 2. Scissors; 3. Drawing-in hook; 4. Calculators; 5. Paper; 6. Pencil/Marker pen 7. Safety gear.		

EVIDENCE REQUIREMENT	
PRACTICAL PERFORMANCE	**UNDERPINNING KNOWLEDGE**
The person performing this task must be able to do the following: 1. Understand the purpose and working principles of drawing-in and tying-in; 2. Analyse the function and structure of dropper, healdframe, reed and relevant process parameters; 3. Analyse the principles and methods of designing the process parameters of the drawing-in and tying-in process; 4. Analyse the causes of defects in each process of drawing-in and tying-in and preventive measures; 5. Conduct basic operation of drawing-in and tying-in, setting and adjustment of process parameters on the machine; 6. Identify the defects generated by the drawing-in and tying-in process, analyse the causes, and propose preventive measures 7. Observe health, occupational and environmental safety rules and regulations.	**Detailed knowledge about:** **1.0 Methods** The person performing this task must be able to explain how to: 1.1 Conduct drawing-in; 1.2 Conduct tying-in; 1.3 Conduct quality control; 1.4 Conduct equipment maintenance; 1.5 Interpret process specification sheets and identify fabric weave. **2.0 Principles** The person performing this task must be able to explain the following principles: 2.1 Process flow of drawing-in and tying-in; 2.2 Methods of drawing-in and tying-in. **3.0 Theories** The person performing this task must be able to explain the following: 3.1 Selection requirements for healdwire; 3.2 Selection requirements for reed.

	4.0 Essential Skills 4.1 Communication skills; 4.2 Report writing; 4.3 Customer service; 4.4 Time management; 4.5 Interpersonal skills; 4.6 Math skills.
DESCRIPTION OF THE END PRODUCT / SERVICE	Operation and inspection of drawing-in process is conducted in accordance with approved industry standards and specifications.
CIRCUMSTANTIAL KNOWLEDGE	**Detailed knowledge about:** 1. Health and safety laws and regulations (Occupational Safety and Health Agency); 2. Safety operation of equipment; 3. Occupational health and safety.

OCCUPATION	TEXTILE TECHNICIAN	**OCCUPATION CODE**	
DUTY TITLE	CONDUCT WEAVING	**DUTY NO.**	604
TASK TITLE	CONDUCT BASIC LOOM OPERATION	**TASK NO.**	6042
PERFORMANCE CRITERIA	The person performing this task must be able to conduct basic loom operation in accordance with approved standards, regulations and specifications..		
RANGE STATEMENT	The task can be performed in the textile workshop under the supervision of senior technicians or textile engineers. The tools and equipment to be used include: 1. Loom; 2. Scissors; 3. Drawing-in hook; 4. Calculators; 5. Paper; 6. Pencil/Marker pen 7. Safety gear.		

EVIDENCE REQUIREMENT	
PRACTICAL PERFORMANCE	**UNDERPINNING KNOWLEDGE**
The person performing this task must be able to do the following: 1. Match cloth-fell; 2. Avoid weaving defects such as filling bar; 3. Inspect many types of looms; 4. Thread broken ends; 5. Discover and deal with broken ends; 6. Discover and deal with broken picks 7. Observe health, occupational and environmental safety rules and regulations.	**Detailed knowledge about:** **1.0 Methods** The person performing this task must be able to explain how to: 1.1 Deal with broken ends; 1.2 Discover shut-down and find the broken ends as soon as possible; 1.3 Link up the broken ends of the warp yarn, and pull the warp yarn straight and drive according to the specifications of certain loom technology; 1.4 Discover the signal light on and deal with the broken pick. **2.0 Principles** The person performing this task must be able to explain the following principles: 2.1 Working principles of the air jet loom. **3.0 Theories** The person performing this task must be able to explain the following: 3.1 Commonly-used knotting methods; 3.2 Methods of handling broken ends after the machine; 3.3 Methods of handling pre-machine broken ends;

	3.4 Methods of handling broken pick in air jet looms; 3.5 Methods of handling broken pick in rapier looms. **4.0 Essential Skills** 4.1 Communication skills; 4.2 Report writing; 4.3 Customer service; 4.4 Time management; 4.5 Interpersonal skills; 4.6 Math skills.
DESCRIPTION OF THE END PRODUCT / SERVICE	Basic loom operations are conducted in accordance with approved industry specifications and requirements.
CIRCUMSTANTIAL KNOWLEDGE	**Detailed knowledge about:** 1. Safety operation of equipment; 2. Occupational health and safety.

