



Suppliers' Quality Assurance Manual

Volume One: Process Guidelines

The Warehouse Limited
Version 1.2
March 2008

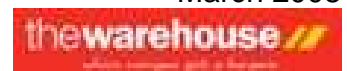


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Introduction

What is this manual for?

This manual explains The Warehouse Limited's apparel QA processes, and the standards that all our Suppliers will be tested to when producing apparel for us.

It is intended for use by all our apparel Suppliers, to familiarise themselves with our expectations prior to tendering for work; and, subsequently, as a reference guide to help Suppliers through the manufacturing phase.

Contents

The manual is comprised of two volumes.

Volume One (this volume) describes the process and provides guidelines for what Suppliers are expected to do. It should be read in full by all Suppliers, prior to tendering.

Volume One Sections	Contents
Section One: The QA Process	<ul style="list-style-type: none">• QA Process Overview• QA Process Descriptions• Quick Guides to Submissions• Compliance Guidelines
Section Two: Fabrics and Accessories	<ul style="list-style-type: none">• Quality requirements for fabrics and accessories• Submission processes• Testing processes and standards
Section Three: Garment Construction	<ul style="list-style-type: none">• Construction requirements• Product safety requirements• Manufacturing safety requirements
Section Four: Labelling and Packaging	<ul style="list-style-type: none">• Label approvals and testing• Packaging approvals and testing• Compliance• Packing requirements
Section Five: Final Inspection to AQL Standard	<ul style="list-style-type: none">• Explanation of AQL standards• AQL Inspection guidelines.

Volume Two contains all the reference material that may be needed in the course of fulfilling a Warehouse order. It should be used as support and reference during the manufacturing process to ensure that all Warehouse standards and expectations are met.

Feedback

We welcome and encourage feedback about the content or accuracy of this manual and about our Quality Assurance process at The Warehouse. To contact us, please email quality@thewarehouse.co.nz

Section One: The QA Process

What is this section about?

Section One, The QA Process, gives an overview of how we approach apparel QA at The Warehouse. It covers all the steps we go through, and provides information on what Suppliers are required to do at each stage of the process.

What should it be used for?

This section should be read by all TWL apparel Suppliers to ensure that they understand the process, end to end, and their role in it.

What does it contain?

- Quality Assurance Process Overview
 - Quality Assurance Process Descriptions
 - Quick Guide to Sample Submissions
 - Compliance Guidelines.
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Supporting materials

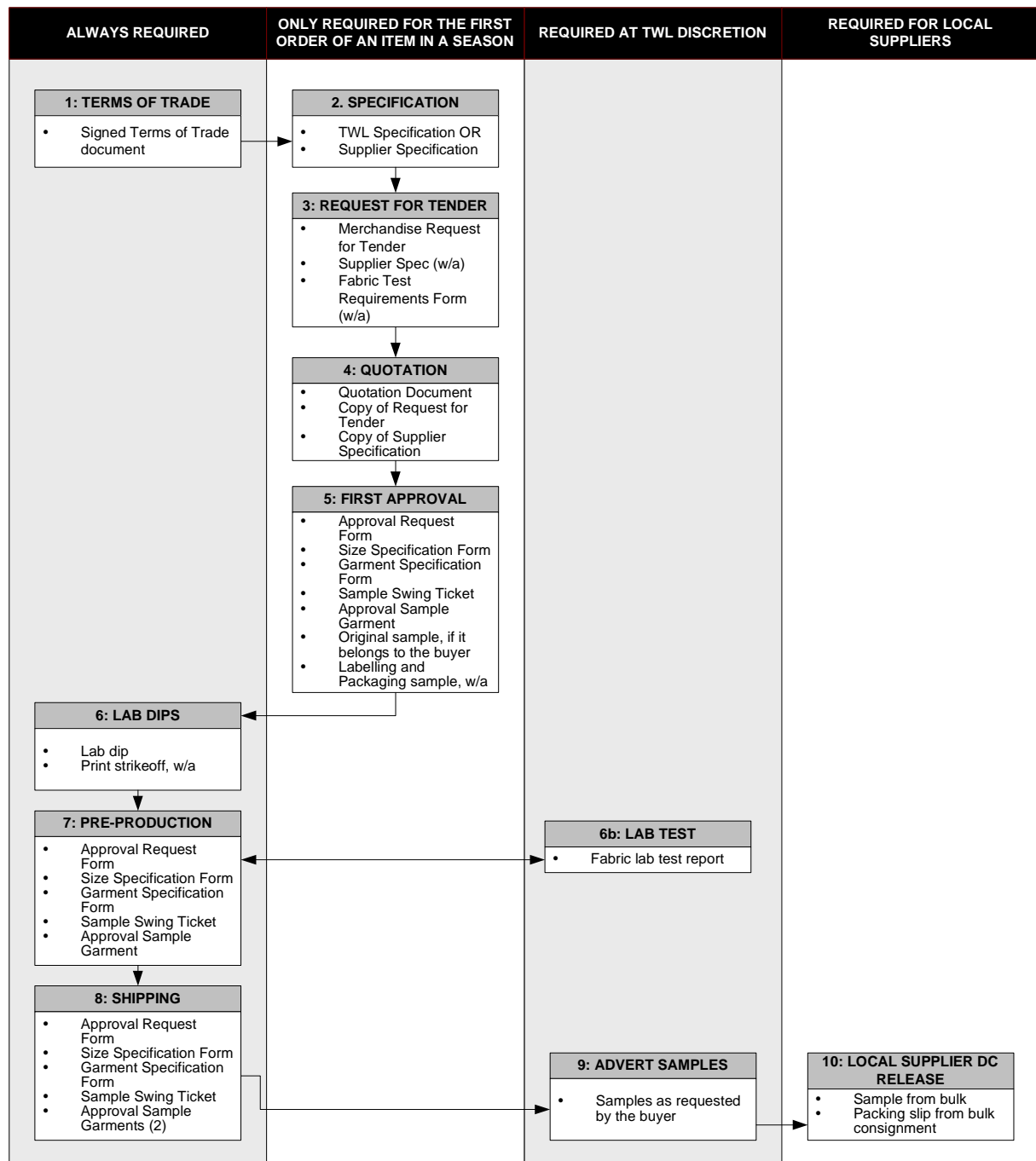
Supporting references and information can be found in Volume Two of this manual:

- Section Six: Document Samples.
-

1a: Quality Assurance Process Overview

10 Process Stages

The table below outlines The Warehouse's QA process, and the documentation supporting items required at each stage.



1b: QA Process Descriptions

In this section In this section, each of the process stages from the chart on the previous page is described in more detail.

Document samples For samples of all documents referenced in this section, please see Volume Two, Section Six: Document Samples.

1: Terms of Trade This is the master document that is used across all buying functions within The Warehouse Limited and sets out the mandatory requirements and contractual arrangements covering the general supply of product for resale by The Warehouse Limited.

This manual is to be used in conjunction with the Terms of Trade.

Terms of Trade must be signed before any orders can be placed with a Supplier. For a copy of the Terms of Trade, please go to www.thewarehouse.co.nz and navigate to Suppliers/The Warehouse/Terms of Trade.

2: Specification The garment specification may be provided by The Warehouse, or may, in some circumstances, be provided by the Supplier. This will occur, for example, for licensed products, or those garments which are produced under the Supplier's own brand.

The Warehouse Specification

This document consists of a size chart, sketch, and details of fabrics, accessories, stitching and construction.

Our size specifications are used in conjunction with the 'How To Measure' reference point sketches found in Volume Two, Section Ten of this manual.

The size table on The Warehouse specification includes a column headed **Sample Measures**. A copy of the specification must accompany every approval sample submitted to The Warehouse QA and the Supplier must measure the sample, listing the sample measurements in this column. The Supplier must submit this before QA will audit the sample.

Supplier Specification

We encourage Suppliers to use The Warehouse Size and Garment Specification forms when compiling their own garment specifications. Copies of these two forms are in Volume Two, Section Six: Document Samples.

A copy of the Supplier specification must accompany every approval sample submitted to The Warehouse QA and the Supplier must measure the sample, listing the sample measurements next to the size chart. The Supplier must fill this in or QA will not audit the sample.

Continued on next page

1b: QA Process Descriptions, Continued

3: Merchandise Request For Tender

This document outlines the policies and requirements behind the quote tendering process to The Warehouse Limited.

4: Quotation

This document is a generic format that is intended to formalise the submission of quotations to The Warehouse Limited. It is used in conjunction with the Merchandise Request for Tender document. Where the Supplier is quoting on their own product specification a copy of the specification must be submitted along with the quotation.

