



Shuttle Loom Operator cum Pirn Winder

Electives: Power loom/ Automatic shuttle loom

QP Code: TSC/Q2210

Version: 1.0

NSQF Level: 4

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TSC/Q2210: Shuttle Loom Operator cum Pirn Winder

Brief Job Description

A Shuttle loom operator cum Pirn winder is responsible for carrying out weaving activities in shuttle loom and pirn winding activity in pirn winding machine. The operator should be able to start and stop the shuttle loom, mend broken ends and picks and carry weft replenishment activities to produce defect free fabrics using shuttle loom and wind pirns using the pirn winding machine.

Personal Attributes

A Shuttle loom operator cum pirn winder (Power loom / Automatic Shuttle loom) should have physical attributes like dexterity, coordination, motor skills, strength, stamina and handle heavy equipment. The operator should also have sensory attributes like hearing ability and vision (normal distance vision, color vision, night vision, peripheral vision, depth perception and ability to change focus).

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [TSC/N2217: Taking charge of shift and handing over shift to operator - shuttle loom cum pirn winding machine](#)
2. [TSC/N2218: Carry out loom operation and mending of warp and weft breaks in shuttle loom](#)
3. [TSC/N2219: Operating the pirn winding machine](#)
4. [TSC/N9015: Follow machine, safety, and organizational guidelines in textile sector](#)
5. [TSC/N9016: Follow teamwork, adaptability, and communication guidelines in textile sector](#)

Electives (mandatory to select at least one):

Elective 1: Power loom

The Power loom operator should be able to carry out reserve shuttle change, weft pirn replenishment, operate the loom and explain the functions of various components used in shuttle/ shuttle box in Power loom.

1. [TSC/N2220: Carry out weft replenishment activity in Power loom](#)

Elective 2: Automatic shuttle loom

The Automatic shuttle loom operator should be able to prepare the auto pirn changing device, operate the Automatic shuttle loom and explain the functions of various components used in auto pirn changing mechanism in the Automatic shuttle loom.

1. [TSC/N2221: Preparation auto weft replenishment device in Automatic shuttle loom](#)

Qualification Pack (QP) Parameters

Sector	Textile
Sub-Sector	Weaving – Textiles
Occupation	Weaving
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/8152.9900
Minimum Educational Qualification & Experience	Basic Literacy and Numeracy with 0-6 Months of experience
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	19/03/2021
Next Review Date	19/03/2026
Deactivation Date	19/03/2026
NSQC Approval Date	
Version	1.0

TSC/N2217: Taking charge of shift and handing over shift to operator - shuttle loom cum pirn winding machine

Description

This unit is about taking charge of shift from previous shift shuttle loom operator and relieving the responsibilities to the next shift shuttle loom operator.

Scope

The scope covers the following :

- Taking charge of shift - Power loom / Automatic shuttle loom
- Handing over the shift to next shift operator - Power loom / Automatic shuttle loom

Elements and Performance Criteria

Taking charge of shift from previous shift operator (Power loom / Automatic shuttle loom)

To be competent, the user/individual on the job must be able to:

- PC1.** report for the shift 10-15 minutes prior to the scheduled time with necessary operational tools
- PC2.** collect the shift details from previous shift operator on production, maintenance, raw material, weft colour coding, empty and full pirn availability, etc. as per the SOP
- PC3.** match the received technical details with display board of the allotted looms and pirn winding machine
- PC4.** check the quality and availability of spares, production materials such as weft yarn package, empty and full weft pirns, weft cones, thrums, etc.
- PC5.** monitor condition of processing materials and accessories in the allotted looms such as fabric defects, running beams for cross ends, ends out, selvedge, full beams, pirn winding defects, etc.
- PC6.** check the size of the cloth rolls for doffing as per the SOP
- PC7.** report idle looms, shade variations, idle pirn spindles and other deviations to incoming shift supervisor
- PC8.** check work spot and allotted looms, pirn winding machine for cleanliness as per specifications

Handing over the shift to next shift operator (Power loom / Automatic Shuttle loom)

To be competent, the user/individual on the job must be able to:

- PC9.** provide shift details to incoming shift operator on production, maintenance, spare parts, counts, style changes, raw material availability, etc. as per the SOP
- PC10.** complete the shift end jobs like writing production log report, waste collection box disposal, cleaning as per standard protocol
- PC11.** report observed deviation to incoming shift supervisor on production, maintenance, absenteeism, etc.
- PC12.** get clearance from shift operator and shift supervisor before leaving the shift

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** potential hazards associated with shuttle looms and important safety precautions
- KU2.** protocol and standard procedures and formats to obtain information on work-related tasks in the weaving shed
- KU3.** details of the various job roles and responsibilities in the Automatic shuttle loom and Power loom weaving shed
- KU4.** fabric quality particulars such as ends and picks per inch, width, product weave, etc.
- KU5.** woven fabric defects and causes
- KU6.** pirn winding defects
- KU7.** woven fabric grading systems such as 4 point and 10 point
- KU8.** importance of quality fabric production
- KU9.** reporting methods and log book formats
- KU10.** protocol for taking charge, handing over the shift in Power loom/ Automatic shuttle loom department as per SOP

