

## Demonstrate knowledge of industrial machine knitting

**Level** 3

**Credits** 6

**Purpose** This unit standard is for personnel in any of the sectors of the knitting industry and for personnel in other industries and occupations that have an involvement, in some form, with the technology of the textile industry and the production of the knitting industry.

People credited with this unit standard are able to: describe the formations of knitted constructions; describe the range of processes and machines by which knitted fabrics and goods are made; and describe the properties and characteristics of knitted fabrics.

**Subfield** Industrial Machine Knitting

**Domain** Knitting Industry Technology

**Status** Registered

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**Entry information** Open.

**Accreditation** Evaluation of documentation and visit by NZQA and industry.

**Standard setting body (SSB)** Competenz

**Accreditation and Moderation Action Plan (AMAP) reference** 0030

This AMAP can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

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### Special notes

- 1 This unit standard relates to the processes of machine-knitting, the different systems by which knitted goods are made, and the characteristics and properties of those knitted goods.

- 2 Technical aspects that are required to be covered in demonstrating competence in this unit standard include:
- a knitting as a converter of yarns into fabrics and shaped articles;
  - b the nature of knitted stitches, the way they are formed, and the two fundamental ways in which they can be drawn;
  - c the basic forms of machine-knitting – weft knitting (developing out of the mechanisation of hand knitting), and warp knitting;
  - d the use of needles as the medium of knitted stitch-formation;
  - e the types of needles used, and the knitting actions of each;
  - f the basic fabric constructions of knitting – plain, rib, and purl;
  - g the arrangements of needles and the configurations of machines according to the types of constructions they will produce – plain, rib, purl, double-faced fabrics;
  - h machine-gauge and machine-size;
  - i the sectors of the knitting industry according to machine-type:
    - i Warp knitting – tricot, Raschel;
    - ii Weft knitting – half-hose, full-length hosiery, circular piecegoods, full-fashioned, flat bed, circular garment-length;
  - j the characteristics and properties of knitted constructions;
  - k the range of products of each sector;
  - l the relationships of raw materials to the end-uses of the products of the knitting industry.

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## Elements and performance criteria

### Element 1

Describe the formations of knitted constructions.

### Performance criteria

- 1.1 Fundamental stitch units are described in terms of the directions in which they are drawn in the production of knitted fabrics.
- Range stitches drawn towards the front (plain stitches), stitches drawn towards the back (rib stitches or purl stitches).
- 1.2 The combinations of fundamental stitch units by means of which the basic structures of knitting are formed are described.
- Range plain fabric, rib fabric, purl fabric.
- 1.3 The formations of stitches are described in terms of weft knitting and warp knitting.
- 1.4 Weft knitted patterns in colours and stitch structures are described in terms of the formations.
- Range Fair Isle, jacquard patterns, purl structures, tuck patterns, miss-knit patterns.

- 1.5 Weft knitted constructions produced by means of modifications of stitches are described in terms of the formations.
- Range plush (or terry), plating, pelerine (or eyelet), cables, Aran-types of patterns, laces, stitch transfer.
- 1.6 Warp knitted constructions and patterns are described in terms of formations.
- Range tricot constructions, Raschel constructions.
- 1.7 Double-faced knitted fabrics are described in terms of the formations.
- Range interlock, Simplex, two needle-bar Raschel fabric, rib fabrics.

## Element 2

Describe the range of processes and machines by which knitted fabrics and goods are made.

### Performance criteria

- 2.1 The machine configurations to make selvedged and tubular forms of knitted fabrics are described.
- 2.2 The different types of machines are described in terms of their knitting actions.
- Range warp knitting machines, single cylinder machines, rib and interlock machines, double cylinder machines, full-fashioned machines, flat bed machines.
- 2.3 Machine-gauge, stitch size, and structure of knitted fabrics are described in terms of their relationships.
- 2.4 The relationship of machine-size to the finished knitted products is described.
- Range small-diameter and large-diameter circular machines, machine-diameters related to body widths, flat bed and straight bar machines.
- 2.5 Machine-types are described in terms of the forms of knitting they are designed to produce.
- Range piecegoods fabrics, garment panels and articles with sequenced changes of structures and/or qualities.

- 2.6 Garment knitting machines are described in terms of changes in structures made during the production cycle and the systems fitted by means of which changes are made.
- Range selvedge shaping (fashioning) on full-fashioned machines, quality changes (graduated stiffening) on full-length hosiery machines, structure and quality changes on half-hose, flat bed and circular garment-length machines.

### Element 3

Describe the properties and characteristics of knitted fabrics.

#### Performance criteria

- 3.1 Knitted constructions are described in terms of their inherent properties.
- Range elasticity, dimensional elasticity, increased dimensional stability in interlock and double jersey fabrics, warmth, porosity, ornamentation (patterning).
- 3.2 Knitted constructions are described in terms of their inherent characteristics and appearance according to the type of knitted fabric.
- Range plain fabric, rib fabrics, purl (horizontal rib) fabrics, interlock and double jersey fabrics.
- 3.3 Knitted fabrics and garments are described in terms of their fitness for purpose for a range of end-uses.
- Range socks, legwear, underwear, outerwear, berets, fleecy fabric, outerwear jersey fabrics, lingerie fabrics, curtainings.

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#### Please note

Providers must be accredited by NZQA, or an inter-institutional body with delegated authority for quality assurance, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be accredited by NZQA before they can register credits from assessment against unit standards.

Accredited providers and Industry Training Organisations assessing against unit standards must engage with the moderation system that applies to those standards.

Accreditation requirements and an outline of the moderation system that applies to this standard are outlined in the Accreditation and Moderation Action Plan (AMAP). The AMAP also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

### **Comments on this unit standard**

Please contact [Competenz info@competenz.org.nz](mailto:Competenz info@competenz.org.nz) if you wish to suggest changes to the content of this unit standard.