

SSFOT12 Material Technologist

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	Footwear Production
Functional area	Materials Technology
Job role	SSFOT12 Material Technologist
Job role description	Evaluates, selects and tests materials used in footwear production including leathers, synthetics, textiles, adhesives and components. Ensures materials meet performance, quality, durability, sustainability and compliance standards in alignment with product specifications.
Performance expectations	- Ensure materials meet technical and performance specifications. - Validate durability, safety and compliance standards. - Support innovation in material selection. - Minimise material-related defects in production. - Contribute to sustainability and waste reduction goals. - Provide technical advice to design and production teams.
Specialisation	- Leather and upper material performance testing. - Adhesive and bonding technologies. - Sustainable and alternative material development.
Application in other TCF sectors	Transferable to leather goods, apparel textiles and advanced material development roles.

2. Key tasks and critical work functions

Key tasks	- Test and evaluate material strength and durability. - Assess material suitability for specific footwear applications. - Monitor supplier quality and compliance documentation. - Conduct wear and environmental performance testing. - Collaborate with designers and technical developers. - Recommend material substitutions or improvements. - Maintain material testing records and compliance documentation.
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Critical work functions	• Ensuring material compatibility with construction methods. • Maintaining compliance with safety and regulatory standards. • Supporting product performance and longevity. • Identifying risks in material performance. • Promoting sustainable material choices. • Reducing material-related production defects. • Providing technical data for product documentation.
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3. Technical skills

Material testing methods	Conduct tensile, abrasion and flexibility testing.
Leather and textile knowledge	Understand properties of natural and synthetic materials.
Adhesive performance evaluation	Assess bonding strength and compatibility.
Compliance standards knowledge	Apply relevant Australian and international standards.
Sustainability assessment*	Evaluate environmental impact of materials.
Supplier quality evaluation	Review certifications and quality documentation.
Laboratory equipment operation	Operate testing equipment accurately.
Technical reporting	Prepare detailed material performance reports.

*Technical skills identified as emerging skills in TCF industry.

4. Generic Skills

Analytical thinking	Interpret test results and performance data.
Attention to detail	Ensure accuracy in testing and reporting.
Communication	Explain technical findings clearly.
Problem solving	Identify solutions to material performance issues.
Collaboration	Work with design and production teams.
Initiative	Research new materials and innovations.

5. Emerging skills

Emerging skills	• Bio-based and recycled material technologies. • Advanced performance textiles. • Digital material databases and product lifecycle management (PLM) systems. • Circular economy assessment methods. • Low-impact adhesive technologies. • Life cycle analysis and carbon footprint evaluation.
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6. VET Qualifications and Skill Sets

Entry-level preparation	MSL50122 Diploma of Laboratory Technology or equivalent in Materials Technology, Manufacturing or related field.
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Advanced development	MSL60118 Advanced Diploma of Laboratory Operations or Bachelor studies in Materials Science, Textile Technology or related field (enterprise dependent).
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7. Job progression

Possible job progression	Possible job progression: Material Technologist → Senior Material Technologist → Technical Manager → Product Development Manager.
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8. Classification

Australian Qualifications Framework	AQF Level 5-7.
Australian Bureau of Statistics (ABS) Skill Levels	Skill Level .
Open Source Classification of Occupations for Australia (OSCA)	313999 Engineering Technicians nec.



Skills Insight is a Jobs and Skills Council funded by the Australian Government Department of Employment and Workplace Relations.