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write clear and short sentences in the log book such as loom and pirn winding production, maintenance, style change, etc.
- GS2.** communicate with colleagues and superiors as per standard protocol
- GS3.** comprehend written production, work method poster, safety, and routine maintenance instructions, etc.
- GS4.** calculate loom and pirn winding production, efficiency percentage, etc.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Taking charge of shift from previous shift operator (Power loom / Automatic shuttle loom)</i>	13	28	-	3
PC1. report for the shift 10-15 minutes prior to the scheduled time with necessary operational tools	-	-	-	-
PC2. collect the shift details from previous shift operator on production, maintenance, raw material, weft colour coding, empty and full pirn availability, etc. as per the SOP	-	-	-	-
PC3. match the received technical details with display board of the allotted looms and pirn winding machine	-	-	-	-
PC4. check the quality and availability of spares, production materials such as weft yarn package, empty and full weft pirns, weft cones, thrums, etc.	-	-	-	-
PC5. monitor condition of processing materials and accessories in the allotted looms such as fabric defects, running beams for cross ends, ends out, selvedge, full beams, pirn winding defects, etc.	-	-	-	-
PC6. check the size of the cloth rolls for doffing as per the SOP	-	-	-	-
PC7. report idle looms, shade variations, idle pirn spindles and other deviations to incoming shift supervisor	-	-	-	-
PC8. check work spot and allotted looms, pirn winding machine for cleanliness as per specifications	-	-	-	-
<i>Handing over the shift to next shift operator (Power loom / Automatic Shuttle loom)</i>	13	28	-	2
PC9. provide shift details to incoming shift operator on production, maintenance, spare parts, counts, style changes, raw material availability, etc. as per the SOP	-	-	-	-
PC10. complete the shift end jobs like writing production log report, waste collection box disposal, cleaning as per standard protocol	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. report observed deviation to incoming shift supervisor on production, maintenance, absenteeism, etc.	-	-	-	-
PC12. get clearance from shift operator and shift supervisor before leaving the shift	-	-	-	-
NOS Total	26	56	-	5

National Occupational Standards (NOS) Parameters

NOS Code	TSC/N2217
NOS Name	Taking charge of shift and handing over shift to operator - shuttle loom cum pirn winding machine
Sector	Textile
Sub-Sector	Weaving - Textiles
Occupation	Weaving
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	04/09/2018
Next Review Date	30/06/2019
NSQF Clearance Date	19/02/2016

TSC/N2218: Carry out loom operation and mending of warp and weft breaks in shuttle loom

Description

This unit is about carrying out loom operation, mending of warp and weft breaks, and other work responsibilities in shuttle loom department (Power loom/ Automatic Shuttle loom).

Scope

The scope covers the following :

- Running the shuttle loom
- Mending warp breaks
- Mending weft breaks
- Other work responsibilities in shuttle loom

Elements and Performance Criteria

Running the shuttle loom

To be competent, the user/individual on the job must be able to:

- PC1.** verify the checkpoints before starting the shuttle loom as per prescribed standard such as shuttle box spindle, strap, picking stick, loom drive, shuttle position, heald shafts, heald shaft drives, etc.
- PC2.** start the loom using starting handle from the prescribed loom position
- PC3.** stop the loom at the required loom position as per the standard method
- PC4.** perform inching operation in the allotted shuttle looms
- PC5.** switch on the auxiliary devices required for shuttle loom operation such as warp and weft stop motions, weft patterning panels, etc.

Mending warp breaks

To be competent, the user/individual on the job must be able to:

- PC6.** identify the broken warp end by standard technique
- PC7.** mend the broken end using weaver's knot using allotted thrums
- PC8.** draw the mended warp yarn through the healds, reed dent as per the prescribed drawing and denting order using drawing hook
- PC9.** fix the drawn broken end outside the fell of cloth
- PC10.** verify the warp break signal lamp is resetted after broken end drawing

Mending weft breaks

To be competent, the user/individual on the job must be able to:

- PC11.** take the broken weft out of the shed as per specified procedure
- PC12.** insert shuttle from the broken weft position to continue the weft supply by following standard procedure
- PC13.** check the weft pattern as per the specified design before starting the shuttle loom
- PC14.** change the shuttle and shedding pattern repeat as per specified design

Other work responsibilities in the shuttle loom

To be competent, the user/individual on the job must be able to:

- PC15.** store the required weft pirns in the pirn storage container of allocated loom as per loom card
- PC16.** rectify running fabric defects like wrong drawing and denting, missing end, double end, weft breaks etc. in the allotted looms
- PC17.** clean the allocated looms and work area as per defined schedule
- PC18.** run the shuttle loom without starting mark or weft crack
- PC19.** patrol the allotted looms as per specified method and schedule
- PC20.** adjust the warp yarn tension as per the requirement
- PC21.** doff cloth roller as per the SOP
- PC22.** report to the fitters for abnormalities in the functions of allotted looms
- PC23.** place the thrumbs at the specified place on the loom
- PC24.** identify and report surface damages of the shuttle
- PC25.** clear the surface damages of the shuttle using specified emery sheet

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** potential hazards associated with shuttle looms and safety precautions
- KU2.** woven fabric quality requirements
- KU3.** weavability of various yarns such as natural fibres, manmade fibres and blended fibres on shuttle looms
- KU4.** various types of looms for woven fabric production
- KU5.** types of shuttles used for woven fabric production
- KU6.** types of emery paper and its usage in shuttle loom department
- KU7.** various types of shedding mechanism and its working principle
- KU8.** shuttle changing mechanisms in shuttle looms
- KU9.** weft pattern and shedding pattern creation
- KU10.** mendable and non-mendable woven fabric defects
- KU11.** time limits for attending various types of stoppages in the shuttle looms
- KU12.** different types of weaves such as plain, twill, satin, jacquard designs, etc.
- KU13.** organizational quality systems like 5S, ISO, SA, etc.
- KU14.** remedies of various types of fabric defects such as weaver oriented, machine oriented, raw material oriented, etc.
- KU15.** tolerance limits for cloth width, Ends Per Inch (EPI), Picks Per Inch (PPI), etc.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write clear and short sentences in the shuttle loom production log book
- GS2.** communicate with colleagues and superiors as per standard protocol

GS3. comprehend written production, work method poster, safety, routine maintenance instructions, etc.

GS4. plan the tasks based on instructions from superiors

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Running the shuttle loom</i>	26	57	-	5
PC1. verify the checkpoints before starting the shuttle loom as per prescribed standard such as shuttle box spindle, strap, picking stick, loom drive, shuttle position, heald shafts, heald shaft drives, etc.	-	-	-	-
PC2. start the loom using starting handle from the prescribed loom position	-	-	-	-
PC3. stop the loom at the required loom position as per the standard method	-	-	-	-
PC4. perform inching operation in the allotted shuttle looms	-	-	-	-
PC5. switch on the auxiliary devices required for shuttle loom operation such as warp and weft stop motions, weft patterning panels, etc.	-	-	-	-
<i>Mending warp breaks</i>	26	56	-	4
PC6. identify the broken warp end by standard technique	-	-	-	-
PC7. mend the broken end using weaver's knot using allotted thrums	-	-	-	-
PC8. draw the mended warp yarn through the healds, reed dent as per the prescribed drawing and denting order using drawing hook	-	-	-	-
PC9. fix the drawn broken end outside the fell of cloth	-	-	-	-
PC10. verify the warp break signal lamp is resetted after broken end drawing	-	-	-	-
<i>Mending weft breaks</i>	26	56	-	4
PC11. take the broken weft out of the shed as per specified procedure	-	-	-	-
PC12. insert shuttle from the broken weft position to continue the weft supply by following standard procedure	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. check the weft pattern as per the specified design before starting the shuttle loom	-	-	-	-
PC14. change the shuttle and shedding pattern repeat as per specified design	-	-	-	-
<i>Other work responsibilities in the shuttle loom</i>	26	56	-	4
PC15. store the required weft pirns in the pirn storage container of allocated loom as per loom card	-	-	-	-
PC16. rectify running fabric defects like wrong drawing and denting, missing end, double end, weft breaks etc. in the allotted looms	-	-	-	-
PC17. clean the allocated looms and work area as per defined schedule	-	-	-	-
PC18. run the shuttle loom without starting mark or weft crack	-	-	-	-
PC19. patrol the allotted looms as per specified method and schedule	-	-	-	-
PC20. adjust the warp yarn tension as per the requirement	-	-	-	-
PC21. doff cloth roller as per the SOP	-	-	-	-
PC22. report to the fitters for abnormalities in the functions of allotted looms	-	-	-	-
PC23. place the thrumbs at the specified place on the loom	-	-	-	-
PC24. identify and report surface damages of the shuttle	-	-	-	-
PC25. clear the surface damages of the shuttle using specified emery sheet	-	-	-	-
NOS Total	104	225	-	17

National Occupational Standards (NOS) Parameters

NOS Code	TSC/N2218
NOS Name	Carry out loom operation and mending of warp and weft breaks in shuttle loom
Sector	Textile
Sub-Sector	Weaving - Textiles
Occupation	Weaving
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

TSC/N2219: Operating the pirn winding machine

Description

This unit provides performance criteria, knowledge and skills required to run pirn winding machine by attending to yarn breakages so as to get maximum productivity with minimum defects as per standard operating procedures as per received specifications.