5: 1st Approval Sample

This sample must match the specification for approval of fit and construction and must be accompanied by the necessary paperwork. Refer to the Quick Guide to Submissions: First Approval Samples on page 9 for submission guidelines.

The sample must be made in fabrics and accessories that are of the correct weight, type, stretch factor, handle and finish as required by the specification. It is not possible to assess the fit and construction of garments if the fabric and accessories are not correct or as intended for bulk.

The Supplier may request weight, handle and finish approval on fabrics, and type, width and size on accessories at this stage. The fabric and accessories do not have to be in the correct colour; however, please ensure that they are provided in the same colour family. For example, do not provide a sample of men's pants in pink.

The samples must be measured prior to submission and measurements noted on the Size Specification Form in the column provided.

Samples that are found to have major fit and construction discrepancies or are made using different fabric and accessories will not be audited by QA. Supplier must ensure that garments are carefully checked prior to submission and if discrepancies are found, the sample should be remade.

If the original sample belonged to the Buyer, **it must be returned with the 1st Approval sample.**

The Supplier should arrange the preparation of labelling and packaging samples in order for them to be submitted for approval along with the 1st Approval sample garment.

Continued on next page

1b: QA Process Descriptions, Continued

6: Lab Dips and Print Strike-offs

Lab dips are to be sent to the Buyer for approval.

Print strike-offs are approved by the Buyer for colour and design only. All quality aspects of print strike-offs must be approved by QA.

6b: Lab Test

Third party lab tests are required on fabrics. Details of the test requirements can be found in Section Two, Testing of Fabric, Accessories and Labelling (see page 20 of this volume).

7: Pre-production Sample

The purpose of this sample is to issue final approval pending the commencement of production. Any fit or construction amendments requested in the 1st approval report must have been made on this sample ready for approval.

Refer to the Quick Guide to Submissions: Pre-production Samples on page 10 for submission guidelines.

Fabric and accessories must also receive final approval at this stage. All colourways on order are to be submitted. The sample must be measured prior to submission and measurements noted on the accompanying copy of the size chart.

If the 1st Approval Sample was sewn in New Zealand but the bulk is to be manufactured off-shore, then the pre-production sample must be made at the off-shore factory. Pre-production samples must be made up in the actual bulk fabric, with the actual bulk accessories, labels, swing tags, barcode stickers, etc.

If fabric testing has been requested the lab test report must accompany this sample. An email copy of the report is acceptable.

Copies of invoices for TWL brand labels and for zips must accompany this sample. An email copy of the invoices is acceptable.

All fabric and accessory performance test details, and a comprehensive outline of our requirements regarding fabric performance are included in Section Two: Fabrics and Accessories, page 15.

8: Shipping Samples

Note that two garments are to be sent at the Shipping Sample stage. Refer to the Quick Guide to Submissions: Shipping Samples on page 11 for other submission guidelines.

These two samples must have been taken randomly from the bulk production. Bulk will be compared to these samples upon arrival in New Zealand; therefore the quality of these samples must be representative of the bulk. The samples must be measured prior to submission and measurements noted on the accompanying copy of the size chart.

1b: QA Process Descriptions, Continued

9: Advertising Samples

One sample in each colour, or as per Buyer's order details.

Refer to the Quick Guide to Submissions: Advertising Samples on page 12 for submission details.

10: Local Supplier Status DC Release

Suppliers who have Local Supplier status must submit to The Warehouse a sample from the bulk prior to booking the order into The Warehouse distribution centre.

Please refer to Quick Guide To Submissions: Local Supplier DC Release Samples on page 13.

The sample is to be sent to the respective Buyer's assistant for submission to The Warehouse quality assurance team for approval to release to the DC. A packing slip of the bulk consignment must accompany the sample. Suppliers must not attempt to deliver to The Warehouse distribution centre without receiving prior approval from The Warehouse Quality Assurance team.

A note regarding Repeat Orders

When an order is placed for an item which has already been ordered previously, some of the approval stages can be omitted.

Sample garments for repeat orders are submitted for approval at the pre-production and shipping stages only. Pre-production approvals can also be omitted, at The Warehouse's discretion.

Lab dips and prints must be submitted to the Buyer for approval if they are different from previous orders.

Under no circumstances is the Supplier to change factory or fabric source without prior approval from the Buyer when repeating orders. If it is necessary to change factory or fabric source, then Supplier must submit garment, fabric, accessories, labelling and packaging samples from the 1st approval stage, as if for a new style development.

1c: Quick Guides to Submissions

What are these for?

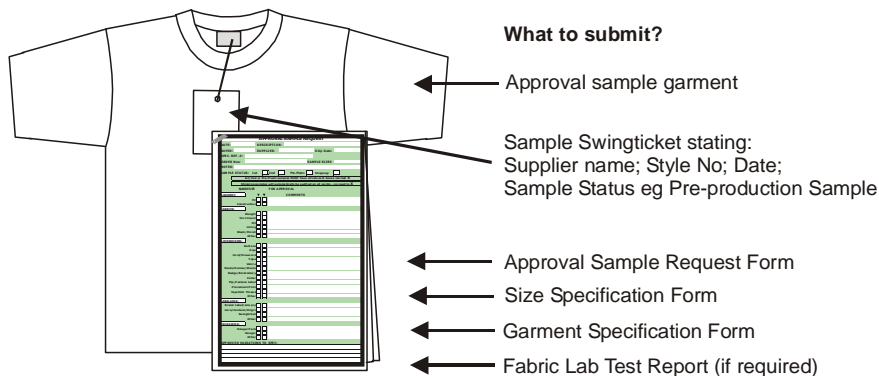
On the following pages, you'll find quick visual guidelines to what samples and documents must be submitted at each stage in the approval process:

- First Approval Samples
 - Pre-production Samples
 - Shipping Samples
 - Advertising Samples
 - Local Supplier DC Release Samples.
-

Quick Guide to Submissions: Pre-production Samples

WHAT SIZES TO SUBMIT?

Infants: Size 00 & or Size 2 (depending on size range of the order)
 Girls : Size 3, 7, 8, 12 & Size 16
 Boys: Size 3, 7, 8 & size 12
 Women's: Size 12 or Size Medium
 Mens: Size 92 waist or Size Large



SAMPLE SWINGTICKET

What must be on the swingticket?

- The Warehouse Style number
- The date
- The sample status eg Pre-production
- The suppliers name
- The factory's name (if available)

APPROVAL SAMPLE REQUEST FORM Refer to Volume Two for a copy of this form

SIZE SPECIFICATION FORM Refer to Volume Two for a copy of this form

The Warehouse Ltd		Size Specification Table									
Item No	Item Name	Size	Length	Width	Depth	Height	Weight	Volume	Area	Perimeter	Notes
1	Sample Item	Size 12	100	50	20	15	1000	15000	10000	1000	

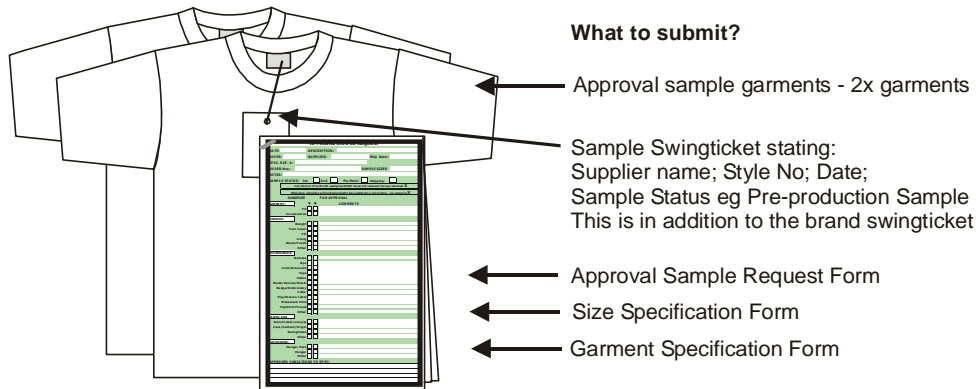
Supplier must measure the sample and record the measurements in the column provided

GARMENT SPECIFICATION FORM Refer to Volume Two for a copy of this form

Quick Guide to Submissions: Shipping Samples

WHAT SIZES TO SUBMIT?

Infants: Size 00 or Size 2 (depending on size range of the order)
 Girls & Boys: Size 7 & Size 12
 Women's: Size 12 or Size Medium
 Mens: Size 92 waist or Size Large



SAMPLE SWINGTICKET

The Warehouse Style: **BTSH9999**
 Date: **01/06/02**
 Status: **PRE-PRODUCTION**
 1ST APPROVAL: **ACME LTD**
 Agents/Supplier Name: **AAA FACTORY**
 Factory Name: **AAA FACTORY**

What must be on the swingticket?