OCCUPATION	TEXTILE TECHNICIAN	**OCCUPATION CODE**	
DUTY TITLE	CONDUCT WEAVING	**DUTY NO.**	604
TASK TITLE	PERFORM OPERATION OF PRESS-OFF ON THE LOOM UPPER SHAFT AND EQUIPMENT ADJUSTMENT	**TASK NO.**	6043
PERFORMANCE CRITERIA	The person performing this task must be able to perform operation of press-off on the loom upper shaft and equipment adjustment in accordance with approved industry standards and specifications.		
RANGE STATEMENT	The task can be performed in the textile workshop under the supervision of senior technicians or textile engineers. The tools and equipment to be used include: 1. Loom; 2. Scissors; 3. Drawing-in hook; 4. Calculators; 5. Paper; 6. Pencil/Marker pen 7. Safety gear.		

EVIDENCE REQUIREMENT

PRACTICAL PERFORMANCE	**UNDERPINNING KNOWLEDGE**
The person performing this task must be able to do the following: 1. Adjust warp yarn tension; 2. Discover and deal with yarn broken ends; 3. Adjust the inner cam plates and gears in the tappet box; 4. Adjust the height, opening volume and time of the healdframe 5. Observe health, occupational and environmental safety rules and regulations.	**Detailed knowledge about:** **1.0 Methods** The person performing this task must be able to explain how to: 1.1 Adjust warp yarn tension; 1.2 Deal with yarn broken ends; 1.3 Adjust the inner cam plates and gears in the tappet box; 1.4 Adjust the height, opening volume and time of the healdframe. **2.0 Principles** The person performing this task must be able to explain the following principles: 2.1 Principles of determining warp yarn tension for various types of fabrics; 2.2 Jointing methods and quality requirements; 2.3 Principles of adjusting the inner cam plates and gears in the tappet box; 2.4 Principles of determining the height, opening volume and time of the healdframe. **3.0 Theories**

	The person performing this task must be able to explain the following: 3.1 Effects of warp yarn tension, healdframe height, opening volume and time on fabric quality, weaving process and loom productivity; 3.2 Configuration and adjustment requirements for warp yarn tension, healdframe height, opening volume and time of various fabrics; 3.3 Precautions for loom opening mechanism; 3.4 Knowledge and methods of assembling pieces. **4.0 Essential Skills** 4.1 Communication skills; 4.2 Teamwork skills; 4.3 Script organisation and writing skills; 4.4 Normal workflow; 4.5 Math skills.
DESCRIPTION OF THE END PRODUCT / SERVICE	Operation of press-off on the loom upper shaft and equipment adjustment is carried out in accordance with approved industry standards and specifications.The weaving process parameters are tuned to ensure that the loom operates properly and produces qualified fabrics in accordance with the weaving requirements of the various products.
CIRCUMSTANTIAL KNOWLEDGE	**Detailed knowledge about:** 1. Occupational health and safety; 2. Safety operation of equipment.

OCCUPATION	TEXTILE TECHNICIAN	**OCCUPATION CODE**	
DUTY TITLE	CONDUCT WEAVING	**DUTY NO.**	604
TASK TITLE	CONDUCT FABRIC INSPECTION AND REPAIR	**TASK NO.**	6044
PERFORMANCE CRITERIA	The person performing this task must be able to conduct fabric inspection and repair in accordance with required standards.		
RANGE STATEMENT	The task can be performed in the textile workshop under the supervision of senior technicians or textile engineers. The tools and equipment to be used include: 1. Loom; 2. Scissors; 3. Drawing-in hook; 4. Calculators; 5. Paper; 6. Pencil/Marker pen 7. Safety gear.		

EVIDENCE REQUIREMENT	
PRACTICAL PERFORMANCE	**UNDERPINNING KNOWLEDGE**
The person performing this task must be able to do the following: 1. Select tools, equipment and safety gear; 2. Generalize and analyze weaving defects such as continuous descending; 2Carry out assembly; 3. Weave cotton yarns with 3 felters in the warp and weft in invisible mending; 4. Replace coarse ends and coarse picks 5. Observe health, occupational and environmental safety rules and regulations.	**Detailed knowledge about:** **1.0 Methods** The person performing this task must be able to explain how to: 1.1 Classification of weaving defects such as continuous descending; 1.2 Knowledge and methods of assembling pieces; 1.3 Weaving repair operation; 1.4 Replacement method for coarse ends and coarse picks. **2.0 Principles** The person performing this task must be able to explain the following principles: 2.1 Methods of analysing common weaving defects; 2.2 Technical standards for weaving repair operation; 2.3 Technical requirements for the operation of various looms. **3.0 Theories** The person performing this task must be able to explain the following: 3.1 Common weaving defects and their causes; 3.2 Handling of common weaving defects;

	3.3 Knowledge and methods of assembling pieces; 3.4 Technical requirements for the operation of various looms. **4.0 Essential Skills** 4.1 Communication skills; 4.2 Teamwork skills; 4.3 Math skills.
DESCRIPTION OF THE END PRODUCT / SERVICE	Fabric inspection and repair is conducted in accordance with approved standards.
CIRCUMSTANTIAL KNOWLEDGE	**Detailed knowledge about:** 1. Occupational health and safety; 2. Safety operation of equipment.