Scope

The scope covers the following :

- Stripping of empty pirns
- Running the pirn winding machine
- Other job responsibilities of pirn winding operator

Elements and Performance Criteria

Stripping of empty pirns

To be competent, the user/individual on the job must be able to:

- PC1.** collect empty pirns from loom and strip-out the weft yarn as per standard procedure
- PC2.** segregate the pirns with excess yarn for rewinding on fresh pirns
- PC3.** segregate broken and damaged pirns to store at the specified place
- PC4.** polish the pirns using prescribed polish paper as per standard

Running the pirn winding machine

To be competent, the user/individual on the job must be able to:

- PC5.** check material and count of the weft yarn as per job card
- PC6.** store the full pirns inside the corresponding weft box
- PC7.** report the deviations in bunch building, auto pirn change, thread stop motion, etc. in the allotted pirn winding machine
- PC8.** perform threading of weft yarn as per standard procedure
- PC9.** identify and mend the broken thread manually or by using hand knotter as per prescribed method
- PC10.** doff full pirns and load empty pirns as per standard procedure
- PC11.** fill the magazine of automatic pirn winding machine with specified yarn package

Other job responsibilities of pirn winding operator

To be competent, the user/individual on the job must be able to:

- PC12.** verify and report the condition of brass ferrule or reflecting tape
- PC13.** polish the ferrule or replace the tape as per standard method
- PC14.** collect the waste in waist bag as per the SOP
- PC15.** dispose the yarn waste at shift end in the specified place
- PC16.** identify the reasons for the frequent yarn breaks and rectify under own limits of responsibility
- PC17.** maintain the prescribed reserve bunch length for the suggested weft materials

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** potential hazards associated with pirn winding machines and important safety precautions to be taken
- KU2.** details of the various job roles and responsibilities in pirn winding section
- KU3.** importance of material handling and types of material handling equipment used in the pirn winding section
- KU4.** causes and remedies of various types of pirn winding defects
- KU5.** standard procedure of attending the spindles in case of multiple spindle stoppage
- KU6.** permissible waste percentage in the pirn winding section
- KU7.** standard pirn winding efficiency for various counts, yarn, and filament types
- KU8.** types of knots and knotting efficiency for various yarn and filaments
- KU9.** types of polish paper and associated number
- KU10.** types of pirns and its dimensions

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write clear and short sentences in the log book such as pirn winding defects, maintenance, count change, etc.
- GS2.** communicate with colleagues and superiors as per standard protocol
- GS3.** comprehend written production, work method poster, safety, routine maintenance instructions, etc.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Stripping of empty pirns</i>	7	15	-	4
PC1. collect empty pirns from loom and strip-out the weft yarn as per standard procedure	-	-	-	-
PC2. segregate the pirns with excess yarn for rewinding on fresh pirns	-	-	-	-
PC3. segregate broken and damaged pirns to store at the specified place	-	-	-	-
PC4. polish the pirns using prescribed polish paper as per standard	-	-	-	-
<i>Running the pirn winding machine</i>	16	50	-	5
PC5. check material and count of the weft yarn as per job card	-	-	-	-
PC6. store the full pirns inside the corresponding weft box	-	-	-	-
PC7. report the deviations in bunch building, auto pirn change, thread stop motion, etc. in the allotted pirn winding machine	-	-	-	-
PC8. perform threading of weft yarn as per standard procedure	-	-	-	-
PC9. identify and mend the broken thread manually or by using hand knotter as per prescribed method	-	-	-	-
PC10. doff full pirns and load empty pirns as per standard procedure	-	-	-	-
PC11. fill the magazine of automatic pirn winding machine with specified yarn package	-	-	-	-
<i>Other job responsibilities of pirn winding operator</i>	7	22	-	4
PC12. verify and report the condition of brass ferrule or reflecting tape	-	-	-	-
PC13. polish the ferrule or replace the tape as per standard method	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. collect the waste in waist bag as per the SOP	-	-	-	-
PC15. dispose the yarn waste at shift end in the specified place	-	-	-	-
PC16. identify the reasons for the frequent yarn breaks and rectify under own limits of responsibility	-	-	-	-
PC17. maintain the prescribed reserve bunch length for the suggested weft materials	-	-	-	-
NOS Total	30	87	-	13

National Occupational Standards (NOS) Parameters

NOS Code	TSC/N2219
NOS Name	Operating the pirn winding machine
Sector	Textile
Sub-Sector	Weaving – Textiles
Occupation	Weaving
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	NA
Next Review Date	NA
NSQF Clearance Date	

TSC/N9015: Follow machine, safety, and organizational guidelines in textile sector

Description

This unit provides performance criteria, knowledge and skills required to follow machine, safety and organizational guidelines in textile sector.

