



Model Curriculum

QP Name: Cone Winder-cum-Pirn Winder

QP Code: TSC/Q7301

QP Version: 2.0

NSQF Level: 3

Model Curriculum Version: 2.0

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Training Parameters

Sector	Textile
Sub-Sector	Handloom & Khadi
Occupation	Weaver
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7318.99
Minimum Educational Qualification and Experience	Basic Literacy and Numeracy with 0-6 months of experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	19.05.2021
Next Review Date	19.05.2026
NSQC Approval Date	
QP Version	2.0
Model Curriculum Creation Date	19.05.2021
Model Curriculum Valid Up to Date	19.05.2026
Model Curriculum Version	2.0
Minimum Duration of the Course	300 Hours
Maximum Duration of the Course	300 Hours

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills.

- Receive and prepare the material for winding operation.
- Prepare the winding machine for operation.
- Operate the winding machine as per the SOP.
- Label and store the cones and pirns as per the SOP.
- Maintain work area, tools and machines as per guidelines.
- Follow greening and energy conservation activities as per guidelines.
- Follow protocols and guidelines for health, safety and security at workplace.
- Communicate and work effectively in a team.
- Comply with organizational and industry standards.
- Adhere to adaptability protocols and measures.

Compulsory Modules

The table lists the modules, their duration and mode of delivery.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
Bridge Module	03:00	01:00			04:00
Module 1: Introduction to handloom units and objectives of yarn winding operation	03:00	01:00			04:00
TSC/N7301: Operate the cone and pirn winding machine Version 2.0 NSQF Level – 4	64:00	152:00			216:00
Module 2: Operate cone and pirn winding machine	64:00	152:00			216:00
TSC/N9015: Follow machine, safety & organizational guidelines in Textile sector Version 1.0 NSQF Level – 4	19:00	46:00			65:00
Module 3: Maintaining the work area, tools and machines	02:00	06:00			08:00

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
Module 4: Greening and energy conservation in textile sector	02:00	06:00			08:00
Module 5: Health, safety and emergency response at workplace	09:00	23:00			32:00
Module 6: Organizational standards and policies	06:00	11:00			17:00
TSC/N9016:Follow teamwork, adaptability and communication guidelines in Textile sector Version 1.0 NSQF Level – 4	05:00	10:00			15:00
Module 7: Teamwork, trust and communication	03:00	07:00			10:00
Module 8: Adaptability	02:00	03:00			05:00
Total Duration	91:00	209:00			300:00

Module Details

Module 1: Introduction to handloom units and objectives of yarn winding operation.

Bridge Module

Terminal Outcomes:

- Describe the basics of yarn winding.
- Discuss the process and product flow in the handloom winding operation.
- Explain the objectives of the yarn winding operation.

Duration: 03:00	Duration: 01:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the objectives of skill development programs. • Discuss the contribution of Indian handloom sector to the country's economy. • Describe the basics of winding i.e., process flow, types of processes involved, types of yarn, winding tension, etc. • Explain the position of a cone-cum-pirn winder in yarn handloom operation and type of role to play. 	<ul style="list-style-type: none"> • Illustrate the process and material flow in a typical handloom yarn winding process. • Exchange views about possibilities of improvement in the Handloom sub-sector.
Classroom Aids:	
Charts, Posters, Projector, Blackboard.	
Tools, Equipment and Other Requirements	
Yarn winding process flow chart, yarn in hank form, empty cones/ pirns & bobbins, sample tools and accessories for cone and pirn winding, seating arrangement for 25 people, Cone and pirn winding setup.	

Module 2: Operate cone and pirn winding machine

Mapped to TSC/N7301, v2.0

Terminal Outcomes:

- Demonstrate the process for preparation and operation of cone and pirn winding machines.
- Follow the prescribed method of handling the tools, raw material, finished package, waste materials in the winding process.
- Discuss the repercussions of non-compliance.