OCCUPATION	TEXTILE TECHNICIAN	**OCCUPATION CODE**	
DUTY TITLE	CONDUCT WEAVING	**DUTY NO.**	604
TASK TITLE	PERFORM WEAVING QUALITY CONTROL	**TASK NO.**	6045
PERFORMANCE CRITERIA	The person performing this task must be able to perform quality control of weaving process in accordance with approved industry standards and specifications.		
RANGE STATEMENT	The task can be performed in the textile workshop under the supervision of senior technicians or textile engineers. The tools and equipment to be used include: 1. Loom; 2. Scissors; 3. Drawing-in hook; 4. Calculators; 5. Paper; 6. Pencil/Marker pen 7. Safety gear.		

EVIDENCE REQUIREMENT	
PRACTICAL PERFORMANCE	**UNDERPINNING KNOWLEDGE**
The person performing this task must be able to do the following: 1. Deal with felter and holes; 2. Adjust the patrol route; 3. Check and handle defects in warp yarn and weft yarn; 4. Inspect for faults in the weft feeler, scrap yarn roller and hemming device; 5. Observe health, occupational and environmental safety rules and regulations.	**Detailed knowledge about:** **1.0 Methods** The person performing this task must be able to explain how to: 1.1 Inspect the air jet loom and rapier loom; 1.2 Inspect the cloth cover; 1.3 Inspect the warp and weft yarn. **2.0 Principles** The person performing this task must be able to explain the following principles: 2.1 Working principles of the air jet loom. **3.0 Theories** The person performing this task must be able to explain the following: 3.1 Causes and elimination of temple defects; 3.2 Causes and elimination of weft shrinkage; 3.3 Causes and elimination of double weft; 3.4 Causes and elimination of sloughed-off weft; 3.5 Causes and elimination of edge exclusion; 3.6 Causes and elimination of uneven weaving; 3.7 Causes and elimination of oil stain.

	4.0 Essential Skills 4.1 Communication skills; 4.2 Report writing; 4.3 Customer service; 4.4 Time management; 4.5 Normal workflow; 4.6 Interpersonal skills.
DESCRIPTION OF THE END PRODUCT / SERVICE	Quality control of weaving process is conducted in accordance with approved industry standards and specifications.
CIRCUMSTANTIAL KNOWLEDGE	**Detailed knowledge about:** 1. Occupational health and safety; 2. Safety operation of equipment.

OCCUPATION	TEXTILE TECHNICIAN	**OCCUPATION CODE**	
DUTY TITLE	CONDUCT WEAVING	**DUTY NO.**	604
TASK TITLE	CARRY OUT TRAINING AND GUIDANCE OF WEAVING WORKERS	**TASK NO.**	6046
PERFORMANCE CRITERIA	The person performing this task must be able to apply circumstantial knowledge and skills to train and guide weaving in accordance with the textile occupational standards.		
RANGE STATEMENT	The task can be performed in the warping workshop under the supervision of senior technicians or textile engineers. The tools and equipment to be used include: 1. Loom; 2. Computer; 3. Multimedia 4. Microphone 5. Scissors; 6. Cloth mirror 7. Safety gear.		

EVIDENCE REQUIREMENT	
PRACTICAL PERFORMANCE	**UNDERPINNING KNOWLEDGE**
The person performing this task must be able to do the following: 1. Conduct theoretical knowledge training 2. Conduct safety training for incoming new workers; 3. Guide the skills of personnel 4. Guide workers to renovate varieties; 5. Observe health, occupational and environmental safety rules and regulations.	**Detailed knowledge about:** **1.0 Methods** The person performing this task must be able to explain how to: 1.1 Determine training objectives, syllabus and content; 1.2 Train knowledge of fabric specifications, fabric weave drafts, and looming drafts; 1.3 Conduct loom equipment training; 1.4 Train loom operation techniques for should-know; 1.5 Train safety knowledge in weaving production; 1.6 Train the essentials of operational skills for renovating varieties. **2.0 Principles** The person performing this task must be able to explain the following principles: 2.1 Training and guidance syllabus standards; 2.2 Requirements for fabric specifications, fabric weave drafts, and looming drafts; 2.3 Loom equipment requirements; 2.4 Technical standards for safety operation of looms; 2.5 Defect handling requirements; 2.6 Operational cautions for renovating varieties.

