



TECHNOLOGY STATION: CLOTHING AND TEXTILES



AN INITIATIVE OF THE



science, technology
& innovation

Department:
Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA





Provide support to
the Clothing and Textile industry
to improve innovation and
competitiveness.

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Every effort has been made to ensure the accuracy of the information in this booklet; however the University reserves the right at any time, if circumstances require making changes to any of the published details.

1 Introduction

The Technology Station: Clothing and Textiles (TSCT) is located in the Faculty of Engineering and the Built Environment at Cape Peninsula University of Technology, Bellville Campus. The TSCT was established to provide innovation support to the clothing and textile sector to improve competitiveness. This would directly provide feedback into the teaching, learning and research at the University of Technology (UoT) by engaging staff and students in its programmes and thus UoTs become responsive to industry needs. The main sponsor of the TSCT is the Technology Innovation Agency. (www.tia.org.za)

In 2004 with support from GTZ (German Agency for Technical Cooperation) the TSCT undertook an analysis of the Clothing and Textiles value chain using a methodology known as RALIS (Rapid Appraisal of Local Innovation Systems). This was done to understand the issues that hamper the industries competitiveness. Ten key proposals were established which the TSCT used as a guideline to determine its strategic focus.

The following range of specific services is provided to the clothing, textiles and related sectors:

- Manufacturing Advisory Services
- Technology Support Centre
- Product Testing and Analysis
- Human Capital Development
- Product Development
- Smart Organisation
- Research

2 Manufacturing Advisory Services

The Technology Station in Clothing and Textiles is located in the Faculty of Engineering at Cape Peninsula University of Technology, Bellville Campus.

- 2.1 Manufacturing audits and assessment
- 2.2 Provide Industrial Engineering services for productivity improvement, including process layout, optimizing sewing methods and work-study.
- 2.3 Implementation of improved production systems
- 2.4 Implementation of Quality Systems.
- 2.5 Advice on acquisition of new or improved technology.
- 2.6 Advice on maintenance and setting of equipment.
- 2.7 Engineering solutions for productivity improvement

It is recommended that the process be initiated by us conducting an audit of the situation.

A project proposal will be submitted to you as the client recommending details of the intervention required.

3 Technology Support Centre

3.1 PROTOTYPING AND MANUFACTURING CENTRE

The Technology Station: Clothing and Textiles has a number of specialised technologies available at its Bellville office for:

- Research
- Technology Demonstration
- Prototype Development
- Small scale manufacturing

Small businesses can use the technology on an appointment basis and staff at the TSCT will also provide advice on the application and use of these machines. Charges are levied for the usage of the equipment but is largely subsidised.

Currently available are:

- Electronic button-hole machine
- Electronic button-sew on machine
- Electronic bar-tacking machine
- Electronic eyelet button-hole machine
- Cover seam machine
- Cover seam machine elasticating
- Merrow edge machine
- Hemming machine
- Embroidery machine and digitiser(for samples)
- Walking foot machine
- Ultrasonic Welding machine
- Jet pocket machine
- Feed off the arm machine



4 Product Testing and Analysis

The laboratory provides product testing and analysis service to the clothing, textiles and related industries.

CLOTHING AND TEXTILE RELATED CONSULTING SERVICES

- Provide advice on material usage and care.
- Fabric specification development

THE TESTING
LABORATORY IS
WOOLWORTHS
ACCREDITED



4.1 TESTING SERVICES AVAILABLE

- ✓ Colourfastness to washing
- ✓ Colourfastness to sea water
- ✓ Colourfastness to chlorinated water
- ✓ Colour fastness to hydrolysis
- ✓ Colour fastness for contrast trimmed items
- ✓ Colour fastness to perspiration
- ✓ Colour fastness to water
- ✓ Rub Fastness
- ✓ Garment durability wash
- ✓ Fabric dimensional stability to washing (Wascator)
- ✓ + Bowing/spirality measurement
- ✓ Abrasion resistance
- ✓ Pilling
- ✓ Snagging
- ✓ Solid Content
- ✓ Tensile strength
- ✓ Tear strength
- ✓ Seam Slippage
- ✓ Stretch and recovery tests on elastomeric materials
- ✓ Print Durability
- ✓ Burst strength knits
- ✓ Fabric mass per square metre
- ✓ Ph Test liquids and compounds
- ✓ Ph material
- ✓ Yarn count
- ✓ Yarn twist
- ✓ Yarn shrinkage/crimp
- ✓ Spray rating
- ✓ Water resistance
- ✓ Accelerated heat ageing of textiles
- ✓ Wicking
- ✓ Fibre identification
 - Microscopic
 - Solubility
- ✓ Light fastness and weathering tests
 - Grade 4(and lower)
 - Grade 5
 - Grade 6
- ✓ Fault Analysis /Care Label instruction
- ✓ Fabric analysis
- ✓ Trials / Problem Analysis

