



Australian Government

Department of Education, Employment and Workplace Relations

ICPSP333C Automatically prepare direct emulsion stencil

Revision Number: 1

ICPSP333C Automatically prepare direct emulsion stencil

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to prepare direct emulsion stencils using automatic coating equipment.
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Application of the Unit

Application of the unit	This unit requires the individual to prepare direct emulsion stencils using automatic coating equipment.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

<p>Elements describe the essential outcomes of a unit of competency.</p>	<p>Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.</p>
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare the work area and equipment	1.1. Work area is made clean and functional prior to the commencement of work 1.2. All equipment is inspected to ensure it is functional and where necessary, appropriate remedial action is taken prior to the commencement of work 1.3. Appropriate <i>coating</i> troughs for automatic coaters are selected ensuring they are free of nicks and burrs 1.4. Automatic coating equipment is inspected and routine user maintenance is carried out according to manufacturer's instructions and <i>enterprise procedures</i> 1.5. Automatic coating equipment is adjusted to suit screen frame and mesh and emulsion
2. Prepare the screen	2.1. Screen is selected according to job specifications 2.2. Chemicals are applied and removed according to OHS requirements and manufacturer's/supplier's specifications 2.3. Tension of screen mesh is checked for suitability according to job specifications
3. Select emulsion	3.1. Emulsion is selected according to requirements for ink type, print resolution, substrate, mesh type and <i>machine type</i> 3.2. Emulsion is checked for expiry date and appropriate action taken 3.3. Emulsion is prepared according to OHS requirements, and manufacturer's/supplier's specifications 3.4. Emulsion is used and dried according to manufacturer's/supplier's specifications
4. Process coated screen	4.1. Coated screen frame is placed in vacuum frame and adequately vacuumed with positive positioned according to manufacturer's/supplier's specifications 4.2. Light source is positioned according to manufacturer's/supplier's specifications 4.3. Exposure is calculated and <i>stencil</i> exposed according to manufacturer's/supplier's specifications 4.4. Exposed screen is removed from vacuum frame 4.5. Exposed screen is washed out after positive removal according to OHS requirements and manufacturer's/supplier's specifications

ELEMENT	PERFORMANCE CRITERIA
	4.6.Processed stencil/screen is inspected for flaws
5. Store screen	5.1.Prepared screen is labelled according to enterprise specifications 5.2.Prepared screen is stored in a clean, dry environment according to manufacturer's/supplier's specifications

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- OHS in relation to operating machinery such as safely switching off machinery before cleaning is started
- communication of ideas and information by correctly labelling prepared stencils
- collecting, analysing and organising information by selecting the correct emulsion according to job specifications
- planning and organising activities by ensuring functionality of equipment prior to starting work
- teamwork when maintaining the production process in association with others
- mathematical ideas and techniques by calculating required exposure time for emulsion
- problem-solving skills by inspecting automatic coating machine and conducting maintenance
- use of technology by using automatic coating machines

Required knowledge

- the influence that the mesh count has on final printed product
- the need to have the correct tension on the screen
- the screen tension that is required on screens of various mesh counts and grades
- degreasing/cleaning techniques that are employed prior to coating the screen
- information that is contained in MSDSs for the emulsion being used
- the OHS requirements for exposure to UV light sources
- pollution and environmental issues that need to be considered when working with emulsions
- maintenance that is required for the automatic coating machine
- TWO emulsions used in screen printing and describe their characteristics, their shelf life and areas of use
- the storage requirements for the emulsion you are using
- the preparation formula for the emulsion you are using
- the need to have the correct illumination in the work area
- the influence that the length of run and ink or dye being used have on the coating technique
- the number of coats of emulsion and the best method of coating the screen
- factors that are taken into consideration in determining the angle at which the coaters coat the screen
- the appropriate position (horizontal or vertical) for drying the screen
- the effect that each of these positions has on the way the emulsion dries
- the effect of heat on the emulsion during the drying process

REQUIRED SKILLS AND KNOWLEDGE

- the function and use of a light integrator
- the procedure for exposing the stencil
- the effect that the position, angle and distance of the light source have on the exposure process
- the need to have perfect contact between positive and screen during exposure
- the effect that temperature, pressure and time taken have on the washing out process
- wash-out completion
- the ideal position of the screen for drying to prevent scum and streaking
- the impact of post-curing on the stencil
- information that you have obtained from the MSDS for this particular blackout
- the bearing of ink to be used and the type of stencil on the type of blackout
- preventive measures that can be taken to minimise pinholes
- the need to tape the edge of the frame and the squeegee edge
- the means used to identify the screen at a later date
- manuals, safety and other documentation that are relevant to this task and where they are kept
- information that is included in these documents
- other sources of information that are available

Evidence Guide

EVIDENCE GUIDE	
<p>The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p>	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>Evidence of the following is essential:</p> <ul style="list-style-type: none"> • correctly prepare direct emulsion stencils using automatic coating equipment according to job specifications • demonstrate an ability to find and use information relevant to the task from a variety of information sources • prepare TWO different direct screens using automatic coating equipment, and expose, wash and dry the screen according to manufacturer's and job specifications, enterprise procedures and the listed Performance Criteria.
Context of and specific resources for assessment	<p>Assessment must ensure:</p> <ul style="list-style-type: none"> • assessment may take place on the job, off the job or a combination of both of these. Off the job assessment must be undertaken in a closely replicated workplace environment.
Method of assessment	<p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate.
Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended</p>

Range Statement

RANGE STATEMENT	
<p>The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.</p>	
<i>Coating techniques</i> may include:	<ul style="list-style-type: none"> appropriate automatic coating techniques for various emulsions, mesh types and definition requirements.
<i>Enterprise procedures</i> may include:	<ul style="list-style-type: none"> tasks must be performed according to enterprise procedures.
<i>Types of machines</i> may include:	<ul style="list-style-type: none"> automatic coating equipment commonly used in the screen printing sector.
<i>Type of stencil materials</i> may include:	<ul style="list-style-type: none"> direct stencil materials commonly used relative to the industry sector.
<i>Degree of autonomy</i> may include:	<ul style="list-style-type: none"> work is performed under supervision to defined procedures to ensure production requirements are met.
<i>Quality standards</i> may include:	<ul style="list-style-type: none"> should meet client requirements and enterprise and industry standards.

Unit Sector(s)

Unit sector	
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Competency field

Competency field	Screen Printing
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Co-requisite units

Co-requisite units		