Scope

The scope covers the following :

- Maintaining the work area, tools and machines
- Greening and energy conservation in textile sector
- Health, safety and response to emergencies at textile sector
- Organizational standards and policies

Elements and Performance Criteria

Maintaining the work area, tools and machines

To be competent, the user/individual on the job must be able to:

- PC1.** handle materials, machinery, equipment and tools as per standard procedure
- PC2.** use appropriate material handling equipment and tools as per standard procedure
- PC3.** keep the equipment, machine and work area clean using appropriate cleaning tools as per standard procedure
- PC4.** undertake minor routine maintenance of equipment and tools as per standard maintenance procedure
- PC5.** maintain record for defective and unsafe equipment and tools
- PC6.** verify that machine guards are in place as per standard specifications
- PC7.** follow specified ergonomics for the assigned job role in textile sector
- PC8.** collect and store worn-out spare parts at specified location
- PC9.** report the condition of worn out parts as per standard procedure

Greening and energy conservation in textile sector

To be competent, the user/individual on the job must be able to:

- PC10.** segregate wastes such as recyclable, non-recyclable, hazardous as per standard protocol
- PC11.** optimize usage of material and resources including water, electricity in various tasks
- PC12.** switch off the machines and lights when not in use

Health, safety and response to emergencies at textile sector

To be competent, the user/individual on the job must be able to:

- PC13.** use Personal Protective Equipment (PPEs) like body protector, ear plugs, nose mask, head cap, etc. as per guidelines
- PC14.** identify abnormal sounds emanating from faulty or worn out machine parts and take appropriate action
- PC15.** avoid dependency on any type of intoxicants
- PC16.** maintain social distance as per the instruction at workplace

- PC17.** report hazardous material to superiors at workplace
- PC18.** use the various appropriate fire extinguishers on different types of fires correctly
- PC19.** follow the specified steps in case of electricity failure
- PC20.** lift heavy objects using correct lifting procedures
- PC21.** recall emergency exits, safe spots, etc. of workplace
- PC22.** practice mock drills and evacuation procedures organized by industry
- PC23.** assist others to reach to safe spots in emergency situations
- PC24.** provide basic first aid for injury to peers and report to superiors
- PC25.** interpret different signs, alarms and take action appropriately
- PC26.** follow the guidelines while working in hazards atmosphere
- PC27.** assist in designing the safety plans with peers and superiors
- PC28.** follow the approved safety plans at workplace

Organizational standards and policies

To be competent, the user/individual on the job must be able to:

- PC29.** perform assigned duties as per organization's protocol within scheduled time period
- PC30.** follow organization policies, quality standards, rules and regulations for working in textile sector
- PC31.** motivate colleagues to follow operational guidelines of organization
- PC32.** wear specified uniform and follow etiquette as per standard guidelines for the textile sector
- PC33.** maintain hygienic working atmosphere as per protocol of the textile sector
- PC34.** submit lost and found articles as per standard protocol

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** organizational standard procedures, quality standards, rules, codes, policies and safety standards in the textile sector
- KU2.** different type of tools and equipment used in textile sub- sector and their specifications and operating procedures
- KU3.** safe handling procedure of tools and equipment
- KU4.** the importance of displays and written instructions for the allocated machines
- KU5.** dos and donts specific to the assigned work responsibilities
- KU6.** protocol for minimizing the wastage of material, effort and time
- KU7.** organization's formats and procedures for reporting production, defects, faults, material/tool requisition and quality parameters and task completed for assigned job
- KU8.** schedule for cleaning and waste collection for the assigned job role
- KU9.** importance and standard procedure for disposal of soft, hard, non-hazardous and hazardous wastes and materials
- KU10.** available types of material handling equipment and handling methods used in the textile sector
- KU11.** hazards of unsafe workplace conditions and procedures in the textile industry and methods to avoid hazards

- KU12.** various types of fire extinguishers
- KU13.** importance of stable mental condition in case of emergency
- KU14.** correct work posture and importance of ergonomics for the assigned job role
- KU15.** organizational quality systems like quality circle, 5S, ISO, SA, etc. followed in the textile sector
- KU16.** importance of following work wear standards, behavioral protocols and etiquette in the textile sector
- KU17.** importance of energy conservation through proper maintenance schedule in the textile sector
- KU18.** procedures and formats for reporting lost and found material
- KU19.** different types of alarms and their significance

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read and comprehend policies in notice boards displayed in the workplace
- GS2.** minimize the resource consumption for the assigned task
- GS3.** solve basic arithmetic calculations related to assigned job role
- GS4.** recognize and differentiate colors of materials used in textile sector
- GS5.** lift specified materials for the allotted task using prescribed ergonomic position
- GS6.** exhibit motor skill required for the allotted task

