

PRODUCE WOVEN FABRIC (WEAVING)

UNIT CODE: ENG/OS/TEX/CR/03/6/A

Unit description

This unit describes the competencies required by a textile technician to produce woven fabric. It involves competencies required to produce warp beam, sized beam, and drawn beams, set up weaving machine, operate weaving machines, control production and quality parameters

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace function	These are assessable statements which specify the required level of performance for each of the elements <i>(Bold and italicized terms are elaborated in the Range)</i>
1. Produce warp beam	1.1 Safety precautions are observed according to occupational health and safety standards (OSHA) 1.2 Warping pattern is obtained and interpreted according to design specifications. 2.1 Yarn packages are obtained according to design specifications. 2.2 Yarn packages are loaded to creel according to product specifications 2.3 Warping machines are set according to machine specifications 2.4 Suitable beam is loaded on warping machine according to product specifications. 2.5 Yarns are withdrawn from warp creel onto empty beam/warping drum according to product specifications. 2.6 Warping machine is operated according to SOP. 2.7 Production is monitored continuously according to operational instructions 2.8 Warping faults are identified and corrected according to SOP 2.9 Warped beam is doffed off and stored according to operational instructions. 2.10 Warping operations are documented according to organizational procedures. 2.11 Resources requirements are allocated according to work load
2. Produce sized beam	2.1 Safety precautions are observed according to occupational health and safety standards (OSHA)

	<p>2.2 Warp beams are obtained from warping section according to organizational procedures</p> <p>2.3 <i>Size recipe</i> are obtained according to product specifications</p> <p>2.4 Size liquor is prepared according to job specifications.</p> <p>2.5 Sizing machines are set according to product specifications.</p> <p>2.6 Warpers beams are loaded onto the sizing machine according to operational instructions</p> <p>2.7 Weavers beam is loaded onto the sizing machine according to operational instructions.</p> <p>2.8 Sizing Machine is operated according to operational procedures</p> <p>2.9 Sizing process is monitored according to workplace procedures</p> <p>2.10 <i>Sizing</i> process <i>defects</i> are identified and rectified according to SOP</p> <p>2.11 Sized beams are doffed according to operational procedures.</p> <p>2.12 Sizing waste is disposed off according to organizational procedures.</p> <p>2.13 Sizing operations are documented according to organizational procedures.</p> <p>2.14 Resources requirements are allocated according to work load</p>
<p>3. Produce drawn beams</p>	<p>3.1 Safety precautions are observed according to occupational health and safety standards (OSHA)</p> <p>3.2 Drawing and denting pattern is obtained and interpreted according to product design.</p> <p>3.3 Weavers beam is obtained according to product design</p> <p>3.4 <i>Heald frames are prepared</i> according to product design</p> <p>3.5 Reed is prepared according to pattern design</p> <p>3.6 Warp is drawn and dented according to denting and lifting plan.</p> <p>3.7 Drawn Weavers beam is stored according to organizational procedures.</p> <p>3.8 Warping process is documented according to organizational procedures.</p>

<p>4. Set up weaving machine</p>	<p>4.1 Safety precautions are observed according to occupational health and safety standards (OSHA)</p> <p>4.2 Weaving machine is identified for new product according to organizational procedure</p> <p>4.3 Weaving machine is prepared according to organization procedure</p> <p>4.4 Weavers beam is obtained according to product specifications.</p> <p>4.5 Weavers beam is mounted onto loom according to manufacturer’s manual and product design.</p> <p>4.6 Loom is set according to product design.</p>
<p>5. Operate weaving machines</p>	<p>5.1 Machine safety and operation procedures are observed according to manufacturer manuals and OSHA</p> <p>5.2 Loom is operated to produce to fabric according to operational procedures.</p> <p>5.3 Weaving process is monitored according to SOP.</p> <p>5.4 Weaving and mechanical faults are identified and rectified where possible according to SOP</p> <p>5.5 Major faults are reported according to SOP</p> <p>5.6 Grey Fabric rolls are doffed according to SOP.</p> <p>5.7 Grey fabric rolls are stored according to organizational procedures.</p> <p>5.8 Weaving operations are documented according to organizational procedures</p>
<p>6. Control weaving production and quality parameters</p>	<p>6.1 Safety precautions are observed according to occupational health and safety standards (OSHA)</p> <p>6.2 Resources requirements are allocated according to work load</p> <p>6.3 Quality parameters are controlled according to product specifications.</p> <p>6.4 Product in process is inspected according to quality requirement</p> <p>6.5 Production process is controlled according to production requirement</p> <p>6.6 Efficient production requirements are identified according to work plan.</p> <p>6.7 Process non-conformance is identified and documented according to workplace requirements</p>

