







# **Model Curriculum**

## **Knotting Machine Operator**

SECTOR: TEXTILE

**SUB-SECTOR: WEAVING - TEXTILE** 

OCCUPATION: WEAVING

REF ID: TSC/Q2205 VERSION 3.0

NSQF LEVEL: 3















### Certificate

## CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

TEXTILE SECTOR SKILL COUNCIL

#### MODEL CURRICULUM

Complying to National Occupational Standards of Job Role/

Qualification Pack **Knotting Machine Operator** QP No. 'TSC/ Q 2205' NSQF Level 3'

Date of Issuance: January, 27th, 2022
Valid up to: January, 27th, 2025

 $*\ \textit{Valid up to the next review date of the Qualification Pack}$ 

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## **Knotting Machine Operator**

### CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a "**Knotting Machine Operator**", in the "Textile" Sector/ Industry and aims at building the following key competencies amongst the learner

Program Name	Knotting Machine Operator						
Qualification Pack Name & Reference ID.	Knotting Machine Operator TSC/Q2205, version 3.0						
Version No.	3.0 Version Update Date 27.01.2022						
Pre-requisites to Training	Grade 9 with No Experience (OR) Grade 8 pass and pursuing continuous schooling in regular school with vocational subject with no experience (OR) Sth grade pass with 1 year of relevant experience (OR) Sth grade pass with 4 years of relevant experience (OR) Ability to read and write with 5 years of experience						
Training Outcomes	After completing this programme, participants will be able to:  Perform taking charge of shift and handing over shift Operate the Knotting machine Maintain work area, tools and machines Gain behavioral skill for team working Maintain health, safety and security at work place Comply with industry and organizational requirement						









This course encompasses 6 out of 6 National Occupational Standards (NOS) of "Knotting Machine Operator" Qualification Pack issued by "TSC: Textile Sector Skill Council"

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	Taking charge of shift and handing over shift to Knotting Machine operator  Theory Duration (hh:mm) 15:00  Practical Duration (hh:mm) 60:00  Corresponding NOS Code TSC/N 2209	<ul> <li>Learn general discipline</li> <li>Become well verse with basic skills of communication</li> <li>Understand the role of Knotting machine operator</li> <li>Perform tasks while taking charge of shift and handing over shift</li> <li>Become familiar in fabric faults identification</li> </ul>	Class room requirements: a batch of 25 people seating capacity with a screen and projector
2	Operating the Knotting machine  Theory Duration (hh:mm) 45:00  Practical Duration (hh:mm) 90:00  Corresponding NOS Code TSC/N 2210	<ul> <li>Perform the mounting of beams on the looms</li> <li>Perform dressing of beams</li> <li>Perform knotting and running of knotted looms</li> </ul>	1. common for every batch: poster/video visuals for work method 2. Class room requirements: a batch of 25 people seating capacity with a screen and projector
3	Maintain work area, tools and machines  Theory Duration (hh:mm) 05:00  Practical Duration (hh:mm) 10:00  Corresponding NOS Code TSC/N 9001	<ul> <li>Gain knowledge on Housekeeping system</li> <li>Identify and know unique functions of basic hand tools like cleaning hook, cleaning stick, bag, etc.</li> <li>Handling equipment importance</li> <li>Perform maintenance activities for handling equipment</li> </ul>	common for every batch:     poster/video visuals for     work method     Class room     requirements: a batch of     people seating     capacity with a screen     and projector









