

NSDA Reference

To be added by NSDA

Name and address of submitting body:

Textiles Committee (Ministry of Textiles, Govt. Of India)

P Balu Road, Prabhadevi Chowk,

Mumbai -400025

Name and contact details of individual dealing with the submission

Name: Kartikay Dhanda

Position in the organisation: Director (Lab)

Address if different from above:

Tel number(s): 022-66527519, 66527520

E-mail address: tcrsaisds@gmail.com, dlab.tc@nic.in

List of documents submitted in support of the Qualifications File:

1. Career map of CAD Operator
2. CAD Operator Course Module
3. Format for RFP for Assessment Agency Accreditation from RSA
4. Assessment Protocol developed by RSA
5. Skill gap report for textile sector
6. Assessment Sheet
7. Photographs and attendance sheets of validation program

SUMMARY

Qualification Title	CAD Operator
Qualification Code	TC GMT 05
Nature and purpose of the qualification	A certificate course under ISDS (A project of Govt. Of India) Purpose: To convert a non worker (layman) into a worker (able to operate CAD software)
Body/bodies which will award the qualification	Textiles Committee under (RSA) Ministry of Textiles
Body which will accredit providers to offer courses leading to the qualification	Ministry of Textiles/ Office of textiles commissioner/ Resource Support Agency (Textiles Committee)
Body/bodies which will carry out assessment of learners	<ul style="list-style-type: none">• Andhra Pradesh Productivity Council• Apparel Export Promotion Council• Axis Education Society• Base Research Consultancy services Private Limited• C.K. Skill Research & Development Ltd.• Centre for Recruitment and Selection Pvt Ltd• Crux Management Services Pvt Ltd• Eduworld Consultants Pvt Ltd.• Employable Skills Advancement Assessment and Certification LLP (ESAAC LLP)• Fashion Futures• Federation of Indian Chamber of Commerce and Industry (FICCI)• Federation of Indian Women Entrepreneurs (FIWE)• Human Potential Development Center• Induslynk Training services Pvt. Ltd.• Itcot Consultancy & Services Ltd.• K S Rangasamy Institute of Technology• Kapokh Fibers & Industries Ltd.• Manipal City & Guilds Pvt. Ltd

- Methods Apparel Consultancy India Pvt Ltd.
- Multi Skills Assessors Guild (MSAG)
- National Institute of Fashion Technology (NIFT)
- Nice Education & Welfare Trust
- Northern India Textile Research Association (NITRA)
- PSG College of Technology
- PVR Skill Central Pvt Ltd.
- Quibus Technologies Pvt Ltd
- Skills Training Assessment Management Partners Ltd. (STAMP)
- Sona Cotsyn Pvt Ltd
- Techno Tex Informatics Pvt Ltd.
- The Assessors Guild (TAG)
- The Associated Chambers of Commerce And Industry of India (ASSOCHAM)
- Trendsetters Skill Assessors Pvt Ltd.
- TUV SUD South Asia Pvt Ltd
- University of Calcutta

Occupation(s) to which the qualification gives access

CAD Operator

Licensing requirements

N/A

Level of the qualification in the NSQF

3

Anticipated volume of training/learning required to complete the qualification

300 hrs

Entry requirements and/or recommendations

The candidate should be able to read and write in any language.

Progression from the qualification

Non Worker to CAD Operator

Planned arrangements for

As the course is basically designed for a non worker to worker (entry level

the Recognition of Prior learning (RPL)	course) there is no requirement of RPL. Making RPL mandatory for the non-worker can act as a hindrance for a non-worker for registering to the course. However the ability to read and write in local language as well as previous knowledge can be assessed by the Implementing Agency itself.		
International comparability where known	N/A-		
Date of planned review of the qualification.	20/9/2018		
Formal structure of the qualification			
Title of component and identification code.	Mandatory/ Optional	Estimated size (learning hours)	Level
	Optional	(learning hours)	
Theoretical Knowledge to impart relevant basic technical information of the machines and it's operations	Mandatory	60	3
Practical knowledge of the course to understand the work practises and operating the machines.	Mandatory	210	3
Soft Skills to improve safety, behaviour, hygiene, attitude, etc.	Mandatory	30	3

Please attach any document giving further detail about the structure of the qualification – eg a Curriculum Document or a Qualification Pack.