Duration: 64:00	Duration: 152:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the roles and responsibilities of a cone-cum-pirn winder. • Describe the safe working practices, procedures, guidelines, and policies to be followed in the yarn winding process in handloom sub-sector. • Describe the potential hazards associated with the cone winding and pirn winding machines and the safety precautions. • Classify different types of yarns and count. • Classify different types of types of machines for cone and pirn winding. • Explain the function of various parts of the winding machine. • Recall common machine faults and respective troubleshooting methods. • Name the operational tools and equipment required to carry out the activities and the importance of cleaning them. • Explain the importance of winding quality requirements. • Classify various types of waste generated in the yarn winding process. • Discuss the cone and pirn winding process including the yarn tension requirements, knotting type, colour coding, labelling, size of the package. • State the repercussions of non-compliance. • Discuss the importance of prescribed method to untangle the hank yarn and repercussions of non-compliance. 	<ul style="list-style-type: none"> • Demonstrate the steps to check the winding machine and material for faults prior to production. • Perform the steps to receive the raw material for winding operation. • Demonstrate the process to get the required tools and equipment necessary to carry out the assigned tasks. • Exhibit the steps for collecting the empty cones, pirns, bobbins from the winding area. • Exhibit the process of joining the broken ends using prescribe knot. • Perform the steps to maintain the prescribed yarn tension throughout the winding operation. • Demonstrate how to set the winding machine and its parts for production requirement. • Demonstrate how to clean, operate and troubleshoot the allotted winding machine. • Perform the steps related to untangling, wrapping, and identification of starting end of the hank yarn as per instructions. • Demonstrate the steps to mount, doff, store and label the cones, pirn and bobbins. • Demonstrate the procedure to strip the remnants from cone, pirn and bobbins as per SOP. • Execute the steps to related to writing reports such as forms, production records, reports, etc.
Classroom Aids:	
Charts, Posters, Projector, Blackboard	
Tools, Equipment and Other Requirements	
Yarn in hank form, Yarn winding process flow chart, sample tools and accessories for cone and pirn winding, seating arrangement for 25 people, winding setup, empty cones/ pirns & bobbins.	

Module 3: Maintaining the work area, tools and machines

Mapped to TSC/N9015, v1.0

Terminal Outcomes:

- Demonstrate the process involved to keep up the winding area and allotted accessories.
- Discuss the need for of tools, equipment and PPE used in winding process.

Duration: 02:00	Duration: 06:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Recognize various types of tools used for cleaning and maintenance. • State the objectives of each maintenance and cleaning tool used in cone and pirn winding operations. • State the significance of safe handling procedure of tools and equipment. • Recall the significance of written instructions on the tools and accessories used in yarn winding operation. • Quote the significance of minimizing the wastage of material, effort, and time. • List the available types of material handling equipment and methods used in winding process. 	<ul style="list-style-type: none"> • Demonstrate the handling procedure of raw materials, tools, PPE, and machines as per SOP. • Identify the appropriate tools and equipment for the yarn winding process in handloom sector. • Demonstrate the scheduled cleaning of winding setup and related equipment. • Prepare a draft schedule for cleaning and waste collection for the assigned job role.
Classroom Aids:	
Charts, Posters, Projector, Blackboard.	
Tools, Equipment and Other Requirements	
Yarn in hank form, Yarn winding process flow chart, sample tools and accessories for cone and pirn winding, material handling equipment, tool kits of operational, cleaning and maintenance activities, PPE, seating arrangement for 25 people, empty cones/ pirns & bobbins.	

Module 4: Greening and energy conservation in textile sector

Mapped to TSC/N9015, v1.0

Terminal Outcomes:

- Classify the recyclable, non-recyclable and hazardous wastes in the winding process.
- Optimize usage of material and resources at workplace.

Duration: 02:00	Duration: 06:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the concepts of pollution control, soil conservation, waste management, recycle, forest conservation, global warming, organic products, etc. • List the different sources of energy. • Discuss the impact of using non-biodegradable materials on the environment. • Evaluate the different ways to conserve energy in winding process. • Discuss the significance of conserving environment and energy resources. • Discuss the significance of specified usage of resources at work area. 	<ul style="list-style-type: none"> • Demonstrate the process of segregation and storage of recyclable, non-recyclable, hazardous and non-hazardous wastes in the winding process. • Demonstrate the handling and storage of waste materials in the handloom yarn winding process.
Classroom Aids:	
Charts, Posters, Projector, Blackboard.	
Tools, Equipment and Other Requirements	
Video visuals on different sources of energy including solar power, Covers, bags, wrappers, box etc.	

Module 5: Health, safety, and emergency response at workplace

Mapped to TSC/N9015, v1.0

Terminal Outcomes:

- Perform first aid at workplace.
- Follow fire safety protocol in case of fire emergencies.
- Recognise hazardous materials in the winding process.