The Warehouse Style number
 The date
 The sample status eg Pre-production
 The suppliers name
 The factory's name (if available)

APPROVAL SAMPLE REQUEST FORM

Refer to Volume Two for a copy of this form

DATE: **01/06/02** SUPPLIER: **Acme Ltd** STYL NO: **BTSH9999**
 SPEC. REF.: **777-6666** SAMPLE NO: **12**
 NOTES: **PRE-PRODUCTION**
 APPROVAL: Approved Not Approved
 COMMENTS: **Collar & Sleeve Jersey 145gsm**

SIZE SPECIFICATION FORM

Refer to Volume Two for a copy of this form

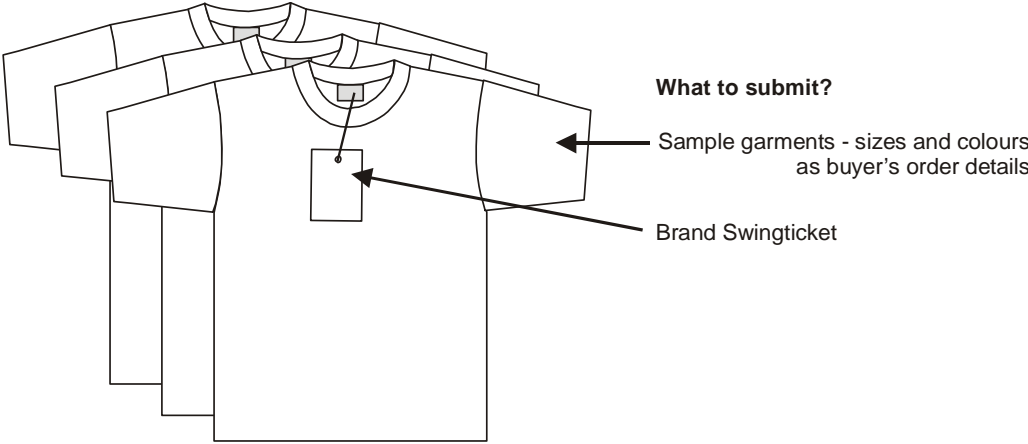
The Warehouse Ltd		Size Specification Table	
Item	Spec	Actual	Notes
Collar	145gsm		Measure for collar & sleeve of jersey and use of jersey
Sleeve	145gsm		Measure for sleeve of jersey
Body	145gsm		Measure for body of jersey
Waistband	145gsm		Measure for waistband of jersey
Neckband	145gsm		Measure for neckband of jersey
Collar	145gsm		Measure for collar of jersey
Sleeve	145gsm		Measure for sleeve of jersey
Body	145gsm		Measure for body of jersey
Waistband	145gsm		Measure for waistband of jersey
Neckband	145gsm		Measure for neckband of jersey
Collar	145gsm		Measure for collar of jersey
Sleeve	145gsm		Measure for sleeve of jersey
Body	145gsm		Measure for body of jersey
Waistband	145gsm		Measure for waistband of jersey
Neckband	145gsm		Measure for neckband of jersey

Supplier must measure all samples and record the measurements in the column provided

Quick Guide to Submissions: Advertising Samples

WHAT SIZES TO SUBMIT?

Sizes and colours as buyer's order details



Quick Guide To Submissions: Local Supplier DC Release Samples

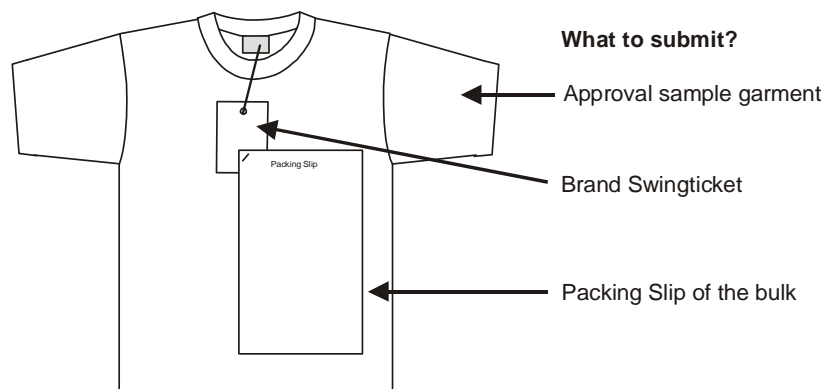
WHAT SIZES TO SUBMIT?

Infants: Size 00 or Size 2 (depending on size range of the order)

Girls & Boys: Size 7 & Size 12

Women's: Size 12 or Size Medium

Mens: Size 92 waist or Size Large



1d: Compliance Guidelines

Summary

It is the Supplier's responsibility to ensure that all apparel product complies with the **most recent versions** of the following standards and regulations:

Standard Type	Standard
Care Labelling	<ul style="list-style-type: none"> AS/NZS1957 AS/NZS2621 Consumer Information Standards (Care Labelling) Regulations (NZ)
Sun protective labelling	<ul style="list-style-type: none"> AS/NZS4399
Fibre content labelling	<ul style="list-style-type: none"> AS/NZS2622 AS/NZS2450 Consumer Information Standards (Fibre Content Labelling) Regulations (New Zealand) AS 2392 (Australia)
Country of origin labelling	<ul style="list-style-type: none"> Consumer Information Standards (Country of Origin (Clothing and Footwear) Regulations (New Zealand) Australian Customs Notice – ACN 92/194
Children's nightwear & other daywear	<ul style="list-style-type: none"> AS/NZS1249 including Revised version June 2008 Product Safety Standards (Children's Nightwear and Limited Daywear Having Reduced Fire Hazard) Regulations AS/NZS1182 NZS 5822 (accessories on infants apparel)
Other standards	<p>Suppliers of apparel to The Warehouse must ensure that product meets the requirements of the following:</p> <ul style="list-style-type: none"> Fair Trading Act (New Zealand) Consumer Guarantees Act (New Zealand) Commerce (Trade Descriptions) Act 1905 (Australia) Trade Practices Act (Australia)

Further Information

Information regarding the New Zealand standards and Acts can be found on www.comcom.govt.nz and www.standards.co.nz.

The Acts can be browsed or printed from www.knowledge-basket.co.nz.

The standards and regulations can be purchased from Government bookstores.

If you require additional assistance please contact quality@thewarehouse.co.nz.

Section Two: Fabrics and Accessories

What is this section about?

Section Two provides guidelines for The Warehouse's requirements in terms of quality and functionality of fabrics and accessories, including the fabric test requirements.

What should it be used for?

All suppliers should read this section and be familiar with our requirements prior to making a submission for a tender.

What does it contain?

The section contains:

- General requirements
 - Fabric-specific quality requirements
 - Accessories quality requirements
 - Testing requirements.
-

Supporting materials

Supporting references and information can be found in Volume Two of this manual:

- Section Seven: Fabric Testing References.
-

2a: Fabric and Accessories: General Quality Requirements

Summary

The quality of all fabrics and accessories used on Warehouse apparel must be of a commercially acceptable standard and meet all stated Warehouse quality standards.

In a situation where a quality issue arises, either from customer returns or as identified by QA before bulk garments are delivered to our stores, The Warehouse may require the Supplier to have further testing carried out. All testing is at the Supplier's expense.

2b: Fabric-Specific Quality Requirements

This table

The table below gives the guidelines for quality requirements for various fabric types.

Fabric	Quality guidelines
Corduroy	Use only "W" back type cords unless specified otherwise in the Garment Specification in Buyer's order details.
Fill or Wadding	Usually lighter weight of fill is used in hoods and sleeves than is used in the body. Pocket flaps and collars have a lighter weight again.
Laminated Fabrics	These must not show signs of de-lamination or bubbling.
Interfacings	Fusibles must be correctly fused and not show signs of delamination, bubbling, strike-through or strike-back. Type of interfacing must be carefully matched to the fabric type. Stretch fabrics require specific interfacing so that they either allow the fabric to stretch or restrict it without breaking down – each of these factors being dependent on styling. The colour of the interfacing used must be matched to the outer fabric colour, as incorrectly coloured interfacing can show through the fabric or can be obvious on buttonholes. Black or charcoal colour interfacing must be used in mid to dark colours and white coloured interfacing on white and light colours.
UPF Rated Fabrics	Fabrics used in rash vests, swimwear, and sun-protection garments must be tested to verify the rating. Refer to AS/NZS4399 for testing requirements. All UPF testing must be carried out by ARPANSA – refer to Testing Laboratories listed in this section for address and details.
Fabrics to be used for children's nightwear and other daywear¹	Fabrics, accessories and trims for this category of apparel must comply with AS/NZS 1249 including Revised version June 2008 .