4	Working in a team  Theory Duration (hh:mm) 05:00  Practical Duration (hh:mm) 10:00  Corresponding NOS Code TSC/N 9002	<ul> <li>Understand the team work and its importance</li> <li>Know the basic requirements for team working</li> </ul>	Class room requirements: a batch of 25 people seating capacity with a screen and projector
5	Maintain health, safety and security at work place  Theory Duration (hh:mm) 15:00  Practical Duration (hh:mm) 30:00  Corresponding NOS Code TSC/N 9003	<ul> <li>Gain knowledge on various health hazards relevant to workplace and basic first aid training.</li> <li>Identify and select right equipment such as fire extinguisher &amp; based on type of fire.</li> <li>Perform good practice on first aid, fire fighting etc.</li> </ul>	common for every batch:     poster/video visuals for work     method     Class room requirements:     a batch of 25 people seating     capacity with a screen and     projector
6	Comply with industry and organisational requirement  Theory Duration (hh:mm) 05:00  Practical Duration (hh:mm) 10:00  Corresponding NOS Code TSC/N 9004	<ul> <li>Knowledge about organizational and industry standards</li> <li>Knowledge the requirements for self-development</li> <li>Gain knowledge on Organizational &amp; Industry standards</li> </ul>	Class room requirements: 25 people seating capacity with a screen and projector









### 7 Employability Skills (30 Hours)

# Theory Duration (hh:mm) 12:00

#### Practical Duration (hh:mm) 18:00

• Discuss the importance of Employability Skills in meeting the job requirements.

- Explain constitutional values, civic rights, duties, citizenship, responsibility towards society etc. that are required to be followed to become a responsible citizen.
- Show how to practice different environmentally sustainable practices
- Discuss 21st century skills.
- Display positive attitude, self-motivation, problem solving, time management skills and continuous learning mindset in different situations.
- Use appropriate basic English sentences/ phrases while speaking
- Demonstrate how to communicate in a well -mannered way with others.
- Demonstrate working with others in a team
- Show how to conduct oneself appropriately with all genders and PwD
- Discuss the significance of reporting sexual harassment issues in time
- Discuss the significance of using financial products and services safely and securely.
- Explain the importance of managing expenses, income, and savings.
- Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws
- Show how to operate digital devices and use the associated applications and features, safely and securely
- Discuss the significance of using internet for browsing, accessing social media platforms, safely and securely.
- Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges.
- Differentiate between types of customers
- Explain the significance of identifying customer needs and addressing them
- Discuss the significance of maintaining hygiene and dressing appropriately.
- · Create a biodata
- Use various sources to search and apply for jobs
- Discuss the significance of dressing up neatly and maintaining hygiene for an interview
- Discuss how to search and register for apprenticeship opportunities.

Class room requirements: 25 people seating capacity with a screen and projector









Total	Unique Equipment Required:
<b>Duration:</b>	Apron, head cap, nose mask, earplug, shoe, Knotter, Combing brush, Cleaning brush, Leasing rods.
Theory	
Duration	
102:00	
Practical	
Duration	
228:00	

**Grand Total Course Duration: 330 Hours, 0 Minutes** 

(This syllabus/ curriculum has been approved by TSC: Textile Sector

**Skill Council**)









# Trainer Prerequisites for Job role: "Knotting machine Operator" mapped to Qualification Pack: "Knotting machine Operator, TSC/Q 2205, Version 3.0"

Sr. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack <u>"Knotting machine operator,TSC/Q2205"</u>
2	Personal Attributes	Aptitude for conducting training, and pre/ post work to ensure competent, Employable candidates at the end of the training. Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well-organized and focused, eager to learn and keep oneself updated with the latest in the mentioned field.
3	Minimum Educational Qualifications	Basic Literacy and Numeracy
4a	Domain Certification	Certified for Job Role: "Knotting machine Operator" mapped to QP: "Knotting machine Operator TSC Q2205, Version 3.0".
4b	Platform Certification	Required that the Trainer is certified for MEP/Q2601 Job Role: "Trainer" with atleast 80% score
5	Experience	4 years experience in specific sector as a trainer with 1 year as a knotter