1. CAD Operator course module – Annexure II

SECTION 1

ASSESSMENT

Body/Bodies which will carry out assessment:

- Andhra Pradesh Productivity Council
- Apparel Export Promotion Council

- Axis Education Society
- Base Research Consultancy services Private Limited
- C.K. Skill Research & Development Ltd.
- Centre for Recruitment and Selection Pvt Ltd
- Crux Management Services Pvt Ltd
- Eduworld Consultants Pvt Ltd.
- Employable Skills Advancement Assessment and Certification LLP (ESAAC LLP)
- Fashion Futures
- Federation of Indian Chamber of Commerce and Industry (FICCI)
- Federation of Indian Women Entrepreneurs (FIWE)
- Human Potential Development Center
- Induslynk Training services Pvt. Ltd.
- Itcot Consultancy & Services Ltd.
- K S Rangasamy Institute of Technology
- Kapokh Fibers & Industries Ltd.
- Manipal City & Guilds Pvt. Ltd
- Methods Apparel Consultancy India Pvt Ltd.
- Multi Skills Assessors Guild (MSAG)
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- PVR Skill Central Pvt Ltd.
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- Trendsetters Skill Assessors Pvt Ltd.
- TUV SUD South Asia Pvt Ltd
- University of Calcutta

These assessing agencies have been chosen through a transparent process after thorough scrutiny of the credentials presented in response to the two stage RFPs. All of them have prior experience of minimum 2 years of carrying out similar assessments in the field of textiles. On the directions of ministry,

RSA has empanelled agencies from the different sector skill councils viz. Textile Sector Skill Council (TSC) and Apparel and Home Made-ups Sector Skill Councils (AMHSSC). An assessment protocol, in this regard has also been prepared and forwarded to all the assessment agencies so as to standardise the assessment process. The assessors of the above said agencies are approved for assessment only after thorough scrutiny of their (assessor) documents submitted by the agencies. In this regard, the agencies forward the fully filled Know Your Assessor (KYA) form along with requisite documents. The empanelled Assessment Agencies were allotted regions. The above exercise was done on the directions of Ministry of Textiles. Further, to maintain the quality in assessment, RSA occasionally conducts surprise checks to monitor the activities of assessment agencies.

How will RPL assessment be managed and who will carry it out?

The Implementing Agencies will assess the RPL at the time of enrolling the candidates.

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

- a) The emphasis is on 'learning-by-doing' and practical demonstration of skills and knowledge based on the performance criteria.
- b) The assessment Sheets are developed by Subject Matter Experts (SME) available with the Resource Support Agency.
- c) The assessments sheets are also checked for the various outcome based parameters such as technical knowledge, soft skills, Practical Knowledge, & equipment requirement, etc.
- d) The assessments are designed so as to assess maximum parts during the practical hands on work. Duties and responsibility of a CAD Operator are also assessed.
- e) The assessment agencies are instructed to hire assessors with integrity, reliability and fairness. Each assessor shall sign a document with its assessment agency by which they commit that they are not associated with any other assessment agencies or any training partner to avoid any 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 assessor with right mix of industry experience, academia and these are detailed in Assessment Protocol
- g) The documents of the assessors selected by Assessment Agencies are then forwarded to RSA for further scrutiny.
- h) The selected assessors are provided with unique assessor id by RSA as per the assessment protocol.

The assessment results are backed by evidences collected by assessors.