¹ 'Other daywear' relates to garments that are not specifically designed as nightwear but may be worn to bed, in accordance with **AS/NZS 1249 including Revised version June 2008**.

2c: Accessories Quality Requirements

This table

The table below gives the guidelines for quality requirements for various accessory types.

Accessory	Quality guidelines
Drawcords / ties	<p>Chunky type cotton drawcords that do not have toggles on the ends must have knotted ends. For drawcord / tie requirements refer to Product Safety in Section Three: Garment Construction, page 31.</p> <p>Synthetic drawcord ends must be neatly heat-sealed and must not be sealed with an open flame.</p> <p>Flat drawcord ends may have the cut ends turned under and stitched in place or have knotted ends.</p>
Elastic	<p>There must be no run-back of elastomeric yarn at the cut ends. Elastic must be joined to prevent run-back.</p>
Zips	<p>All zips must be sourced from the nominated zipper supplier; please contact quality@thewarehouse.co.nz for the current supplier.</p> <ul style="list-style-type: none"> • All zippers must meet the current AS2332 standards for mechanical tests. • All zippers must meet The Warehouse colourfastness standards • All zippers must be branded with the registered brand name (unless that is not possible due to zip design) • For all open-ended zippers a functional stopper mechanism must be placed at the top of the zipper tape to prevent the slider from being removed from the zip. On nylon coil zips the stoppers must be plastic. <p>Fake branded zips will not be accepted.</p>
Metal Accessories	<p>All accessories that are metal or have metal parts must be non-toxic and must not have any nickel content. Paint on metal components must be non-toxic and must not chip off.</p> <p>All metal components must be rustproof.</p> <p>Edges of accessories must not be sharp; e.g. top corners of zips, underside of rivets and eyelets.</p> <p>Metal eyelets must have plastic washers on the underside.</p> <p>Studs must be arrow-head type. All domes, studs and poppers must be applied using a compressed air machine – these accessories must not be applied by hand. Plastic washers MUST be used in Infants' and Children's wear and may be used if needed on Adults' wear.</p>

Continued on next page

2c: Accessories Quality Requirements, Continued

Satin ribbon bows	Ends of these components must be cut by hot-wire, they must not be heat sealed with open flame.
Thread	<p>For Lightweight Fabrics: Polyester wrap core thread @ 24Tex</p> <p>For Mediumweight Fabrics: Polyester wrap core thread @ 30Tex</p> <p>For Heavyweight Fabrics: Polyester wrap core thread @ 60Tex</p> <p>For PU, PVC, Leather: Cotton soft glaze finished thread @ 40-50Tex</p> <p>For Denim and Heavy Canvas: Cotton soft mercerised finished thread @ 40-50Tex</p> <p>Monofilament thread is not to be used under any circumstances.</p>

2d: Submission and Approval of Fabrics and Accessories

Garment format required

All fabrics and accessories must be audited in garment format: QA cannot approve fabrics as piecegoods or accessories if they are not applied or attached to the garment that they are intended for.

This is because the performance of a fabric or accessory may adversely affect the garment and this is impossible to predict unless QA audit the fabric and accessories in the garment's finished state.

Visual approval only

QA approval reports will approve fabrics and accessories from a visual aspect only. If a performance issue on an approval sample is obvious to QA the Supplier will be advised to amend the issue via our approval report.

2e: Testing of Fabric, Accessories and Labelling

Three testing levels There are three levels of fabric, accessories and label testing that The Warehouse require – they are, **General**, **Specific** and **Legal**:

General Suppliers should be testing all fabric and accessories on a regular basis to ensure that they are commercially acceptable as per the legal requirements of the legal standards and regulations referred to in 1d: Compliance Guidelines on page 14.

The Warehouse may request from the Supplier verification of performance levels of fabrics and accessories on a random basis, or, if a quality issue arises through customer feedback.

Specific The Warehouse may request fabric and accessories to be tested by a third party to the performance levels stated in the tables in the ‘Mandatory Fabric Tests’ section on the following pages.

Please refer to the section ‘When are tests required?’ on page 22 to determine whether you should be arranging for third party testing; then refer to the fabric test charts on page 23 to determine which tests are required.

Please note that even those orders which are not subject to mandatory testing will be randomly audited and if the fabric does not meet Warehouse standards, the supplier will be charged for testing costs and may be penalised.

Legal In accordance with the legal requirements of the standard **Children’s nightwear and other daywear** specific fabrics and trims must be tested for flammability. This standard also outlines the requirements for testing fire danger label durability and attachment to the garment. **Note: The Fire Danger label in children’s nightwear is the only label that we require to be tested for durability.**

UPF testing is required if the Cancer Society approval is noted on the UPF rating tag.

For other legal requirements, please refer to the Compliance Guidelines on page 14.

Continued on next page

2e: Testing of Fabric, Accessories and Labelling, Continued

Supplier responsibilities

- It is the Supplier's responsibility to test fabrics, accessories, components and labels as stated above.
 - **After establishing which tests are required, Suppliers should refer to Volume Two, Section Seven of this manual, in which the testing methods, standards and required outcomes are detailed.**
 - All testing is at the expense of the Supplier.
 - Testing laboratories that are to be used for Warehouse apparel product are listed in this section.
 - All required testing must be carried out prior to submission of the item for approval. Suppliers must submit the lab test report at the same time as the item is submitted for approval – where The Warehouse specifically requests testing to be done, QA will not approve the item if the lab test report does not accompany the sample.
 - The lab test report must be an original document from the testing laboratory. **Photocopies or faxed copies of lab test reports are not acceptable.**
 - One report will suffice for multiple styles and orders per season. In this situation, all style numbers that the report pertains to must be listed on the report.
-

2f: Mandatory Fabric Tests

When are tests required?

Testing will be required for all orders with a quantity of 2500 pieces or more.

For orders with a quantity of less than 2500 pieces, The Warehouse will conduct random tests.

For orders that have multiple drops or multiple styles using the same fabric: we would require an order or series of orders with multiple drops adding in total to 2500 pieces or greater, (example: an order for 10,000 pieces with 5 drops of 2000 pieces each), to be tested; here we would need you to test just once and quote all the relevant order numbers on the test report.

If you have different orders/styles placed at the same time using the same fabric, and the total of all orders are equal to or greater than 2500 pieces (example: 5 orders/styles of 800 pieces each, making a total of 4000 pieces) the fabric must be tested. As in the previous example, please test just once and quote all relevant order numbers on the test report.

Responsibility for testing and costs

All mandatory tests are to be conducted at Suppliers' cost for apparel orders placed by The Warehouse. The required standards that need to be met for the tests can be found in Volume Two, Section Seven: Fabric Testing References.

TWL may request other tests where it is deemed necessary, at the Supplier's cost.

In this case, and in the case of random testing on orders of less than 2500 pieces, if the tested garment or fabrics fail the test, the Supplier will be required to pay for the testing and any other costs incurred by TWL, plus any discounts or penalties imposed by the Buyer.

Test reports

All test reports submitted are to be original documents from a TWL approved testing lab.

Test reports must state the order numbers and style number and have relevant fabric swatches attached.

All test reports must be submitted at pre-production stage.

Fabric sourced from third parties

Suppliers who do not produce their own fabric, but purchase from an outside source, should ensure that they send TWL fabric specifications and standards to their fabric source. Ideally these requirements should be stipulated on their fabric contracts. Compliance to these requirements will then be a condition of the contract.

Continued on next page

2f: Mandatory Fabric Tests, Continued

What tests are required? The table below denotes which tests are required to be performed on Woven and Knitted fabric types. This can be used as a guideline; however, note that all specifications created since Q3 2006 state the exact tests required on a particular item. The second table provides more information on the Colourfastness tests that are required.

After establishing which tests are required, Suppliers should refer to Volume Two, Section Seven of this manual, in which the testing methods, standards and required outcomes are detailed.