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Maintaining the work area, tools and machines</i>	10	10	-	6
PC1. handle materials, machinery, equipment and tools as per standard procedure	-	-	-	-
PC2. use appropriate material handling equipment and tools as per standard procedure	-	-	-	-
PC3. keep the equipment, machine and work area clean using appropriate cleaning tools as per standard procedure	-	-	-	-
PC4. undertake minor routine maintenance of equipment and tools as per standard maintenance procedure	-	-	-	-
PC5. maintain record for defective and unsafe equipment and tools	-	-	-	-
PC6. verify that machine guards are in place as per standard specifications	-	-	-	-
PC7. follow specified ergonomics for the assigned job role in textile sector	-	-	-	-
PC8. collect and store worn-out spare parts at specified location	-	-	-	-
PC9. report the condition of worn out parts as per standard procedure	-	-	-	-
<i>Greening and energy conservation in textile sector</i>	7	10	-	6
PC10. segregate wastes such as recyclable, non-recyclable, hazardous as per standard protocol	-	-	-	-
PC11. optimize usage of material and resources including water, electricity in various tasks	-	-	-	-
PC12. switch off the machines and lights when not in use	-	-	-	-
<i>Health, safety and response to emergencies at textile sector</i>	32	40	-	28

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. use Personal Protective Equipment (PPEs) like body protector, ear plugs, nose mask, head cap, etc. as per guidelines	-	-	-	-
PC14. identify abnormal sounds emanating from faulty or worn out machine parts and take appropriate action	-	-	-	-
PC15. avoid dependency on any type of intoxicants	-	-	-	-
PC16. maintain social distance as per the instruction at workplace	-	-	-	-
PC17. report hazardous material to superiors at workplace	-	-	-	-
PC18. use the various appropriate fire extinguishers on different types of fires correctly	-	-	-	-
PC19. follow the specified steps in case of electricity failure	-	-	-	-
PC20. lift heavy objects using correct lifting procedures	-	-	-	-
PC21. recall emergency exits, safe spots, etc. of workplace	-	-	-	-
PC22. practice mock drills and evacuation procedures organized by industry	-	-	-	-
PC23. assist others to reach to safe spots in emergency situations	-	-	-	-
PC24. provide basic first aid for injury to peers and report to superiors	-	-	-	-
PC25. interpret different signs, alarms and take action appropriately	-	-	-	-
PC26. follow the guidelines while working in hazards atmosphere	-	-	-	-
PC27. assist in designing the safety plans with peers and superiors	-	-	-	-
PC28. follow the approved safety plans at workplace	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Organizational standards and policies</i>	16	20	-	10
PC29. perform assigned duties as per organization's protocol within scheduled time period	-	-	-	-
PC30. follow organization policies, quality standards, rules and regulations for working in textile sector	-	-	-	-
PC31. motivate colleagues to follow operational guidelines of organization	-	-	-	-
PC32. wear specified uniform and follow etiquette as per standard guidelines for the textile sector	-	-	-	-
PC33. maintain hygienic working atmosphere as per protocol of the textile sector	-	-	-	-
PC34. submit lost and found articles as per standard protocol	-	-	-	-
NOS Total	65	80	-	50

National Occupational Standards (NOS) Parameters

NOS Code	TSC/N9015
NOS Name	Follow machine, safety, and organizational guidelines in textile sector
Sector	Textile
Sub-Sector	Generic - Textiles Handloom
Occupation	Generic - Textiles & Handloom
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

TSC/N9016: Follow teamwork, adaptability, and communication guidelines in textile sector

Description

This unit provides performance criteria, knowledge and skills required to follow team work, communication and adaptability in textile sector

Scope

The scope covers the following :

- Teamwork and communication
- Adaptability

Elements and Performance Criteria

Teamwork, trust and communication

To be competent, the user/individual on the job must be able to:

- PC1.** contribute to create a positive work environment in the team
- PC2.** carry out tasks as per instructions received from superiors
- PC3.** contribute to team work as per allocated responsibility to complete the task by using appropriate tools and methods
- PC4.** build trust with team mates and superiors
- PC5.** implement the ideas after superior's approval at work place
- PC6.** communicate clearly with the team members as per standard protocol
- PC7.** use suggested hand signs, vocal sound signals to convey the information in the production area
- PC8.** listen effectively to the ideas and concerns of the peers
- PC9.** use correct and respectful terms while communicating as per industry policy
- PC10.** express views proactively and effectively
- PC11.** make efforts to resolve difference of opinion with superiors and team members
- PC12.** report to superior for problems identified in assigned duty
- PC13.** report the daily performance to superior in prescribed manner and formats

Adaptability

To be competent, the user/individual on the job must be able to:

- PC14.** adapt to flexible work environment for the assigned task
- PC15.** adapt to work with various members of different ethnicity, gender and PwD without biases
- PC16.** consider opinions of colleagues, fitters, superiors for the assigned task
- PC17.** plan the work-routine within the limits of the responsibility
- PC18.** adopt new ideas after due approval from superior for improving the productivity