1. The assessor ensures that the attendances of the trainees are equal to or more than 60%.
2. The assessor needs to verify the authenticity of the candidate by confirming the biometric identity. In case of suspicion, the assessor should authenticate and cross verify trainee's credentials in the enrolment form.
3. The assessor collects the assessment summary sheet with signature of both the assessor and the Implementing Agency's coordinator after successful completion of the assessment.
4. The assessor also needs to carry a photo ID card.
5. The assessor verifies whether the training infrastructure is in compliance to the criteria as set by RSA.

6. The details on assessment are elaborated in the Assessment Protocol developed by RSA.

All accredited Assessment Agency follow the "Assessment Protocol developed by RSA". Each course module comprises of soft skills, theoretical part and practical and accordingly the assessment sheets are prepared. The marks for the theoretical and practical assessment, in total, are calculated and the candidates acquiring marks equal to or more than 60% are declared pass.

Please attach any documents giving further information about assessment and/or RPL.

Give details of the document(s) here:

1. Format of RFP for AA Accreditation from RSA- Annexure III
2. Assessment Protocol Developed by RSA – Annexure IV

ASSESSMENT EVIDENCE

Learning outcomes would be assessed separately for practical as well as theoretical knowledge by the assessment agency.

Title of Course Module: CAD Operator

Learning Outcomes		Total Weitage (in %age)
1. Practical Assessment	Different parts and styles of garment	50
	Understanding of AutoCAD Interface and Basic Tools for Pattern Drafting and Grading	
	Digitizing system - by CAD software	
	Pattern making Process by CAD software	
	Grading systems by CAD software	
	Marker making systems by CAD software	
	Shrinkage Setting System by CAD software	
	Plotting of Patterns by CAD software	
	Use of marker tool bar	
	Dos & Don'ts in case of fire or any emergency situation.	
	Weightage %	

2. Theoretical Assessment	Sequence of operations in garment production	50
	Various types of fabric and common market terms of fabric in garment industry.	
	Different parts and styles of garment	
	Methods of pattern making using CAD software	
	Grading system	
	Marker system	
	Pattern shrinkage system	
	Components of a first aid box	
	Attitude of the worker towards work and work place	
	Auto CAD plotting	
	Weightage %	50
Grand Total	100	

Title of Component: CAD Operator

Outcomes to be assessed	Assessment criteria for the outcome
<p>Practical Outcome: Responsible to make various types of Patterns and able to understand the use of Auto CAD tools and equipments. Understanding of AutoCAD Interface and basic tools for Pattern Drafting and Grading, Understanding of the various devices like digitizers, plotters etc. Understand all bodice measurement techniques, etc.</p>	<p>The trainee should be able to understand the use of all Auto CAD tools and equipments. Make out a basic pattern as per bodice size/ specification chart. She/he should have knowledge of the pattern grading, marking on patterns by using Auto CAD. She/he should be able to identify the different tools in the software and know their uses. She/he must be able to take proper bodice measurement.</p>
<p>Theoretical Outcome: Knowledge of basis textiles terms, different parts and style of garments, Understand the basic AutoCAD functions like – Digitizing system, Pattern making Process, Grading systems, Marker making systems, Shrinkage Setting System, Plotting of Patterns Marking on patterns, use of marking tools, Able to make out fabric consumption.</p> <p>Safety precautions</p>	<p>The trainee should have the knowledge of different parts and styles of the garments like- Collar, Upper bodice, sleeves, lower bodice, pockets etc, she/he should be able to know the method of pattern preparation by using Auto CAD and other required devices like Digitizers, Plotters, etc and know the specific use of the Auto Cad tools. She/he should know the basic size measurements and methods of grading and altering the pattern as well as she/he should be able to make out the fabric consumption to use.</p> <p>The trainee should know Safety precautions and how to use personnel protective equipments while carrying out functions of Auto CAD.</p>
<p>Means of assessment 1 Questionnaire and practical observations (Annexure VI)</p>	
<p>Means of assessment 2 N/A</p>	
<p>Pass/Fail Qualified or Not qualified. Only after qualifying the certificate will be awarded.</p>	