4.2 AVAILABLE TECHNOLOGY

- Pilling and snagging tester
- Impulse random tumble pilling tester
- Burst strength tester
- Xenon Arc light and weather fastness tester
- Wascator (high specification washing machine)
- Digital microscope and camera + software
- Tensile Tester + Stretch and recovery attachment
- Martindale Abrasion and Pilling Tester X2
- Yarn wrap reel (WIRA)
- Twist tester (WIRA DTT 003)
- Yarn Friction tester
- Digital Crimp tester
- Dry meter III (Moisture meter) L5800
- Pyrotec Infrared dyeing machine
- Padder
- Spray rating tester
- Air Permeability tester
- Differential Scanning Calorimetry (DSC)
- Fourier Transform Infrared Spectroscopy (FTIR)
- Thermal Gravimetric Analysis (TGA)
- Dynamic Contact Angle Analysis (DCA)
- UV-VIS Spectrophotometer

PERSONAL PROTECTIVE EQUIPMENT LABORATORY

- Hydrostatic Head tester /FX 3000 IV
- Synthetic blood penetration instrument
- Microbial penetration
- Gelbo-flex with particle Counter (Lint Tester)
- Face mask particulate filtration efficiency (PFE) tester
- Respiratory resistance tester
- Face mask air flow resistance and differential pressure tester
- Face mask flame retardant tester

Contact the TSCT for Test and Analysis price list as well as and test request forms.

5 Human Capital Development

The TSCT offers a menu of short learning programmes to the Clothing, Textiles and related industry. All short learning programmes are governed by CPUT's Centre for Professional and Personal Development (CPPD) and its short course policy as well as the institutions quality management policy and procedure.

5.1 SHORT LEARNING PROGRAMMES

Programmes are mainly offered on a one-day per week release basis, but a number of our courses are also offered after hours to accommodate smaller manufacturers.

5.2 IN HOUSE TRAINING

There are companies that prefer their training programmes in house. Most of the training programmes can be adjusted and re-designed to meet specific training needs.

5.3 HOST PROVIDER INSTITUTE (HPI)

An accredited HPI to offer learnerships in collaboration with qualifying firms.

Contact the TSCT for Training Brochure and schedule of Short Learning programmes.

6 Product Development

SERVICES OFFERED

6.1 TECHNICAL DRAWINGS

Adobe Illustrator then convert it to a JPEG image which can be inserted into Microsoft Word or Excel document.

6.2 PATTERN DEVELOPMENT

Patterns can be constructed on Gerber software

6.3 3D BODY SCANS

Body scan using a 3D Body scanner on a project basis

6.4 FIT SAMPLE MAKING

Fit samples can be made in either calico or the client's fabric

6.5 PRODUCT ASSEMBLY

A production/operation construction breakdown can be developed from the sample which can be used for setting up a production line or costing.

6.6 PATTERN GRADING

Patterns can be graded on computer if a size specification is provided and plotted on paper

6.7 TEXTILES

Product development in textiles can be undertaken on a project basis

6.8 NON-WOVEN MANUFACTURING

Needle Punch full manufacturing plant



**ALL COMPANY INFORMATION WILL BE HELD IN THE STRICTEST CONFIDENCE.
A CONFIDENTIALITY AGREEMENT IS AVAILABLE IF REQUIRED.**

- Quotes will be provided per order
- Lead times will be provided on submission of a request form and is dependent on current workload.

7 Smart Organisation

Clustering of small businesses: Firms are provided services as a group to cross learn and thereby also share resources and cost.

Network Facilitation: If The TSCT does not have the requisite expertise it will refer clients to other service providers. viz. Technology Stations, SEDFA.

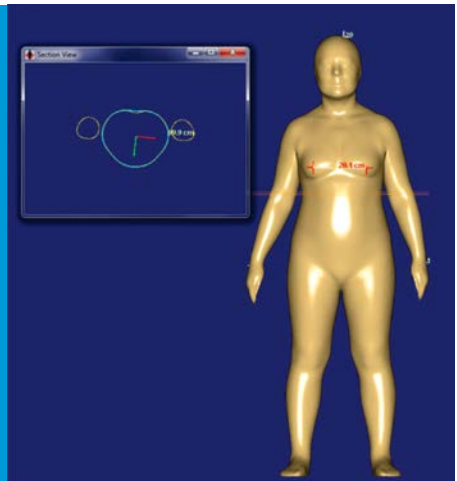
8 Research

Textile development and analysis

Anthropometry: Size and fit studies using 3D body scanner

Product and process development.

Personal Protective Equipment



9 Partners

The Technology Station in Clothing and Textiles within Cape Peninsula University of Technology has partnerships with various organisations and institutions.



Technology Innovation Agency



fp&m Seta: Fibre Processing and
Manufacturing Sector Education
and Training Authority
Accredited Host Training Provider