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** importance of teamwork and discipline
- KU2.** limits and responsibilities for the assigned duties in the textile sector
- KU3.** possible conflicts in the assigned job role and methods to resolve the same
- KU4.** importance of teamwork, group discussions and healthy work environment
- KU5.** importance of reporting as per the standard protocol
- KU6.** hierarchy of communication and communication etiquettes in the textile sector
- KU7.** protocol for communication with different ethnicity, gender and PwD
- KU8.** report and grievance submission formats
- KU9.** importance of hand, vocal sound signals in the textile sector

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read and comprehend written instructions
- GS2.** listen effectively for the instructions
- GS3.** coordinate with team mates for the allotted tasks
- GS4.** use and comprehend prescribed voice and hand signals in the textile production area
- GS5.** fill forms and prepare reports such as production report, material requisition forms, leave application, etc. as per standard formats

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Teamwork, trust and communication</i>	10	15	-	5
PC1. contribute to create a positive work environment in the team	-	-	-	-
PC2. carry out tasks as per instructions received from superiors	-	-	-	-
PC3. contribute to team work as per allocated responsibility to complete the task by using appropriate tools and methods	-	-	-	-
PC4. build trust with team mates and superiors	-	-	-	-
PC5. implement the ideas after superior's approval at work place	-	-	-	-
PC6. communicate clearly with the team members as per standard protocol	-	-	-	-
PC7. use suggested hand signs, vocal sound signals to convey the information in the production area	-	-	-	-
PC8. listen effectively to the ideas and concerns of the peers	-	-	-	-
PC9. use correct and respectful terms while communicating as per industry policy	-	-	-	-
PC10. express views proactively and effectively	-	-	-	-
PC11. make efforts to resolve difference of opinion with superiors and team members	-	-	-	-
PC12. report to superior for problems identified in assigned duty	-	-	-	-
PC13. report the daily performance to superior in prescribed manner and formats	-	-	-	-
<i>Adaptability</i>	5	5	-	5
PC14. adapt to flexible work environment for the assigned task	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC15. adapt to work with various members of different ethnicity, gender and PwD without biases	-	-	-	-
PC16. consider opinions of colleagues, fitters, superiors for the assigned task	-	-	-	-
PC17. plan the work-routine within the limits of the responsibility	-	-	-	-
PC18. adopt new ideas after due approval from superior for improving the productivity	-	-	-	-
NOS Total	15	20	-	10

National Occupational Standards (NOS) Parameters

NOS Code	TSC/N9016
NOS Name	Follow teamwork, adaptability, and communication guidelines in textile sector
Sector	Textile
Sub-Sector	Generic - Textiles Handloom
Occupation	Generic - Textiles & Handloom
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

TSC/N2220: Carry out weft replenishment activity in Power loom

Description

This unit provides performance criteria, knowledge and skills required to replenish the weft package in Power looms.

Scope

The scope covers the following :

- Carry out reserve shuttle change
- Carry out pirn change

Elements and Performance Criteria

Carry out reserve shuttle change

To be competent, the user/individual on the job must be able to:

- PC1.** stop the loom for weft replenishment at required loom position
- PC2.** take out the exhausted pirn shuttle from the shuttle box as per the standard procedure
- PC3.** insert the reserve shuttle loaded with specified pirn inside the shuttle box
- PC4.** verify the position of the shuttle before starting the loom

Carry out pirn change

To be competent, the user/individual on the job must be able to:

- PC5.** lift the shuttle tongue upside to the maximum play area to remove the exhausted pirn
- PC6.** fix the full pirn inside the shuttle tongue and lock in the bottom position
- PC7.** thread the weft yarn through the specified eyes of the shuttle
- PC8.** store the empty pirns in the allotted bin
- PC9.** transfer the empty pirn bin to the pirn winding department

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** potential hazards associated with handling the shuttles and safety precautions
- KU2.** shuttle quality requirements
- KU3.** shuttle and pirn dimensions used in the department
- KU4.** various types of pirns
- KU5.** weft yarn waste and remnant tolerance range
- KU6.** components of the shuttle
- KU7.** maintenance methods of shuttles
- KU8.** effects of incorrect position of pirn inside the shuttle
- KU9.** effects of incorrect position of shuttle inside the shuttle box
- KU10.** the need for threading weft yarn through the shuttle eyes

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write clear and short sentences on weft pirn stock
- GS2.** calculate weft yarn remnant produced in a shift

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out reserve shuttle change</i>	8	26	-	8
PC1. stop the loom for weft replenishment at required loom position	-	-	-	-
PC2. take out the exhausted pirn shuttle from the shuttle box as per the standard procedure	-	-	-	-
PC3. insert the reserve shuttle loaded with specified pirn inside the shuttle box	-	-	-	-
PC4. verify the position of the shuttle before starting the loom	-	-	-	-
<i>Carry out pirn change</i>	9	27	-	9
PC5. lift the shuttle tongue upside to the maximum play area to remove the exhausted pirn	-	-	-	-
PC6. fix the full pirn inside the shuttle tongue and lock in the bottom position	-	-	-	-
PC7. thread the weft yarn through the specified eyes of the shuttle	-	-	-	-
PC8. store the empty pirns in the allotted bin	-	-	-	-
PC9. transfer the empty pirn bin to the pirn winding department	-	-	-	-
NOS Total	17	53	-	17