TESTS	FABRIC TYPE	
	Woven	Knitted
Fibre Analysis (Composition/ Fibre Content)	On request	On request
Construction	On request	On request
Yarn Count	On request	On request
Weight	On request	On request
Dimensional Stability ** (Shrinkage)	✓	✓
To washing	All garments with fabric that can be washed.	
To dry cleaning	All garments which are categorized as dry clean only.	
Spirality	N/A	✓
Tensile Strength *	Microfibrés, corduroy, satin, taffeta, (fabric with shiny finish), flannel, flannelette, chemically treated garments/fabrics (washed jeans, wrinkle free, resin treated cottons)	N/A
Tear Strength	✓ (If Tear Strength fails must then check Tensile Strength (mandatory))	N/A
Colour Fastness (Please see chart below for details)	✓	✓
Seam Slippage	✓	N/A
Pilling	(Martindale Test) ✓	(Pill Box) ✓
Stretch & Recovery	Only For – All fabric with elastane	✓
Water Repellancy	Rainwater & Ski wear.	N/A
Flammability	As per legal requirements of the standards – for clarification please refer to spec and/or contact QA Technician.	
UPF	As per legal requirements or the standards – for clarification please contact the relevant QA Technician.	
Water Absorbency/Wicking	N/A	On request, for relevant fabrics

2f: Mandatory Fabric Tests, Continued

Colourfastness Tests

TESTS	GARMENT/COLOURWAY TYPE				
	Swimwear/ Beach Wear	Plain Dyed & Yarn Dyed		Printed	
		Light Shades	Medium Dark Shades	Light Shades	Medium Dark Shades
Washing	✓	✓	✓	✓	✓
	For all garments with fabric that can be washed				
Light fastness	✓	✓	✓	✓	✓
	Underwear & sleepwear not required				
Dry Cleaning	✓	✓	✓	✓	✓
	For garments which are categorised as Dry Clean Only				
Sea Water & Chlorinated Water	✓	N/A	N/A	N/A	N/A
Rubbing Wet & Dry	✓	N/A	✓	N/A	✓
		All Sleepwear			
Print appearance after washing	✓	✓	✓	✓	✓

- * Plus any fabric that appears likely not to meet TWL Standards and Requirements
- ** If Spirality is very visible at shrinkage test, it must be recorded /noted
- ✓ Denotes test required
- N/A Denotes Not Applicable

2g: Testing Laboratories

Nominated Supplier

For all fabric tests conducted in China, SGS is the nominated Supplier. All vendors/Suppliers will receive a 30% discount off the list price for tests being conducted for The Warehouse (they need to inform SGS that the tests are for the Warehouse to receive the discount.). SGS is aware of The Warehouse standards and familiar with what type of tests are to be conducted for the required standards.

SGS-CSTC Shanghai Textile Laboratory

Address: 1F, No. 3 Building, No 889 Yishan Road
Shanghai, P.R.China, PC: 200233

Tel: +86 21 5464 4550
Fax: +86 21 6495 8763

Offices also in:
SGS-CSTC Chang Zhou Textile Laboratory
SGS-CSTC Qing Dao Textile laboratory

For Account Manager and email details, please contact The Warehouse's QA team.

Testing in New Zealand

Agresearch Limited (was Canesis Network Ltd) Lincoln Research Centre

Address: Private Bag 4749, Christchurch
Physical Address: Cnr Springs Rd & Gerald St, Christchurch

Tel: +64 3 321 8800
Fax: +64 3 321 8811

Testing for UPF ratings

ARPANSA

Address: 619 Lower Plenty Rd., Yallambie, Victoria 3085, Australia

Tel: +61 3 9433 2211
Fax: +61 3 9432 1835

SGS-CTC Shanghai Textile Laboratory (see above)

Section Three: Garment Construction

What is this section about?

Section Three describes The Warehouse's requirements in terms of the construction of garments, and the safety issues associated with their functionality and their manufacture.

What should it be used for?

All suppliers should read this section and be familiar with our requirements prior to making a submission for a tender.

What does it contain?

The section contains:

- General construction requirements
 - Requirements for specific garments, fabric and accessories
 - Product safety guidelines
 - Manufacturing safety guidelines.
-

Supporting materials

Supporting references and information can be found in Volume Two of this manual:

- Section Ten: How to Measure
 - Section Eleven: Infants and Childrenswear Size Charts and Special Instructions
 - Section Twelve: Grading.
-

3a: General Requirements

Construction Seams and Topstitching

- Lockstitch must not be used on stretch fabrics.
- Back rise seams must be reinforced with double row lockstitch, two thread chainstitch or topstitched with edge or twin needle topstitching.
- Blind hem felling must be securely latched off with no run-back of the thread end – this is a machine setting.
- All raw edges must be turned or overlock neatened, visible raw edges are not acceptable.
- French seams must be securely constructed so that the 1st seam sewn does not pull apart with washing and wearing – Supplier must ensure that the 1st seam has sufficient width to prevent this occurring.
- Thread tensions and stitch density must be correct to prevent seams ‘grinning’. 3-thread single needle overlock seams are not acceptable, except on lingerie.
- Construction seams must be either:
 - Lockstitch and overlock neatened (1cm width)
 - Mock safety stitch or 4-thread/2-needle overlock
 - 5-thread safety stitch

Stitches per inch

The table below indicates the stitches required per inch (2.5cm) in various fabric types.

Fabric	Seams	Topstitch
Light to medium weight woven fabrics	10-12	9-10
Light to medium weight stretch fabrics	12-14	14-16
Men's Business shirts	12-14	14-16
Lingerie	16-20	14-16
Denim and canvas	10-12	8-9
PU, PVC, Leather	8-9	7-8

Continued on next page

3a: General Requirements, Continued

Bartacking and seam ends

Bartacking is required:

- On all top corners of patch pockets and at each end of inset pockets
- At each end of jet or welted pockets - bartack to the depth of the welt/jet
- All beltloops to be bartacked attached unless otherwise specified
- At the edge of fly base - also at base of fly curve to secure the fly facing to the garment
- At the top of splits, e.g. sideseam splits.

Stitching at end of seams must be secured by another seam or securely back-stitched.

Where folded edges are joined e.g sleeve cuffs or neckbands there must be a row of tack stitching for reinforcement at this point. Overlocking thread ends must be turned under the seam and well secured.

Seam puckering causes

Seam puckering can be caused through:

- Loose thread tension
- Stitches per inch (2.5cm)
- Presser foot tension
- Incorrect thread gauge
- Incorrect needle size.

Suppliers must ensure that correct machine settings are engineered into the manufacture of the garments prior to commencement of production.

Garment-specific requirements

The table below notes the construction requirements for some specific types of garment.

Garment Type	Construction Requirement
Padded garments	All padded garments must have fill quilted to the lining.
Lined garments	Linings must be anchored to the outer at the underarm and the low shoulder point by a neatened strip of self fabric at 2cms long – this allows some ease of movement. Body and sleeve linings must have ease allowed in the length so that the lining does not drag the outer up. Centre back of lining must have a 2cm wide pleat to allow ease across the back.

Continued on next page

3a: General Requirements, Continued

Fabric-specific requirements

The table below notes the construction requirements for some specific types of fabric.

Fabric	Requirement
Jersey and Stretch Fabrics, and Knitwear	All conventional shoulder seams must be taped with either mobilon tape or 6mm wide cotton herringbone tape.
Check fabrics	Checks must be matched across centre front, between each sleeve, between each cuff and between collar points. Pockets must match warp and weft directions unless cut diagonally.
Pile fabrics	Fabrics with a definite pile or nap or a one-way print must be cut with all components of any one garment with the pile running the same direction to prevent shading.
Stretch fabrics	Production lays must be left to relax after laying up, either overnight or for a minimum of 12 hours.

Accessory requirements

The table below notes the construction requirements for some specific accessories.

Accessory	Requirement
Zips	<p>All zips except invisible type - The teeth of zips are not to be sewn over as this can cause the teeth to part thus breaking the zip. The stoppers at the base and top of the zip are not to be sewn into the seams – the seam must be above the stoppers at the top and below the stopper at the base.</p> <p>Invisible zips – the teeth at the base are to be heat-sealed in the centre to prevent the teeth splitting apart. The heat-seal point should be below the end of the garment seam.</p>
Button Attachment	<p>All Infants buttons must be 4 hole buttons. – No exceptions 3-7 Girls and Boys must be 4 hole buttons – any exception must be have written authorisation by the Quality Manager.</p> <p>All buttons must be lock stitch machine attached. Buttons attached by hand will not be accepted. The stitching must be securely latched off with no run-back of the thread end – this is a machine setting.</p> <p>Spare buttons must be attached 6 cms from the hem, either in the front facing (of a front opening garment) or the side seam (see illustration below).</p>
Drawcords / Ties	<p>All waist drawcords / ties must be attached at waist centre back.</p> <p>Hood drawcords must be attached at the centre top.</p> <p>No functional drawcords / ties must be used for children's garments below age seven. Only decorative cords, where requested.</p>