	3.0 Theories The person performing this task must be able to explain the following: 3.1 Requirements for fabric specifications, fabric weave drafts, and looming drafts; 3.2 Loom equipment ahead; 3.3 Technical standards for safety operation of looms; 3.4 Operational points for renovating varieties; 3.5 Yarn technology. **4.0 Essential Skills** 4.1 Excellent verbal expression skills; 4.2 Communication skills; 4.3 Solid knowledge of machine weaving.
DESCRIPTION OF THE END PRODUCT / SERVICE	Weaving Training and guidance of weaving personnel is performed in accordance with approved industry standards and specifications.
CIRCUMSTANTIAL KNOWLEDGE	**Detailed knowledge about:** 1. Occupational health and safety; 2. Safety operation of equipment.

APPENDIX 1: DACUM CHARTS FOR TEXTILE TECHNICIAN - NTA LEVEL 6

DUTIES	TASKS	ENABLERS
1.0 Carry out drawing	1.1 Perform quality control of drawing. 1.2 Perform training and guidance of drawing personnel.	**General skills and knowledge** · Discovery of process problems · Discovery of chromatic aberration · Handling of defects such as rough strips, chromatic aberration and unevenness · The use of new drawing frame · Control of patrol time **Tools and equipment** · Drawing frame, spinning frame · Bobbin · Roller, spindle · Wrench, screwdriver **Materials** · Cotton, polyester, viscose rayon · Safety protective equipment, mask **Requirements for employees** · Report writing · Time management · Interpersonal skills · Teamwork skills
2.0 Conduct yarn spinning.	2.1 Perform spinning frame management. 2.2 Perform yarn quality management.	**General skills and knowledge** · Control of patrol time · Inspection of handover cleaning · Causes of defects and preventive measures · Solutions for missing and damaged parts of equipment **Tools and equipment** · Spinning Frame · Bobbin, flyer bobbin · Roller, spindle · Wrench, screwdriver

DUTIES	TASKS	ENABLERS
		Materials · Cotton, polyester, viscose rayon · Safety protective equipment, mask **Requirements for employees** · Report writing · Time management · Interpersonal skills · Teamwork skills
3.0 Carry out warping	3.1 Conduct warping frame management. 3.2 Conduct warp beam quality control. 3.3 Conduct fault identification and quality tracking. 3.4 Perform warping training and guidance.	**General skills and knowledge** · Frame patrol operation · Joint reeding operation · Yarn quality analysis · Warp beam quality inspection · Machinery fault identification · Frame safety operation skills · Warping defect analysis · Defect handling methods · Warping quality tracking · Warping training and guidance · Report writing **Tools and equipment** · Warping frame equipment · Warping frame hollow shaft · Yarn threading tools · Maintenance tools · Scissors, calculagraph · Warp beam quality detection equipment · Teaching equipment (multimedia, projectors, etc.) · Computers **Materials** · Yarn, accessory, quality registration form, stationery · Safety protection equipment (gloves) **Requirements for employees** · Honesty and trustworthiness · Diligence and punctuality

DUTIES	TASKS	ENABLERS
		· Communication skills · Teamwork skills · Customer service skills · Health and safety laws and regulations
4.0 Conduct weaving	4.1 Carry out operation and inspection of Drawing-in process . 4.2 Conduct basic loom operation. 4.3 Perform operation of press-off on the loom upper shaft and equipment adjustment. 4.4 Conduct fabric inspection and repair 4.5 Perform weaving quality control. 4.6 Carry out training and guidance of weaving workers.	**General skills and knowledge** · Drawing-in operation · Tying-in operation · Quality control of warp yarn · Equipment maintenance · Handling methods of broken ends · Handling methods of broken picks · Adjustment methods of warp yarn tension · Principles of determining warp yarn tension for fabrics · Common defect analysis · Weaving repair operation technology · Loom inspection · Cloth covers inspection · Warp and weft yarn inspection · Defect handling methods · Loom safety operation technology · Loom equipment knowledge · Operational cautions for renovating varieties · Weaving training and guidance · Report writing **Tools and equipment** · Loom equipment · Drawing-in hook · Yarn threading tools · Maintenance tools · Scissors, calculagraph · Weaving defect quality detection equipment · Teaching equipment (multimedia, projectors, etc.) · Computers **Materials**

DUTIES	TASKS	ENABLERS
		· Yarn, accessory, quality registration form, stationery · Safety protection equipment (gloves) **Requirements for employees** · Honesty and trustworthiness · Report writing · Communication skills · Teamwork skills · Customer service skills · Health and safety laws and regulations · Interpersonal skills