Duration: 09:00	Duration: 23:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the significance of safe handling procedure of tools and equipment in winding process. • Discuss the importance and standard procedure for handling raw and finished materials. • Discuss the impacts hazards of unsafe workplace conditions and procedures in winding process (operational, environmental, personal, ergonomic, chemical, electric, fire) and methods to avoid hazards. • Classify abnormal sounds emanating from faulty/worn out machine parts. • Discuss the types and importance of PPE used in the cone and pirn winding process in handloom sector. • Distinguish different types of alarms and their significance. • List the different items in a First Aid box. • Discuss the correct work posture and importance of ergonomics in the winding process. • Discuss the factors effecting health and importance of following healthy lifestyle practises. 	<ul style="list-style-type: none"> • Classify Personal Protective Equipment (PPEs) like body protector, ear plugs, nose mask, head cap, etc. as per guidelines. • Demonstrate handling of fire extinguishers. • Locate emergency exits of workplace. • Participate in mock fire drills / evacuation at workplace. • Demonstrate procedures for application of first aid procedures for injury/accidents in mock situations. • Demonstrate lifting of heavy weight materials as per standard procedure. • Distinguish between the various types of fire extinguishers. • Demonstrate healthy lifestyle practises.
Classroom Aids:	
Charts, Posters, Projector, Blackboard.	
Tools, Equipment and Other Requirements	
PPE, first aid kit, fire extinguishers, material handling equipment, seating arrangement for 25 people.	

Module 6: Organizational standards and policies

Mapped to TSC/N9015, v1.0

Terminal Outcomes:

- Recognize the significance of organization policies, quality standards in winding process.
- Explain the need for following standards and policies in a handloom process.

Duration: 06:00	Duration: 11:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the significance of following organizational standard procedures, quality standards, rules, policies and safety standards in winding process. • Discuss the need for organizational quality systems, 5S, ISO, SA, etc. following in the textile sector. • Brief the importance of following work wear standards, behavioural protocols and etiquette in handloom sector. • Describe the standard protocol for reporting lost and found material. • Discuss the contents of organisation’s formats and procedures for reporting production, defects, faults, material/tool requisition and quality parameters and task completed in the winding process. • Discuss the importance of discipline and adhering to timelines and state the effects of non-compliances. 	<ul style="list-style-type: none"> • Practice the systems like Quality circles, 5S, ISO, etc. in the routine work. • Exhibit the steps to maintain a hygienic and healthy workplace. • Prepare a lost and found report for submission to the competent authority. • Demonstrate self-evaluation of following the timelines and discipline protocol.
Classroom Aids:	
Charts, Posters, Projector, Blackboard.	
Tools, Equipment and Other Requirements	
list of rules and regulations followed in the organization, list of industry standards such as performance indicators of mills, process, worker, seating arrangement for 25 people.	

Module 7: Teamwork, trust and communication

Mapped to TSC/N9016, v1.0

Terminal Outcomes:

- Conform to standard guidelines while working with the team.
- Discuss the requirements of effective communication at workplace.

Duration: 03:00	Duration: 07:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the importance of teamwork and following industry protocols at workplace. • Explain the limits and responsibilities for the assigned duties in the winding process. • Summarize emergency contact numbers, details of officials, reporting Protocols and formats. • List hierarchy of communication and communication etiquettes in the winding process. • State the disadvantages of not adhering to team work and communication protocols. 	<ul style="list-style-type: none"> • Prepare a sample team performance report for an allotted task. • Demonstrate the use appropriate verbal and non-verbal communication skills while interacting with others at workplace.
Classroom Aids:	
Charts, Posters, Projector, Blackboard.	
Tools, Equipment and Other Requirements	
Video visuals of basic communications and team working, models of communicating and team working area at your job, seating arrangement for 25 people.	

Module 8: Adaptability

Mapped to TSC/N9016, v1.0

Terminal Outcomes:

- Operate at various environment and different people for the assigned task.
- Discuss the need of adaptability at the workplace.

Duration: 02:00	Duration: 03:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the significance of adaptability at workplace with various levels of people. • Discuss the importance of developing adaptability skills. • Discuss the impacts of inadaptability at the workplace. • Discuss various types of situations which demand adaptability skills. • Discuss various possibilities of basis of discrimination and ways to handle the same. 	<ul style="list-style-type: none"> • Demonstrate the ability to work in dynamic work environment by developing coping mechanisms, survival tactics and traits of flexibility. • Create a sample backup work plan for the shortage of man power, raw materials, etc. • Demonstrate communication with members of different gender, ethnicity and PWD. • Demonstrate the process of preparation of sample application for reporting discrimination, to the concerned authority.
Classroom Aids:	
Charts, Posters, Projector, Blackboard.	
Tools, Equipment and Other Requirements	
Video visuals of adaptability with suitable examples, seating arrangement for 25 people.	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Basic Literacy and Numeracy	5 th Class (Self-declaration)	6	Handloom	-	-	