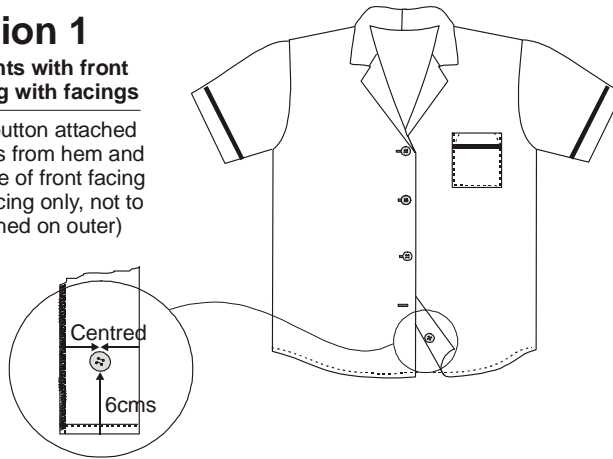
Continued on next page

3a: General Requirements, Continued

Option 1

Garments with front opening with facings

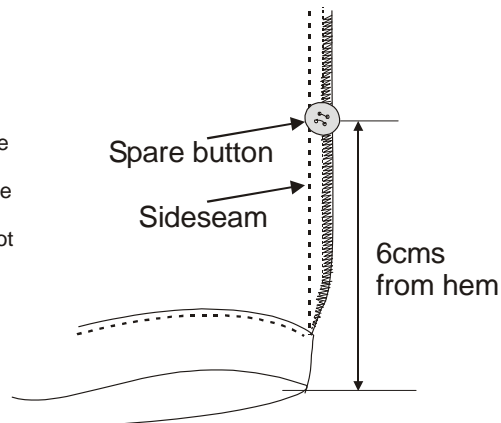
Spare button attached @ 6cms from hem and in centre of front facing (thru facing only, not to be stitched on outer)



Option 2

Other Garments without front opening

Spare button @ 6cms from hem stitched to the lefthand sideseam. Sideseam width must be at least 1cm wide. Button stitching must not show through to the outside of the garment.



Other extra button placements

- For **pants**, the extra button must be attached to the bottom edge on the underside of the left pocket bag, 5cm from the outleg seam. In instances where there is no pocket bag, place the extra button as per the polo:
- For **polos**, the extra button can be attached to the content/care label, in a way that does not obstruct the care instructions, or attached to seam allowance below care label or add woven label/tab below care label and attach button.

Pressing

Garments must not be pressed with buttons done up.

3b: Product Safety

Summary

The Supplier is responsible for ensuring that the customer's safety is not compromised in any way by the finished state of the apparel product. This objective must be actioned through quality inspection procedures and line supervision during the manufacturing processes. It also entails compliance with the standards, regulations and Acts listed under **Compliance** in the Quality Assurance section, Section 1 of this manual.

Safety requirements

The following list is non-exhaustive and the responsibility lies with the source to either rectify a safety issue firsthand, or, bring to our attention any potential product safety issues.

Item	Safety Requirement
Accessories	Removable accessories which do not meet the requirements of NZS5822 will not be permitted on garments intended for children under three years old. Accessories that are not intended for removal from the apparel product must be securely applied during manufacture so as to remain permanently attached for the lifetime of the product.
Buttons	All buttons must be lock stitch machine attached. Buttons attached by hand will not be accepted. Refer to General Requirements in this section regarding button attachment
Zips	Zips must have a functional stopper mechanism at the top of the zipper tape to prevent the slider from being removed from the zip. To prevent this occurring, stoppers must not be sewn into the seams at either end of the zip.
Drawcords / Ties and Toggles	All drawcords / ties must be securely stitched to prevent their removal from the garment e.g. trackpant drawcords / ties are to be stitched down at the centre back waist, hood drawcords are to be stitched down at a seam nearest to the centre of the hood. Functional drawcords / ties must not be used on necks, hoods or hems of infants' wear. Toggle ends and spring-loaded drawcord stoppers are not to be used on infants' wear – these drawcords must have knotted ends.
Thread Ends	Untrimmed thread ends are not only untidy but are a dangerous hazard on infants' and children's wear because they can wind around child's fingers or toes, cutting off circulation. Thread ends must be trimmed flush with the garment on all apparel.
Stone –washed garments	Garments that are wash processed must be rinsed thoroughly to remove residue dust or sand. Check garments after processing to ensure all stones have been removed from garment and are not caught up in seams or pockets.
Infants' and Children's Nightwear	Infants' and children's wear must comply with AS/NZS1249 and Product Safety Standards (Children's Nightwear and Limited Daywear Having Reduced Fire Hazard) Regulations.

3c: Manufacturing Safety

Three policies We require adherence to three policy approaches with regards to metal contamination:

- A Broken Needle Policy
 - A Pins Policy
 - A Replacement Needle Policy
-

Broken Needle Policy Supplier must operate a Broken Needle Policy that will include the following operating procedures:

- Machinists must not hold spare needles – they must be distributed by an authorised supervisor
- All parts of broken needles must be retrieved and stored along with an incident record
- If parts of a broken needle are not located the garment being sewn must be passed through a metal detector. If the missing needle parts are not locatable as a result, the garment must be disposed of and not included in the bulk shipment
- Old needles must be disposed of safely by an authorised supervisor.

These procedures must operate in all areas of garment construction including embroidery, appliqué and any outsourced sewing operations. All procedures must be documented and available for inspection if requested.

Pins Neither pins nor staples are to be used at any point in the garment manufacturing process. This includes all stages of cutting, accessories collation, sewing lines, inspection and packing. Staples must not be used on paperwork on the manufacturing floor.

Replacement Needles The broken needle policy outline above covers product safety to prevent contamination of garments with parts of broken needles. The needle replacement policy is intended to prevent needle damage to fabric through using blunt needles. Both of the policies should be run alongside one another.

Suppliers should operate a needle replacement policy where needles are replaced at least twice daily and not wait until they break before replacing them. This may need to be more frequent depending on the fabric. Suppliers should determine required frequency of needle change through trials on the fabric prior to commencement of production.

Needle damage to fabric may be caused through sewing too fast which heats up the needle. It can also be caused through incorrect size of needle for the fabric and the sewing thread.

Needles must be sharp, good quality brand and appropriate size for fabric. Ball point or size 70 needles are commonly used for knitted fabrics and for light-medium weight fabrics with elastane content.

Section Four: Labelling and Packaging

What is this section about?

Section Four covers the guidelines for the various types of labels that are required by The Warehouse, and by New Zealand law; and for the packaging of items which are sold pre-packaged.

What should it be used for?

All suppliers should read this section and be familiar with our requirements prior to making a submission for a tender.

What does it contain?

The section consists of:

- Guidelines for label approvals and testing
 - Guidelines for packaging approvals and testing
 - Legal compliance guidelines
 - Requirements for label attachment
 - Shipment packing requirements.
-

Supporting materials

Supporting references and information can be found in Volume Two of this manual:

- Section Eight, Care Instructions
 - Section Nine, Labelling Requirements.
-

4a: Label Approvals and Testing

Label wording Please refer to Volume Two, Section Eight: Care Instructions, and Section Nine: Labelling Requirements for specific wording requirements on TWL labels.

**Brand, Origin,
Care and
Fibre Content
Sew-in Labels**

Approvals

Sew-in labels must be submitted to The Warehouse QA for approval prior to production. If multiple garment styles use a common label then only one sample label is required for approval but the Supplier must advise all styles that label is to be audited for. Label approvals should be submitted at the same time as the 1st approval sample garment.

On repeat orders the Supplier must submit the correct sew-in labels attached to the pre-production sample garment for approval.

Supplier must check labels prior to submission to ensure that the label details are as required by the specification, or, as requested by QA. If labels are incorrect they should not be submitted until they have been corrected.

Testing

Printed labels must remain legible for the life of the garment after continuous washing and wearing.

Labels must have soft, smooth edges and must not fray.

All labels must meet label durability standards.

For all outerwear bottoms – especially those with heavy fabrics, or any wash treatments – the content/care/country of origin labels must be **woven**.

**Fire Danger
Sew-in Labels**

Approvals

Fire danger labels for children's nightwear, and styles requiring these labels, must be submitted to The Warehouse QA for approval. The labels must be accompanied by the lab test report verifying that they have been tested for durability and comply with **AS/NZS 1249 including Revised version June 2008**. The lab test report must be an original copy.

Testing

Fire danger labels for children's nightwear (and styles requiring these labels) must be tested for durability and secure attachment to the garment. Samples of the labels must then be submitted to The Warehouse QA accompanied by the lab test report verifying that they have been tested and comply with **AS/NZS 1249 including Revised version June 2008**. The lab test report must be an original copy.

4b: Packaging Approvals and Testing

Hang-sell Packaging

Materials

CPP (cast polypropylene) is the preferred material for polybags although **OPP** (oriented polypropylene) is also acceptable).