National Occupational Standards (NOS) Parameters

NOS Code	TSC/N2220
NOS Name	Carry out weft replenishment activity in Power loom
Sector	Textile
Sub-Sector	Weaving - Textiles
Occupation	Weaving
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

TSC/N2221: Preparation auto weft replenishment device in Automatic shuttle loom

Description

This unit provides performance criteria, knowledge and skills required to prepare the auto weft replenishment device in Automatic shuttle loom.

Scope

The scope covers the following :

- Preparation of auto weft replenishment device

Elements and Performance Criteria

Preparation of Auto weft replenishment device

To be competent, the user/individual on the job must be able to:

- PC1.** clear the extra weft yarn accumulation from the battery discs
- PC2.** adjust the picking stick, strap to allow the shuttle to the weft replenishment position inside the shuttle box
- PC3.** verify the availability of required reserve bunch of weft yarn at the base of the pirn
- PC4.** arrange the allotted weft pirn package as per the design requirement such as single colour pirn in single battery, multi colour pirns in multiple batteries
- PC5.** thread the weft inside the thread holder through guides
- PC6.** clear the accumulated dust from the weft feeler mechanism
- PC7.** report the abnormalities in the components of the automatic pirn changing mechanism
- PC8.** place the empty pirn collection box at the specified location under rotary battery

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** importance of bunch winding on base of the pirns
- KU2.** types of shuttles and pirns used in Automatic shuttle looms
- KU3.** importance of self-threading shuttle usage in Automatic shuttle looms
- KU4.** function of weft fork mechanisms, shuttle protector, weft feeler mechanisms used in Automatic shuttle looms
- KU5.** types of weft feeler mechanisms such as mechanical, electrical, photo electrical
- KU6.** working principle of yarn cutting devices

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** calculate the time required for pirn change in Automatic shuttle looms
- GS2.** calculate the reserve bunch length requirement for the running style
- GS3.** draw the mechanism of Auto weft replenishment device

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Preparation of Auto weft replenishment device</i>	17	53	-	17
PC1. clear the extra weft yarn accumulation from the battery discs	-	-	-	-
PC2. adjust the picking stick, strap to allow the shuttle to the weft replenishment position inside the shuttle box	-	-	-	-
PC3. verify the availability of required reserve bunch of weft yarn at the base of the pirn	-	-	-	-
PC4. arrange the allotted weft pirn package as per the design requirement such as single colour pirn in single battery, multi colour pirns in multiple batteries	-	-	-	-
PC5. thread the weft inside the thread holder through guides	-	-	-	-
PC6. clear the accumulated dust from the weft feeler mechanism	-	-	-	-
PC7. report the abnormalities in the components of the automatic pirn changing mechanism	-	-	-	-
PC8. place the empty pirn collection box at the specified location under rotary battery	-	-	-	-
NOS Total	17	53	-	17

National Occupational Standards (NOS) Parameters

NOS Code	TSC/N2221
NOS Name	Preparation auto weft replenishment device in Automatic shuttle loom
Sector	Textile
Sub-Sector	Weaving – Textiles
Occupation	Weaving
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	NA
Next Review Date	NA
NSQC Clearance Date	

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.

The assessment for the theory part will be based on knowledge bank of questions created by the SSC.

Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).

Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.

In case of successfully passing only certain number of NOSs, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.

In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack

Minimum Aggregate Passing % at QP Level : 70

(Please note: Every Trainee should score a minimum aggregate passing percentage as specified above, to

successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
TSC/N2217.Taking charge of shift and handing over shift to operator - shuttle loom cum pirn winding machine	26	56	-	5	87	10
TSC/N2218.Carry out loom operation and mending of warp & weft breaks in shuttle loom	104	225	-	17	346	38
TSC/N2219.Operating the pirn winding machine	30	87	-	13	130	15
TSC/N9015.Follow machine, safety & organizational guidelines in Textile sector	65	80	-	50	195	22
TSC/N9016.Follow teamwork, adaptability, and communication guidelines in textile sector	15	20	0	10	45	5
Total	240	468	0	95	803	90

Elective: 1 Power loom

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
TSC/N2220.Carry out weft replenishment activity in Power loom	17	53	-	17	87	10
Total	17	53	0	17	87	10

Elective: 2 Automatic shuttle loom

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
TSC/N2221.Preparation auto weft replenishment device in Automatic shuttle loom	17	53	-	17	87	10
Total	17	53	0	17	87	10

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is 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 quality of performance required.
Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.

Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.