

CS70 3D Printing / Prototyping Operator

Disclaimer

These Occupational Frameworks and Skill Profiles have been developed as workforce planning, occupational mapping and skills reference resources for the Australian textile, clothing and footwear (TCF) industry. They are intended to describe the typical functions, responsibilities, skills and capabilities associated with occupations across the industry.

These documents are not intended to replace or override industrial instruments or employment arrangements, including awards, enterprise agreements, employment contracts, position descriptions, classification structures, licensing or regulatory requirements, or other statutory obligations. Where differences arise, the relevant industrial, legislative or regulatory requirements take precedence. The Skill Profiles should be used as complementary reference documents to support workforce planning, career development, training and skills recognition.

1. Job role

TCF sub-sector	Cross-sector
Job role	CS70 3D Printing / Prototyping Operator
Job role description	Operates 3D printing and rapid prototyping systems to produce components, samples and product prototypes for TCF applications. The role supports product development by translating digital designs into physical prototypes, enabling testing, fit validation and design iteration. It works closely with design, pattern making and engineering functions to support innovation, customisation and reduced development timelines.
Performance expectations	- Producing accurate prototypes aligned with design specifications. - Operating 3D printing and prototyping equipment safely and efficiently. - Maintaining quality and precision in printed components. - Supporting rapid product development and iteration. - Minimising material waste and production errors. - Preparing and managing digital files for printing. - Maintaining equipment and reporting faults. - Meeting development timelines. - Collaborating with design and technical teams. - Following workplace safety and operational procedures.
Specialisation	Additive manufacturing, rapid prototyping, 3D modelling integration, materials testing, digital fabrication.
Application in other TCF sectors	- Footwear production supporting prototyping of components and soles. - Apparel production supporting accessories and structural components. - Leather goods production supporting hardware and component prototyping. - Textile manufacturing supporting technical components and testing.

	• Technical textiles supporting advanced product development. • Design studios supporting rapid prototyping workflows. • Manufacturing industries supporting additive manufacturing.
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2. Key tasks and critical work functions

Key tasks	• Preparing digital files for 3D printing. • Setting up and operating 3D printers. • Selecting materials and printing parameters. • Monitoring printing processes. • Post-processing printed components. • Inspecting prototypes for accuracy and quality. • Maintaining equipment and materials. • Supporting design and development teams.
Critical work functions	• Ensuring accuracy and precision of prototypes. • Maintaining quality and consistency of printed outputs. • Supporting rapid design iteration. • Minimising material waste and print failures. • Maintaining equipment performance. • Ensuring compatibility between digital models and physical outputs. • Supporting innovation and product development.

3. Technical skills

3D printing systems	Operating additive manufacturing equipment.
Digital file preparation	Preparing Computer-Aided Design (CAD) files for printing.
Material selection	Selecting appropriate materials for prototypes.
Post-processing	Finishing and refining printed components.
Equipment maintenance	Maintaining and troubleshooting printers.
Quality inspection	Checking accuracy and finish of prototypes.
CAD integration	Working with design and modelling systems.

4. Generic Skills

Attention to detail	Ensuring precision in prototypes.
Problem solving	Resolving printing and design issues.
Technical aptitude	Working with advanced manufacturing systems.
Communication	Collaborating with design and engineering teams.
Time management	Meeting development timelines.
Adaptability	Working with evolving technologies.

5. Emerging skills

Emerging skills	• Using advanced additive manufacturing technologies.
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	- Integrating 3D printing with digital product development workflows. - Supporting mass customisation and personalised production. - Using new materials including bio-based and sustainable materials. - Integrating with digital twin and simulation systems. - Applying automation in additive manufacturing processes.
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6. VET Qualifications and Skill Sets

Entry-level preparation	ICPSS00002 3D Print Fundamentals Skill Set or equivalent.
Advanced development	MST40122 Certificate IV in Textile Design and Technology or equivalent.

7. Job progression

Possible job progression	Production Assistant → 3D Printing Operator → Senior Prototyping Technician → Product Development Specialist → Technical Manager.
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8. Classification

Australian Qualifications Framework	AQF Level 3-6.
Australian Bureau of Statistics (ABS) Skill Levels	Skill Level 3.
Open Source Classification of Occupations for Australia (OSCA)	399434 - Garment Technician.



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