Approvals

Hang-sell packaging must be submitted to The Warehouse QA for approval prior to production. Printed details on the packaging must be carefully checked by the Supplier prior to submission to ensure that the details are as required by the packaging artwork. If details are incorrect the items should not be submitted until they have been corrected.

Testing

Polybags must have securely welded sides and plastic hanger hooks so that the package performs satisfactorily in-store until the product has been sold.

Swingtickets

Approvals

Swingtickets should be submitted to the Buyer for checking barcodes prior to production.

Stickers

Approvals

Stickers should be submitted to the Buyer for checking artwork prior to production.

4c: Label and Packaging Compliance

Summary

All apparel products must comply with the Acts, Standards and Regulations stated in the Compliance Guidelines in Section One of this manual.

Item	Compliance Requirement
Sew-in labels	<p>Each piece of a set must have brand, care, fibre content and origin on its labels.</p> <p>Reversible garments must have the care, content, origin label sewn in a pocket. If the garment does not have a pocket then the care, content, origin details must be on a swingticket attached to the garment.</p>
Country of Origin	<p>For all Warehouse apparel orders placed after August 2002 Country of Origin must either be on the upper side of the brand label, or must be on a separate sew-in label sewn directly alongside the brand label and positioned as stated in Label Attachment in this section of the manual. Refer to Appendix A in this section for visual layout of Country of Origin labelling.</p> <p>Note that all lettering must be a minimum of 2mm in height.</p>
Care Instructions	<p>If a garment is the Supplier's own style and specification they may assign care instructions from the Care Instructions in Volume Two of this manual. The correct care instruction is selected from the Care Instructions Matrix by first selecting the garment type followed by the fibre type. Where there are multiple fibre contents in one fabric, or within a garment, then the care instruction for the most sensitive fibre should be selected.</p> <p>The Warehouse QA will audit care instructions selected by Supplier. Wording must be approved at the 1st Approval stage, even if the label has not yet been produced.</p> <p>Note that all lettering must be a minimum of 2mm in height.</p>
Fibre Content	<p>If a garment is the Supplier's own style and specification then the Supplier must list the correct fibre contents on their specification.</p> <p>Fibre content labelling must comply with fibre content standards and regulations:</p> <ul style="list-style-type: none"> • AS/NZS2622 • AS/NZS2450 • Consumer Information Standards (Fibre Content Labelling) Regulations <p>The Warehouse QA will audit fibre content layout selected by Supplier.</p>

Continued on next page

4c: Label and Packaging Compliance, Continued

Infants and Children's Nightwear	<p>Labelling must comply with the following standards:</p> <ul style="list-style-type: none"> • AS/NZS 1249 including revised version June 2008 • AS/NZS 1182. <p>Refer to Label and Packaging Testing in this section of the manual for details regarding our requirements.</p> <p>Refer to Volume Two, Section Eleven of this manual for specific Childrenswear requirements.</p>
Country of Origin	<p>Labelling must comply with Consumer Information Standards (Country of Origin (Clothing and Footwear) Regulations.</p> <p>Labelling must also comply with the requirements of the Australian Customs Service. Refer to:</p> <ul style="list-style-type: none"> • ACN 92/194 Commerce Imports Regulations, <p>for the commerce marking of imported goods into Australia.</p>
UPF Labelling	<p>Labelling must comply with:</p> <ul style="list-style-type: none"> • AS/NZS4399 <p>UPF stated on the labelling must be in accordance with rating as determined by the UPF testing.</p>
Hang-sell Packaging	<p>If garments are to be sold pre-packaged, the packaging must state:</p> <ul style="list-style-type: none"> • Country of origin • Fibre content • Care instructions <p>These details must be exactly the same as the sew-in label details on the garment.</p> <p>If children's nightwear, or other daywear that requires Fire Danger labelling, is to be sold pre-packaged the packaging must also have:</p> <ul style="list-style-type: none"> • The relevant Fire Danger label (prominently printed) • a Size Chart that relates to the range of sizes of the garments to be sold in the bag <p>All branded hanger packs must have a Suffocation Warning on the reverse. Packs must be made of CPP (preferred) or OPP (accepted).</p>
Price and Barcodes	<p>There must be only one price stated on the labelling. Suppliers must not place a price/barcode sticker over the top of another price/barcode if the price on the top is more expensive than the one underneath.</p> <p>Price and Barcodes to include TWL season code and item code.</p>

Sourcing of labels and tickets

The Warehouse requires all labels, barcodes and swingtags to be sourced from their nominated label supplier.

Please contact the relevant QA technician for details of the currently nominated supplier.

4d: Label Attachment

Sew-in Labels

- All labels must be securely sewn so they remain permanently attached to the garment.
 - Labels must be attached so that none of the wording is concealed in the seams.
 - Each piece of a set must have labels stating brand, care, fibre content and origin.
 - Reversible garments must have the care, content, and origin labels sewn in a pocket. If the garment does not have a pocket then the care, content, and origin details must be on a swingticket attached to the garment.
-

Additional attachment information

More detailed illustrations of placement of labels can be found in Volume Two, Section Nine: Labelling Requirements.

4e: Shipment Packing

Summary

This relates to the requirements for packing of the bulk ready for shipment.

Item	Requirement
Innerbags	<p>Garments are to be packed in one inner polywrapper per carton. The polywrapper must be sealed.</p> <p>Garments must NOT be packed in individual polybags unless the bags are branded hang-sell packaging, or, as required by the order details.</p>
Presentation of garments	<p>Garments must be folded to avoid creasing. Garments must be dry before being packed. If garments are steam pressed, the bulk must be allowed to dry-out for at least 3 hours before packing.</p> <p>No pins, clips (metal or plastic) or card inserts are to be used unless specifically requested.</p> <p>Business shirts may have card collar support and card insert but must not use pins or clips.</p>
Tissue separating garments	<p>Garments that have placement prints must have one sheet of tissue preventing the print from sticking to the next garment.</p> <p>The swingticket must be placed so that it does not stick to the print.</p> <p>PVC or PU garments will require tissue between each garment.</p> <p>Where tissue is used, the Supplier is to ensure that the garments/prints are fully dry before packing, to ensure that the tissue does not stick to the garments. Tissue must be colourfast.</p> <p>In all other cases, tissue is NOT to be used unless specifically requested.</p>
Cartons	<p>Carton markings must be as specified in the Terms of Trade document.</p> <p>No metal or plastic strapping is to be used on the cartons.</p>
Stickers	<p>All stickers must have a low tack/fabric-friendly adhesive, so that they do not leave a residue on the garment when they are removed.</p>

Section Five: Final Inspection to AQL Standard

What is this section about?

It is The Warehouse's expectation that all orders will be inspected by Suppliers to AQL 4.0 standard before they are dispatched. This is the standard to which The Warehouse carries out its own Final Inspection on the goods.

This section outlines the AQL standard, and our expectations for Suppliers' own inspection processes.

What should it be used for?

All suppliers should read this section and be familiar with our requirements prior to making a submission for a tender. Inspections should then be carried out to this standard.

What does it contain?

The section consists of:

- An introduction to what AQL is
 - Guidelines on carrying out an AQL inspection
 - What to do when an AQL inspection fails
 - Tables of sample lot sizes and rejection points
 - Tables of defect types and how they should be classified.
-

5a: What is AQL?

Summary

The AQL is the maximum percent defective that for purposes of sampling inspection can be considered satisfactory as a process average. (In other words, the maximum number of defects per sampling size that will be deemed acceptable).

Why use AQL?

When you inspect a sample from a lot of merchandise (if the units are randomly selected and are a true representation of the whole), the sample will give you an accurate projection of the true condition of the lot.

All statistical plans contain a built in risk where you have to balance the greater accuracy of a larger inspection group with the extra time and cost. While it is possible to pass a bad lot or fail a good one using this method, if the sample is properly sized and selected it should reliably predict the outcome 85% to 90% of the time. If used correctly the system will work and is far more cost effective and practical than the 100% inspection method.

A random final inspection procedure based on a known statistical model – **ANSI/ASQCZ1.4 1993** (formerly Military Standard 105E) – is recommended and is the most widely accepted method of sampling by attributes based on the mathematical theory of probability. This model must be used on all bulk production.

Categorising defects

Defects are categorised as either Critical, Major, or Minor. A single Critical defect will fail the order. The number of acceptable Major and Minor Defects varies by sample size (see table later in this section). Four minor defects equals one major defect.

Critical Defect - A defect that is likely to result in a hazardous or unsafe condition for an individual using the product or that contravenes mandatory regulations.

Major Defect – A defect that is likely to result in failure; reducing the usability of the product and obvious appearance defects affecting the saleability of the product.