### **Employability Trainer Prerequisites**

Trainer Prerequisites							
Minimum Educational	Specialization	Relevant Industry Experience		Trainiı	ng Experience	Remarks	
Qualification		Years	Specialization	Years	Specialization		
Graduate/CITS	Any Discipline			2	Teaching Experience	Prospective ES trainer should:	
Current ITI Trainers	Employability Skills Training (3 days full- time course done between 2019-2022)					<ul> <li>have good communication skills</li> <li>be well versed in English</li> </ul>	
Certified current EEE trainers (155 hours) Certified Trainer	from Management SSC (MEPSC) Qualification					<ul> <li>have digital skills</li> <li>have attention to detail</li> <li>be adaptable</li> <li>have willingness to</li> </ul>	
	Pack: Trainer (MEP/Q0102)					learn	









**Job Role: Knotting Machine Operator** 

**Qualification Pack: Knotting Machine Operator (TSC/Q 2205)** 

Sector Skill Council: Textile Sector Skill Council

#### **Guidelines for assessment: -**

- 1. Criteria for assessment for each qualification pack will be created by the Sector Skill Council. Each performance criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for theory & skill practical for each PC.
- 2. The assessment for the theory part will be based on knowledge bank of question created by the SSC.
- 3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (as per assessment criteria below)
- 4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on these criteria.
- 5. To pass the qualification pack, every trainee should score a minimum of 50%.
- 6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

National Occupational	Performance Criteria (PC)	Total Marks	Out Of	Ma	rks Alloca	ition
Standards (NOS)				Theory	Skills Practi cal	Viva
1.TSC/N2209 (Taking charge of shift and	PC1. Come at least 10 - 15 minutes earlier to the work spot.	160	13	0	11	2
handing over shift to Knotting	PC2. check for the necessary items like "gum tape", "knotting comb", "knotting brush", "knife" etc.		12	2	8	2
Machine Operator)	res. meet the previous sinit		12	2	8	2
	PC4. Check the run outs for his/ her shift.		12	3	6	3
	PC5. Check whether any sort change program is there for the said run outs.		12	3	7	2
	PC6. Check the availability of the beams and accordingly to inform the same to the higher authority.		15	5	7	3









	PC7. Check the availability of the knotting needles required for the running counts of the running beams.		15	5	7	3
	PC8. check the condition of the knotting stand, knotting machine, knotting needles etc.		12	3	6	3
	PC9. Make entries in the "knotting entry note" for all the knotting carried out in his/ her shift.		12	2	10	0
	PC10. hand over the shift to the incoming knotting machine operator in a proper manner & get clearance from the incoming counterpart before leaving the work spot		15	5	10	0
	PC11. Report to his/ her shift superiors as well as that of the incoming shift, in case his/ her counterpart doesn't come for work for the incoming shift. in that case, the shift has to be properly handed over to the incoming shift superior & get clearance from him/ her, before leaving the work spot		15	5	10	0
	PC12. report to his/ her shift superior about the quality / production / safety issues/ any other issue faced in his/ her shift and should leave the department only after getting concurrence for the same from his/ her superiors		15	5	10	0
	Total		160	40	100	20
		Weightage %		25%	63%	12%
2. TSC/N2210 (Operate the Knotting Machine)	PC1. Check whether the loom is stopped with warp, just required for (around 2-3 meters) knotting. if not, it has to be ensured	340	10	2	6	2
	PC2. report to the higher authority, if the loom is stopped with excess warp, doe to beam complaint,		10	0	8	2









PC3. Report to the higher authority when the knotting has to be carried out in the looms with twin beams (in most of the cases), to see whether there is difference in the left our warp meters.	8	0	6	2
PC4. correct the dropper crossing ( if any)	8	4	4	0
PC5. Check whether any ends are left out in the run out beams, particularly near the selvedge. To bring the same to the knowledge of the higher authority and act as per his/ her instructions.	10	5	5	0
PC6. Check the condition of the reed on the loom in the selvedge sides. For any deviation, the same has to be brought to the knowledge of the higher authority and act as per his/her advice.	10	3	4	3
PC7. Check whether any bead formation is there in the droppers. if so ,the same has to be removed	10	5	5	0
PC8. Check the condition of the run out beams for the beam fault like "soft size", "size patches", "shade variation" etc. to check the suitability of the said beams for knotting. The same has to be brought to the knowledge of the higher authority and act as per his/her advice.	8	3	3	2
PC9. Cut the old warp as to be cut in the run out looms, leaving 2-3 meters of warp length required for knotting.	10	3	4	3
PC10. Cover the left warp with card board or polythene sheet or with hope sack if the qty left out due to beam complaint is more as per the advice of the higher authority, in the run out beams. the following details have to be written in a "beam ticket" and the same has to be pasted in the said beams, peel out the earlier beam	8	0	6	2