Trainer Certification	
Domain Certification	Platform Certification
TSC/Q7301, v2.0 –Cone Winder-cum-Pirn Winder, Minimum pass percentage 80 per cent.	MEP/Q2601, v1.0 – Trainer, Minimum pass percentage 80 per cent.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
8 th Standard	NA	7	Handloom	-	-	

Assessor Certification	
Domain Certification	Platform Certification
TSC/Q7301, v2.0 – Cone Winder-cum-Pirn Winder, Minimum pass percentage 80 per cent.	MEP/Q2701, v1.0– Assessor, Minimum pass percentage 80 per cent

Assessment Strategy

The overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.

- a) The emphasis is on 'learn-by-doing' and practical demonstration of skills and knowledge based on the performance criteria.
- b) The assessments papers are developed by Subject Matter Experts (SME) available with the Assessment Agency as per the performances and assessment criteria mentioned in the Qualification Packs.
- c) The assessments papers are also checked for the various outcome-based parameters such as quality, time taken, tools & equipment requirement, etc.
- d) The assessments are designed so as to assess maximum parts during the practical hands-on work. Duties and responsibility of Cone Winder-cum-Pirn Winder also assessed. The technical limitations at the training centres are taken care in theory and viva.
- e) The assessment agencies are instructed to hire qualified and experienced assessors as per TSC's criteria who have integrity, reliability and fairness. Each assessor shall sign a document with its assessment agency by which they commit themselves to comply with the rules of confidentiality and conflict of interest, independence from commercial and other interests that would compromise impartiality of the assessments.
- f) The assessment agencies are instructed to ideally have assessors with the right mix of industry experience, academia and these are detailed in Assessment Agency Protocol of TSC
- g) The assessors selected by Assessment Agencies are scrutinized and made to undergo training and introduction to Assessment Framework, competency-based assessments, assessors guide etc. and they are assessed for Domain and assessment skills. Only those assessors who clears both the assessments with minimum 80% marks in each are permitted to carry out assessments.
- h) The assessors are provided with Assessor's guide developed by the Subject Matter Expert of the Assessment Agency or by Textile SSC as per Assessment Framework. The Assessors guides are developed to ensure the maximum possible consistency/transparency in the assessment by different assessors and elaborate on the following:
 1. Qualification Pack Structure.
 2. Guidance for the assessors to conduct theory, practical and viva assessments.
 3. Guidance for trainees to be given by assessor before the start of the assessments.
 4. Guidance on assessment process, practical brief with step of operational practical observation checklist Attendance Sheet and mark sheet.
 5. Viva guidance for uniformity and consistency across the batch.
 6. Guidance on assessment evidence collection.

The assessment results are backed by evidence collected by assessors.

1. The assessors need to collect a copy of the attendance sheets for the training done under the scheme. The attendance sheets are signed and stamped by the in charge/ Head of the training centre.
2. The assessors need to verify the authenticity of the candidate by checking the photo ID card issued by the institute as well as any one Photo ID card issued by the Central/Government. The same needs to be mentioned in the attendance sheet. In case of suspicion, the assessor should authenticate and cross verify trainee's credential in the enrolment form.
3. The assessors need to take a camera to click photograph of the trainees working on the job and giving theory exam as evidence.
4. The assessors also need to carry a Photo ID card.
5. The assessors also need to take the photographs as evidence from appropriate angles/sides of the final work piece/job submitted by the trainee.
6. The details on assessment framework are elaborated in Textile SSC protocol for accreditation of Assessment Agencies and Assessment Framework.

All accredited Assessment Agencies follow the "Textile SSC's protocol for accreditation of Assessment Agencies and Assessment Framework". Each NOS in the Qualification Pack (QP) will be assigned a relative weightage for assessment based on the criticality of the NOS. Therein each Performances Criteria in the NOS will be assigned marks for theory or practical based on relative importance, criticality of function and training infrastructure.

References

Glossary

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
OJT (M)	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
OJT (R)	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective or psychomotor skills.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

Term	Description
QP	Qualification Pack
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards
SOP	Standard Operating Procedure
PPE	Personal Protective Equipment
QC	Quality Control
ISO	International Organization for Standardization
SA	Standards on Auditing