SECTION 2**EVIDENCE OF LEVEL****OPTION A**

Title/Name of qualification/component: CAD Operator		Level: 3	
NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF level descriptors	NSQF Level
Process	Prepares a person to carry out processes that are repetitive, on a regular basis, with clear understanding of operations.	A CAD Operator - gets work (programme) allotted by his supervisor/Merchandisers and is responsible to make various types of patterns by using of AutoCAD Interface and basic Tools for pattern drafting and grading, Understanding of the various device like digitizers, plotters etc. She/he also able to understand the use of all AutoCAD tools and other equipments. Understand the basic AutoCAD functions like – Digitizing system, Pattern making Process, Grading systems, Marker making systems, Shrinkage Setting System, Plotting of Patterns Marking on patterns, use of marking tools. Understand all bodice measurement techniques, etc	3
Professional knowledge	Knowledge of Material, tools, equipments and their applications. Knowledge of process parameters/processing methods.	A CAD Operator should be able to know the process and understand the role of the Auto CAD operations for subsequent manufacturing process, various types of fabrics and sequence of operations of garment and made ups manufacturing. She/he should have knowledge of different parts and style of garments, understanding the Auto CAD operational steps and methods of pattern making by using of various tools, different pattern grading techniques as per size specification charts, marking methods and practices, make out fabric consumption, defects due to cutting operation and should know the importance of quality and productivity and importance of proper handing over	3

Title/Name of qualification/component: CAD Operator			Level: 3
NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF level descriptors	NSQF Level
		shift and taking over of charge. She/he should be able to follow the SOP and various fabric cutting and marking systems and procedures.	
Professional skill	Understanding of Identification codes followed, Line of operations and ensuring the process as per instructions. Select and apply right tools and equipments. Dos and Don'ts. Communicating with supervisory level and with their co worker. Understanding the importance of co ordination with people in the process sequence.	Operator will be able to set the Auto CAD software as per design, material and measurement received as per the instructions received from supervisor/Merchandisers on a routine basis, provides suggestions in the interest of the company, and extends voluntary support wherever required. Also identifies the cause of a problem and applies problem-solving approach to get the best suitable solution, refers defects/erratic functioning to the supervisor.	3
Core skill	Receiving & transmitting written and oral messages. Understanding of social, political religious diversity. Safety and environment.	This operator writes clear and short sentences, comprehends written instructions, communicates with the supervisor appropriately and talks to others to convey information effectively. Applies problem-solving approaches in different situations during the production and performs basic calculations required during the production process for quality and uninterrupted output. Operating the Auto CAD tools panel as per instructions. Safe handling of tools and equipments. Will be able to set the machine according to material. Ensures proper functioning of the machine. Knows personal financing and understands social, political and religious diversity, Safety, hygiene and environment	3
Responsibility	Taking /handing over charge of shift, understanding process sequence and identification system followed. Safely operating the machine and achieving production and quality	This operator takes charge of the shift after discussing in the issues faced with respect to the quality, production and safety, reports to his shift superior about issues faced in his shift and	3

Title/Name of qualification/component: CAD Operator		Level: 3	
NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF level descriptors	NSQF Level
	as instructed by superiors.	leaves the department. He works under instructions with close supervision. He contributes for safe and healthy work environment, and follows the industry & organizational compliances.	

SECTION 3

EVIDENCE OF NEED

What evidence is there that the qualification is needed?

Different course validation programs were conducted the details of which is mentioned below:

1. Validation program of Spinning and Weaving course modules developed by RSA was conducted at Coimbatore (Ref. RSA fortnightly report as on 29.05.2015 to MoT).
2. Validation program of Processing, Knitting and Apparels course modules developed by RSA was conducted at Tirupur (Ref. RSA fortnightly report as on 29.05.2015 to MoT).
3. Workshop on course content validation was held in New Delhi on 29.06.2015.
4. One day orientation program on course content and assessment on 13th August, 2015 was conducted in New Delhi.
5. Two validation programs were conducted in Ludhiana and panipat on 2nd June 2015 and 3rd June 2015 respectively.
6. Industrial consultation workshop with the stake holders, traders and industry for course content developed by RSA was organized on Saturday. 31.05.2015 at Coimbatore for validation.