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variable	Range
1. Warping machines are set may include but is not limited to:	<ul style="list-style-type: none">• Warp length• Beam width• Warp pattern
2. Warping machine may include but is not limited to:	<ul style="list-style-type: none">• Sectional• Direct
3. Warping faults may include but is not limited to:	<ul style="list-style-type: none">• Broken ends• Crossed ends
4. Size recipe may include but is not limited to:	<ul style="list-style-type: none">• Ingredients• Cooking temperature• Cooking time• Mixing method
5. Sizing process defects may include but is not limited to:	<ul style="list-style-type: none">• Improper splitting• Under drying of sized warp• Over drying of sized warp• Lapping ends• Migrating ends• Non-uniform beam density
6. Heald frames are prepared may include but is not limited to:	<ul style="list-style-type: none">• Number of heald frames• Number of heald wires per frame• Type of frame
7. Weaving machine may include but is not limited to:	<ul style="list-style-type: none">• Projectile• Shuttle• Rappier• Air jet• Water jet
8. Loom is set may include but is not limited to:	<ul style="list-style-type: none">• Knotting• Lifting pattern• Weft pattern

Variable	Range
9. Quality parameters may include but is not limited to:	<ul style="list-style-type: none"> • Weaving pattern • Fabric dimensions • Stains • Marks • Foreign material
10. Weaving and mechanical faults may include but is not limited to:	<ul style="list-style-type: none"> • Missing ends • Starting marks • Shuttle Smash • Irregular salvages • Tight picks • Slack ends • Wrong yarns • Oil stains

REQUIRED SKILLS

The individual needs to demonstrate skills in:

- Weaving machine operation
- Size preparation
- Warping
- Drawing in
- Beam gaiting
- Beam knotting
- Weaving defects mending
- Interpreting and following information on written job instructions, standard operating procedures, lists, reports and other applicable reference documents
- Checking and clarifying information
- Planning and sequencing tasks
- Identifying non-compliances
- Checking for conformance to specifications
- Communication skills
- Problem solving
- Creativity and innovation
- Data collection and analysis
- Use of tools and equipment
- Technical presentation

REQUIRED KNOWLEDGE

The individual needs to demonstrate knowledge of:

- Properties of textile raw materials
- Weaving patterns
- Weaving machines
- Weaving machines operating principles
- Sizing process
- Warping process
- Drawing and denting techniques
- Sizing ingredients
- Quality control parameters
- Identification of woven fabric defects and faults
- Use and application of personal protective equipment
- housekeeping
- Safety practices and procedures
- Use of tools and equipment
- Material handling
- Problem solving
- Documentation
- Testing and inspection
- Procedure for safe disposal of waste materials

EVIDENCE GUIDE

This provides advice on assessment and must be in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical Aspects of Competency.	Assessment requires evidence that the learner 1.1 Performed yarn warping 1.2 Performed yarn sizing operations 1.3 Designed weaving pattern 1.4 Performed yarn drawing-in and denting operations 1.5 Performed looming operations 1.6 Operated weaving machines 1.7 Controlled production and quality parameters
2. Resource Implications.	The following resources should be provided: 2.1 Winding machines 2.2 Warping machines 2.3 Sizing machines 2.4 Loom

	<p>2.5 Weaving patterns</p> <p>2.6 Sizing materials</p>
3. Methods of Assessment.	<p><i>Competency may be assessed through:</i></p> <p>3.1 Practical</p> <p>3.2 Observation</p> <p>3.3 Questionnaire</p> <p>3.4 Case studies</p> <p>3.5 Written examinations</p> <p>3.6 Oral presentation</p>
4. Context of Assessment.	<p>Competency may be assessed:</p> <p>4.1 On-the-job</p> <p>4.2 Off-the –job</p> <p>4.3 During Industrial attachment</p>
5. Guidance information for assessment.	<p>This unit may be assessed on an integrated basis with others within this occupational sector.</p>

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