tickets pasted in the said beams:-				
PC11. Remove the cut empty beams from the loom shed and have to be brought to the place, where they have to be stored.	8	3	3	2
PC12. Clean thoroughly the loom, an all the places, as advised by the higher authority.	10	0	8	2
PC13. Ensure proper lubrication as per the advice of the higher authority.	8	2	6	0
PC14. Check whether the fresh beams are properly covered for any variation, the same has to be brought to the notice of the higher authority.	8	2	6	0
PC15. check the loom card to ascertain the fresh beams to be loaded, by checking the following.:- warp count total ends set no. beam nos ( for the opposite sides) beam meters ( there should not be any difference in meters)	8	2	6	0
PC16. Bring the fresh beams from the place they are stored to the loom, where knotting has to be carried out.	8	2	6	0
PC17. Check the condition of the fresh beams after removing the beam wrappers. For transit damages and accordingly the same has to be brought to the notice of the higher authority. lie that, the fresh beam has to be checked for beam complaint like "sunken ends" "soft size", "size patches "etc., further action can be carried out as per the advice of the higher authority only.	8	3	5	0









PC18. mount the fresh beams have on the loom carefully without imparting damage to the raw material, beams, machine, or for any person including himself or herself.	8	3	5	0
PC19. Ensure beam alignment, in case of "twin beams" ensure "no cross "in the old warp. A group of not more than 100 ends can be taken & brushed properly.	8	2	4	2
PC20. check for the sizing tapes in the fresh beams	8	2	4	2
PC21. cut the fresh warp in the second tape	8	2	4	2
PC22. Bring the fresh warp to the knotting stand without any cross using knotting comb.	8	2	4	2
PC23. Correct the cross in the old warp also using knotting comb, before bringing the same to the knotting stand.	8	2	4	2
PC24. dress the warp sheet carefully without giving room for "cross "or" ends cit" etc.	8	2	4	2
PC25. weigh the knotting waste & the same has to be recorded in the knotting entry note"	8	2	4	2
PC26. Tie the "thrums "(sufficient enough till the run out) on the loom, neatly.	10	2	6	2
PC27. Collect the knotting waste & store in the place earmarked.	10	2	6	2
PC28. Use the needle that is earmarked for the beams mounted.	8	4	4	0
PC29. Check the machine & the needle by doing few knots. For any deviation to bring the same to the notice of the higher authority to do the knotting of the beams in the speed as advised by the higher authority.	8	5	3	0









	PC30. Check for "double end", "knot slippage" etc. through close monitoring of the performance of the knotting.		8	5	3	0
	PC31. remove the knotting machine from the stand		8	6	2	0
	PC32. Remove the knotting stand from the knotted loom collect the waste and to get the same stored in the place, earmarked.		8	4	4	0
	PC33. apply the beam locks (if any) & to see that the knotted beams are in tight condition so as to run the machine without any problem, till the knots reach the "droppers zone"		10	7	3	0
	PC34. bring the knots out of the "droppers" "healds wires" "reed "etc., without entertaining breakage of much warp ends		8	5	3	0
	PC35. draw the broken warp ends		8	6	1	1
	PC36. ensure proper functioning of the warp stop motion		8	6	1	1
	PC37. apply "color cone" & to ensure no "double end" is left out on the fabric		8	4	4	0
	PC38. see that the extra ends are routed through "extra ends clips" & wound properly in the "extra ends bobbin"		8	2	5	1
	PC39. See that the roll is doffed properly.		8	1	7	0
	PC40. See that the doffed roll is removed from the loom and brought to the place, earmarked.		8	2	6	0
	Total		340	117	182	41
	Weight age %			34%	54%	12%
3. TSC/N 9001 (Maintain work area, tools and	PC1. handle materials, machinery, equipment and tools with care and use them in the correct way	50	4	2	1	1
toois and	PC2. use correct lifting and handling		4	2	1	1









machines)	procedures					
	PC3. use materials to minimize waste		3	1	1	1
	PC4. maintain a clean and hazard free working area		3	1	1	1
	PC5. maintain tools and equipment		4	1	2	1
	PC6. carry out running maintenance within agreed schedules		4	2	1	1
	PC7. carry out maintenance and/or cleaning within one's responsibility		4	2	1	1
	PC8. report unsafe equipment and other dangerous occurrences		4	2	1	1
	PC9. ensure that the correct machine guards are in place		3	1	1	1
	PC10. work in a comfortable position with the correct posture		3	1	1	1
	PC11. use cleaning equipment and methods appropriate for the work to be carried out		3	1	1	1
	PC12. dispose of waste safely in the designated location		4	2	1	1
	PC13. store cleaning equipment safely after use		3	1	1	1
	PC14. carry out cleaning according to schedules and limits of responsibility		4	2	1	1
	Total		50	21	15	14
	Weight age %			42%	30%	28%
4. TSC/N 9002 (Working in a team)	PC1. be accountable to the own role in whole process	50	5	1	3	1
	PC2. perform all roles with full responsibility		4	1	2	1
	PC3. be effective and efficient at workplace		4	2	1	1
	PC4. properly communicate about		4	1	1	2









	company policies					
	PC5. report all problems faced during the process		4	1	1	2
	PC6. talk politely with other team members and colleagues		4	1	1	2
	PC7. submit daily report of own performance		5	2	2	1
	PC8. adjust in different work situations		4	1	2	1
	PC9. give due importance to others' point of view		4	1	1	2
	PC10. avoid conflicting situations		4	2	1	1
	PC11. develop new ideas for work procedures		4	2	1	1
	PC12. improve upon the existing techniques to increase process efficiency		4	2	1	1
	Total		50	17	17	16
	Weight age %			34%	34%	32%
5. TSC/N 9003 (Maintain health, safety	PC1. Comply with health and safety related instructions applicable to the workplace	100	5	2	2	1
and security at work place)	PC2. Use and maintain personal protective equipment as per protocol		5	2	2	1
	PC3. Carry out own activities in line with approved guidelines and procedures		4	1	2	1
	PC4. Maintain a healthy lifestyle and guard against dependency on intoxicants		4	1	2	1
	PC5. Follow environment management system related procedures		4	1	2	1
	PC6. Identify and correct (if possible) malfunctions in machinery and equipment		5	2	2	1
	PC7. Report any service malfunctions		4	1	2	1









PC8. Store materials and equipment in line with manufacturer's and organizational requirements	4	2	1	1
PC9. Safely handle and move waste and debris	4	2	1	1
PC10. Minimize health and safety risks to self and others due to own actions	5	2	2	1
PC11. Seek clarifications, from supervisors or other authorized personnel in case of perceived risks	4	0	2	2
PC12. Monitor the workplace and work processes for potential risks and threats	5	2	2	1
PC13. Carry out periodic walk-through to keep work area free from hazards and obstructions, if assigned	5	2	2	1
PC14. Report hazards and potential risks/ threats to supervisors or other authorized personnel	4	2	1	1
PC15. Participate in mock drills/ evacuation procedures organized at the workplace	4	2	2	0
PC16. Undertake first aid, fire-fighting and emergency response training, if asked to do so	5	2	2	1
PC17. Take action based on instructions in the event of fire, emergencies or accidents	5	2	2	1
PC18. Follow organization procedures for shutdown and evacuation when required	4	1	2	1
PC19. identify different kinds of possible hazards (environmental, personal, ergonomic, chemical) of the industry	4	1	2	1
PC20. recognize other possible security issues existing in the workplace	4	1	2	1
PC21. recognize different measures to curb the hazards	4	1	2	1