Participants from Industries, Implementing Agencies and Assessment Agencies participated in the validation programs. Based on the feedback from participants suitable modifications were incorporated in the course modules and also some more modules were developed

List of industries involved in the Validation process:

- SITRA, Coimbatore
- Tasma, Bindigul
- ALPINE Knits India Pvt. Ltd.
- NIFT, Tirupur
- Nitin Textiles Pvt. Ltd., Dindigul
- Saravana Spg. Mills Pvt. Ltd. Dindigul
- Gomathi Spinning Mills, Tirupur
- Quantum Knits
- G K Consultancy
- BRT Spinners Pvt. Ltd.
- Sky Cotex India Pvt. Ltd.
- KCT, Copimbatore
- Raghav Industries limited
- Textile Technology Kumaraguru College
- NIFTTEA College, Tirupur
- CBC Tirupur
- SCM Textiles
- Sri Karthikeya Spg. Mills
- ELLITE Textiles
- Aatharva Garments
- ATDC-ERODE
- ATDC-Tirupur
- Santhosh Spg mills

- Sri Venkateshwara Spg. Mills
- Venilakshmi Mills
- Hi Tech Spg. Mills
- Sunder Textiles
- SISPA
- Bhaskar Foundation
- CMAI-Mumbai
- ALT Kanpur
- RSWM, Banswara
- RSWM, Bhilwara
- Modelama Exports
- Textile Association Delhi
- Matric Clothing Pvt. Ltd (ASDA)
- NEED
- Institute of Jute Technology, DJFT, CU
- Dhruv international pvt. Ltd.
- Shri lakshmi Cotsyn
- NTC- New Delhi
- AMH-SSC
- Laj Exports Ltd, noida
- Technopak Advisors Pvt. Ltd.
- Wazir Advisors
- Golden Trends Pvt. Ltd.
- IL&FS Clusters
- SPINFED Odisha
- Orient Craft Limited
- India Fashion
- U K International
- Shivalik Prints
- Feather Touch
- Sampada tex
- Kapoor Industries panipat
- Paliwal Industries
- Rivira Home Furnishings
- Dashmesh Jacquard and Powerloom
- Mittal Industries
- Anand International
- Harisons Overseas
- Khurana Furnishing Pvt. Ltd.
- R H F Pvt. Ltd.
- ESSKAY Enterprise
- Hometex Design
- Abhishek Textiles
- R P Overseas
- FAZE3

What is the estimated uptake of this qualification and what is the basis of this estimate?

As per the report of NSDC on Human Resource and Skill Requirement in Textile and Clothing Sector (2013-17, 2017-22) (Annexure-5): Currently, 15.23 million people are employed in the textile sub-sector across yarn and fabric, home textiles, technical textiles and readymade garments. Human resource requirement in the sector is expected to reach 21.54 million by 2022 translating into 6.31 million additional employment opportunities during the period 2013-22. Also the National Textile Policy aims to create 35 million jobs and achieve exports worth INR 18 lakh crores by 2024-25 with the help of investments. Draft proposal for the same was submitted by expert panel constituted by the government on 28th July, 2014.

What steps were taken to ensure that the qualification(s) does (do) not duplicate already existing or planned qualifications in the NSQF?

QPs for Job Roles of various related SSC's were studied to ensure that there is no duplicity for the claimed levels i.e. level 2

What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be reviewed or updated?

Version 1 of the courses has been prepared and uploaded on Textiles Committee website and next version will be prepared by September, 2018.

Please attach any documents giving further information about any of the topics above.

Give details of the document(s) here:

1. Skill gap report for textile sector_2008-2022– Annexure V

SECTION 4

EVIDENCE OF PROGRESSION

What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

Please refer to attached career path as per annexure 1 which clearly defines the career path.

Career map of CAD operator:

