

**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**

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**List of documents submitted in support of the Qualifications File:**

1. Career map of CAD Designer
2. CAD 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 programmes

## SUMMARY

<b>Qualification Title</b>	CAD
<b>Qualification Code</b>	TC MET 07
<b>Nature and purpose of the qualification</b>	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 )
<b>Body/bodies which will award the qualification</b>	Textile committee (RSA) under the Ministry of textiles
<b>Body which will accredit providers to offer courses leading to the qualification</b>	Ministry of Textiles/Office of Textile Commissioner/ Resource Support Agency (Textiles Committee)
<b>Body/bodies which will carry out assessment of learners</b>	<ul style="list-style-type: none"><li>• Andhra Pradesh Productivity Council</li><li>• Apparel Export Promotion Council</li><li>• Axis Education Society</li><li>• Base Research Consultancy services Private Limited</li><li>• C.K.Skill Research &amp; Development Ltd.</li><li>• Centre for Recruitment and Selection Pvt Ltd</li><li>• Crux Management Services Pvt Ltd</li><li>• Eduworld Consultants Pvt Ltd.</li><li>• Employable Skills Advancement Assessment and Certification LLP (ESAAC LLP)</li><li>• Fashion Futures</li><li>• Federation of Indian Chamber of Commerce and Industry (FICCI)</li><li>• Federation of Indian Women Entrepreneurs (FIWE)</li><li>• Human Potential Development Center</li><li>• Induslynk Training services Pvt. Ltd.</li><li>• Itcot Consultancy &amp; Services Ltd.</li><li>• K S Rangasamy Institute of Technology</li></ul>

- 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
- Amrit Skill Development Pvt. Ltd
- University of Calcutta

Remarks: All the above mentioned agencies are authorised to conduct assessment Textile and Clothing sector which includes the said qualification.

**Occupation(s) to which the qualification gives access**

CAD Designer

**Licensing requirements**

N/A

**Level of the qualification in the NSQF**

2

**Anticipated volume of**

Not less than 300 Hours

<b>training/learning required to complete the qualification</b>			
<b>Entry requirements and/or recommendations</b>	The candidate should be able to understand computer and having intermediate qualification.		
<b>Progression from the qualification</b>	From CAD Operator to designer and after that Modeler in a designing department		
<b>Planned arrangements for the Recognition of Prior learning (RPL)</b>	NA		
<b>International comparability where known</b>	N/A-		
<b>Date of planned review of the qualification.</b>	20/09/2018		
<b>Formal structure of the qualification</b>			
<b>Title of component and identification code.</b>	<b>Mandatory/Optional</b>	<b>Estimated size (learning hours) (learning hours)</b>	<b>Level</b>
	<b>Optional</b>		
Theoretical Knowledge to impart relevant basic technical information of CAD software and it's operations	Mandatory	135	2
Practical knowledge of the course to understand the work practises and operating the CAD software	Mandatory	135	2

Soft Skills to improve safety, behaviour, hygiene, attitude, etc.	Mandatory	30	2
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Please attach any document giving further detail about the structure of the qualification – eg a Curriculum Document or a Qualification Pack.

1. CAD 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 Mangement 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
- Amrit Skill Development 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 (Copy attached in Annexure) 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?**

NA

**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.
- 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

Learning Outcomes)			Total Weightage (in %age)
<b>1. Practical Assessment</b>	Creation of different shape as square, rectangle, circle and ellipse.	5	<b>45</b>
	Modify the shape with fillet, chamfer or mirror commands.	5	
	Drawing of the 2D blocks.	5	
	Elevation of many 2D drawings.	5	
	Creation of (LANTERN) in 3D with proper dimensions.	5	
	Creation of (SHAMADAN of five candles) in 3D solids.	5	
	Creation of (FLOWERVASE) with great rendering.	5	
	Creation of Furniture as Chair, Table, and Stool etc.	5	
	Attitude of the worker towards work and work place?	5	
	<b>Weightage %</b>		
<b>2. Theoretical Assessment</b>	Importance of (Rhinoceros) in Designing.	5	<b>55</b>
	Basic knowledge of 2D commands.	5	
	Learning of 2D drawing of the products.	5	



	Displaying the proper (Dimensions) of the product.	5	
	Editing Geometry.	5	
	Modelling with (Solids).	5	
	Learning 3D object from a 2D drawing.	5	
	Working on (LAYERS).	5	
	Working on (Coordinate System).	5	
	Understanding of Rendering the object in Rhinoceros.	5	
	Printing and Layouts of the drawing.	5	
		<b>Weightage %</b>	<b>55</b>
		<b>Grand Total</b>	<b>100</b>

**Title of Component:** CAD

Outcomes to be assessed	Assessment criteria for the outcome
<p><b>Practical Outcome:</b></p> <ul style="list-style-type: none"><li>• Creation of different shapes</li><li>• Modify the shape with fillet, chamfer or mirror commands.</li><li>• Drawing &amp; Elevation of 2D block and 2D drawing</li><li>• Creation of (Lantern, Shamadan of five candles, Flowervase) in 3D</li></ul>	<ul style="list-style-type: none"><li>• It will be observed by the assessor whether he/she is able to create different shapes</li><li>• It will be observed by the assessor whether he/she is able to modify the shape with fillet, chamfer or mirror commands</li><li>• The operator should be able for Drawing &amp; Elevation of 2D block and 2D drawing</li><li>• It will be observed by the assessor whether he/she is able to create (Lantern, Shamadan of five candles, Flowervase) in 3D</li></ul>
<p><b>Theoretical Outcome:</b></p> <ul style="list-style-type: none"><li>• Importance and knowledge of 2D commands.</li><li>• Displaying the proper (Dimensions) of product and geometry editing.</li><li>• Modelling with (Solids).</li><li>• Working on Layers and Coordinate System</li><li>• Understanding of Rendering</li><li>• Printing and Layouts of the drawing.</li></ul>	<ul style="list-style-type: none"><li>• Based upon the assessment sheet the assessor will ask him/her about Importance and knowledge of 2D commands</li><li>• Based upon the assessment sheet the assessor will ask him/her for geometry editing.</li><li>• Randomly the assessor will ask functions of different parts of the machine.</li><li>• The assessor will ask him/her how to Work on Layers and Coordinate System</li><li>• Questions regarding Rendering.</li><li>• Questions regarding Printing and Layouts of the drawing.</li></ul> <p>Different questions regarding safety precautions, use of first aid etc. will be asked by the assessor.</p>
<p><b>Means of assessment 1</b> Questionnaire and practical observation (Annexure-VI)</p>	
<p><b>Means of assessment 2</b> N/A</p>	

**Pass/Fail**

Qualified or Not qualified. Only after qualifying the certificate will be awarded.

**SECTION 2**  
**EVIDENCE OF LEVEL**

**OPTION A**

Title/Name of qualification/component: CAD Level: 2			
NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF level descriptors	NSQF Level
Process	A CAD Operator- is allotted system with CAD software by his supervisor and is responsible for carrying out activities related to the designing like Creation of different shapes, Creation of (Lantern, Shamadan of five candles, Flowervase) in 3D, Drawing & Elevation of 2D block and 2D drawing etc.,. The operator should be able to Work on Layers and Coordinate System of CAD.	The processes like Creation of different shapes, Creation of (Lantern, Shamadan of five candles, Flowervase) in 3D, Drawing & Elevation of 2D block and 2D drawing etc. are repetitive and this is done on a regular basis with a little of application of understanding like one type of design should not be mixed with other type of design. Understanding of Rendering, Printing and Layouts of the drawing etc. require practice so as to work efficiently.	2
Professional knowledge	A CAD Operator knows the process as mentioned above and Understanding of Rendering, Printing and Layouts of the drawing. Knowledge of various, defects in designing. Understanding of importance of 2D & 3D. Able to follow the SOP and safety standards, etc. maintained by the company.	Use of 2D and 3D designing tools .The operator understands context of work and quality like if there is not a proper quality in design it will affect the quality in production.	2
Professional skill	The operator takes charge of designing and operates the designing software and or draw design on routine basis as per requirements and instructions from supervisor.	Limited service skills used in limited context like operating the 2D and 3D etc. assist in professional works with no variables; differentiates good and bad quality product design.	2
Core skill	This operator writes clear and short sentences, comprehends written instructions, communicates with the supervisor appropriately and talks to others to convey information effectively.	Receive and transmit written and oral messages like the CAD operator received written instruction from the supervisor and transmit them to the helper as required. The operator knows basic calculations like addition, subtraction and formulas of area and volume etc.	2

Title/Name of qualification/component: CAD Level: 2			
NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF level descriptors	NSQF Level
Responsibility	This operator takes charge of designing after discussing in the issues faced with respect to the quality, product designing and safety and reports to the supervisor about designing issues faced and leaves the department. He /She works under instructions with close supervision. He / She contribute for safe & healthy work environment and follows the industry & organizational compliances.	As the worker leave the premises after discussing the issues faced during the designing, no responsibility lies on the operator. The supervisor takes up the matter and resolves the problem, if any. The operator works under instruction and close supervision.	2

## **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 CAD, Electroplating & Effluent Treatment, Quality control, Engraving, Powder Coating, packaging, lacquering & paint, welding and soldering course modules developed by MHSC was conducted at Moradabad on 01/09/2016.
2. Validation program of CAD, Electroplating & Effluent Treatment, Quality control, Engraving, Powder Coating, packaging, lacquering & paint, welding and soldering course modules by MHSC was conducted at Moradabad on 02/09/2016.
3. Industrial consultation workshop with the stake holders, traders and industry for course content developed by MHSC was organized on 02/09/2016 at Moradabad for validation.

Participants from Industry, Stake holders, Industry association etc participated in the validation programs. Based on the feedback from participants suitable modifications in the course module were incorporated and also some more modules were developed.

#### **List of industries involved in the Validation process:**

- Indian Industries association
- Moradabad Handicrafts Exporters Association
- Indian handicrafts
- Zainab Handicrafts
- Moradabad Brass Karkhenedar association
- Handicraft Development Society
- Mahila hastshilp prasiksan sansthan

#### **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. There is no similar qualification at 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. Feedback for the courses will be collected 6 months prior to the revision and format for the said purpose will be prepared and uploaded to TC website for receiving the comments from the stake holder for any change, if required, in the said course. Further, the feedback form will be sent to all the Implementing Agencies under MoT for their necessary comments before taking the exercise of revision of version-1. After receiving feedback and compiling the same the necessary amendments, if required, will be made and all the course will be revised by the team of experts in the domain field.

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 I which clearly defines the career path.

**Career map of CAD operator:**

By acquiring this qualification the operator will be able for designing in 2D and 3D of required product. After giving some extra training the operator will be able to operate other designing software like Catia, solid works, pro-e etc.