	PC22. communicate the safety plan to everyone		4	1	2	1
	PC23. attach disciplinary rules with the implementation		4	1	2	1
	Total		100	34	43	23
	Weight age %			34%	43%	23%
6. TSC/N 9004	PC1. perform own duties effectively	50	4	2	1	1
(Comply with industry and organizational	PC2. take responsibility for own actions		4	2	1	1
requirement)	PC3. be accountable towards the job role and assigned duties		4	1	2	1
	PC4. take initiative and innovate the existing methods		3	1	1	1
	PC5. focus on self-learning and improvement		4	2	1	1
	PC6. co-ordinate with all the team members and colleagues		4	2	1	1
	PC7. communicate politely		4	1	1	2
	PC8. avoid conflicts and miscommunication		4	2	1	1
	PC9. know the organizational standards		4	1	2	1
	PC10. implement them in your performance		4	2	1	1
	PC11. motivate others to follow them		3	1	1	1
	PC12. know the industry standards		4	1	3	0
	PC13. align them with organization standards		4	1	2	1
	Total		50	19	18	13
	Weightage %			38%	36%	26%









National		Total Ou	Out	Marks Allocation			
Occupational Standards (NOS)	Performance Criteria (PC)	Marks	Of	Theory Marks	Practical Marks	Viva Marks	
7. DGT/VSQ/	Introduction to Employability Skills			1	1	-	
N0101 – Employability	1. understand the significance of						
Skills	employability skills in meeting the						
	job requirements						
	Constitutional values – Citizenship			1	1	-	
	2. identify constitutional values, civic						
	rights, duties, personal values and						
	ethics and environmentally						
	sustainable practices.						
	Becoming a Professional in the 21st			1	3	-	
	Century				_		
	3. explain 21st Century Skills such as						
	Self-Awareness, Behavior Skills, Positive attitude, self-motivation,						
	problem-solving, creative thinking,						
	time management, social and						
	cultural awareness, emotional						
	awareness, continuous learning						
	mindset etc.						
	Basic English Skills			2	3	-	
	4. speak with others using some basic						
	English phrases or sentences						
	Communication Skills			1	1	-	
	5. follow good manners while						
	communicating with others						
	6. work with others in a team						
	Diversity & Inclusion			1	1	-	
	7. communicate and behave						
	appropriately with all genders and PwD						
	8. report any issues related to sexual						
	harassment						
	Financial and Legal Literacy			3	4	-	
	9. use various financial products and						
	services safely and securely						
	10. calculate income, expenses,						
	savings etc.						
	11. approach the concerned authorities						
	for any exploitation as per legal						
	rights and laws						









12. operate digital devices and use its				
12. Operate digital devices and use its				
features and applications securely				
and safely				
13. use internet and social media				
platforms securely and safely				
Entrepreneurship		3	5	-
14. identify and assess opportunities				
for potential business				
15. identify sources for arranging				
money and associated financial				
and legal challenges				
Customer Service		2	2	-
16. identify different types of				
customers				
17. identify customer needs and				
address them appropriately.				
18. follow appropriate hygiene and				
grooming standards.				
Getting ready for apprenticeship &		1	3	_
Jobs		1	3	_
19. create a basic biodata				
20. search for suitable jobs and apply				
21. identify and register apprenticeship				
opportunities as per requirement				
NOS Total	50	20	30	-
Grand Total	800	268	405	127







### **Textile Sector Skill Council**

15th Floor, Nirmal Tower, Barakhamba Road, New Delhi-110 001