Minor Defect – A defect that does not reduce the usability of the product but is nevertheless a workmanship defect beyond the defined quality standard.

5b: How should an AQL inspection be carried out?

Before inspecting

An inspection should only commence when all of the following conditions are met:

1. An approval sample garment with all relevant attachments is available
2. A sample/approval report from The Warehouse QA ASO Department is available
3. Order details are available
4. Fabric and accessories test reports have been submitted and approved
5. Print test report available (where applicable)
6. 100% of the stock is completed and available (must include all styles, sizes and colours as specified on order).

It should be noted that all inspections should be done in a clean and well lit area.

How many inspectors are needed?

The number of inspectors you need depends on your total production, the lot size, the complexity of the item you make and your present outgoing quality level. The inspection time per unit varies depending on the number of operations in the item. You can use 25 to 30 units per hour as a rough guide but keep in mind for the reasons listed above the actual rates may vary widely.

It is best to use one inspector per lot. As an average order for The Warehouse is 3000 pieces, the average sample size (using AQL sampling standards) would be 125 pieces. As such, one inspector could do 1 or 2 inspections per day. For larger lots/orders you may have to use more than one inspector.

Assuring random sampling

Statistical auditing involves selecting a few units from the whole lot, doing a very thorough inspection of those few and making a projection based on the results. Therefore it is extremely important that the units be selected by random sampling. This means you select your sample from the entire lot. All units in the lot must be complete before you take your sample. As a production cut or lot starts coming out of production, you cannot take your sample from just the first 25-50 % of the lot.

With apparel merchandise you have some assurance of getting random sampling by selecting units in ratio corresponding to the size and colour breakdown. Here is an example of how it could work:

Continued on next page

5b: How should an AQL inspection be carried out?, Continued

Production lot of 1000pcs

Lot Colours	LOT SIZES					Lot total by colour
	8	10	12	14	16	
WHITE	85	125	165	85	40	500
RED	42	63	83	42	20	250
BLUE	42	63	83	42	20	250
TOTAL	169	251	331	169	80	1000

Random sampling (for level II sample size)

Lot Colours	LOT SIZES					Lot total by colour
	8	10	12	14	16	
WHITE	7	10	13	7	3	40
RED	3	5	6	3	3	20
BLUE	3	5	6	3	3	20
TOTAL	13	20	25	13	9	80

The total number of your sample per size must add up to the number of garments required as per the AQL table. You may have to round up and down accordingly. In general if your lot has up to and including 8 sizes, you should try and take a minimum of 3 garments per size across all colours.

Please refer to Section 5d for tables of sample sizes and the number of acceptable errors per sample lot.

How to inspect

The table below describes the basic procedure for carrying out the inspection.

Please refer to Section 5e for tables of specific defects and their classification.

Stage	Details
1. Review of Technical File and Order Details	<p>The inspector must make sure he has the following items available:</p> <ul style="list-style-type: none"> • Purchase order • Packing list • Product specification (size specs, sketches etc) • Defect classification • Special instructions • An inspection form to record the outcome • Sample cards to accompany the final selected samples.
2. Inspection of Standard and Sampling	<ul style="list-style-type: none"> • Follow the AQL table as you go. Remember that: • Critical defects – not allowed • Major and minor defects – AQL 4.0

Continued on next page

5b: How should an AQL inspection be carried out?, Continued

3. Carton Selection	<ul style="list-style-type: none"> • Obtain and review packing lists • Estimate number of cartons/quantity presented for inspection • Select cartons randomly for complete style, colour and size range
4. Packing and Markings	<p>Check following against specification/order:</p> <ul style="list-style-type: none"> • Packing material • Packing method • Packing size • Inner and outer packing • Labeling and hang tags • Shipping marks • Packing condition • Packing dimensions
5. Quantity/Assortment Check	<p>Check the following:</p> <ul style="list-style-type: none"> • Number of pieces per export carton • Check style, size and colour of assortment as per packing list and carton marking <ul style="list-style-type: none"> ○ Style ○ Size assortment – solid or assorted size ratio ○ Colour assortment – solid or assorted size ratio • Check style, size and colour as per hangtag and polybag printing
6. Style Comparison	<p>Compare style against specification and reference sample for the following points</p> <ul style="list-style-type: none"> • Style • Construction (e.g. seam structure, etc) • Sewing method (e.g. types of stitching etc) • Stitches per inch • Accessories (e.g. types, position, brand etc) • Printing (e.g. design, size etc) • Embroideries (e.g. design, size, stitching, density etc) • Others
7. Material (Touch & Feel)	<p>Compare material against reference sample/swatches by hand feel and touch.</p> <p>Comment on the material (touch & feel) as follows:</p> <ul style="list-style-type: none"> • Similar to reference sample • Slightly stiffer, stiffer • Slightly softer, softer • Others

Continued on next page

5b: How should an AQL inspection be carried out?, Continued

<p>8. Colour and Comparison</p>	<p>Compare colour against the reference sample/swatches by visual comparison on the following:</p> <ul style="list-style-type: none"> • Colour of shell fabric • Colour of lining fabric • Colour of printing • Others <p>Comments on colour shade batches as following:</p> <ul style="list-style-type: none"> • Similar • Slightly lighter, lighter, noticeably lighter • Slightly darker, darker, noticeably darker • Slightly brighter, brighter, noticeably brighter • Slightly duller, duller, noticeably duller • In different tone • Others <p>Try to obtain samples of fabric swatches from different colour shade batches especially for colour difference in big contrast.</p>
<p>9. Size Measurement</p>	<p>Check size measurement against specification. If measurement is based on the factory's specification, please attach this size specification for reference. You must measure a minimum of 3 pieces per size.</p>
<p>10. Weight</p>	<p>Check weight of knitted garment, quilted garment, bags, towel etc. Compare weight of actual finding to specification and reference sample.</p>
<p>11. Visual Quality Inspection (Workmanship)</p>	<p>Check workmanship according to the correct sampling plan. Indicate all defects in the garment with red arrow defect stickers.</p> <p>Report one most serious defect per unit and classify as major or minor defects.</p> <p>Defect classification according to the following:</p> <ul style="list-style-type: none"> • General cleanliness and appearance • Material faults (state which type of material faults) • Sewing defects • Defects on accessories • Other defects <p>For fabrication inspection, classify the defects to the point system.</p> <p>Additional discrepancies other than the defects already reported in the AQL can be reported in percentage, based on the total sample size.</p>
<p>12. Function/Assembly Check</p>	<p>Check zipper, buckles, snap etc function by opening and closing 10 times per sample. Record the piece of non-function and not smooth operation.</p>

Continued on next page

5b: How should an AQL inspection be carried out?, Continued

13. Barcode Check	Check the correction of barcode number on full sample size against specification/order. Check if barcode can be scanned by scanner. If possible, do it in the inspection location, otherwise, draw 1 piece barcode per item back to office to check by scanner.
14. Checking of Other Things	<ul style="list-style-type: none">• Smell and odor (e.g. bleaching agent, detergent etc)• Moisture and damp condition• Mildew
15. Drawing of Samples	Draw samples as following and fill in data in the sample card: <ul style="list-style-type: none">• Shipment sample: one piece in good condition per shipment• Defective sample: representative defectives for the majority defects• Laboratory testing samples: as per instruction• Provide reasons if unable to draw samples.

The above is meant to be a guide only and may not be all inclusive for all cases.

5c: If the Inspection fails: Re-inspection and Corrective Action

100% inspection required

Whenever a lot fails you must 100% inspect to eliminate all classification of defects. The lot should either be repaired or in the event this is not possible, the good separated from the bad and the shortage quantity re-made.

Always remember if the defective units found in the samples exceed the allowed number (as per the table), you must reject the lot, even though it fails by only one unit. Do not increase the sample size as this would make the statistical plan invalid – always follow the plan.

100% inspection process

When conducting a 100% re-inspection you can use the following process:

- After 20 % of the lot has been 100% inspected, pause and review the data.
- At this point combine the sample audit with the 20% inspection data.
- If the projection is still running more than the AQL, then the 100% inspection must be continued.
- If it is running less than the AQL, you can cease the 100% inspection (though even if inspection is ceased it is strongly recommended that all damages found are either repaired or replaced).

Example of corrective action on 1000 units with AQL 4.0:

Process Action	UNITS INSPECTED	UNITS DEFECTIVE
Sample Audit	80	8
20% Inspection	200	23
TOTAL	280	31

Defective units (31) divide total inspected (280) = audit percent (11.07%)
Action: continue 100% inspection.

5d: AQL Sample Lots and Rejection Points

A Level II sample size should be chosen for final inspections conducted at factory. A Level I sample size can be chosen when conducting in-line inspections or inspections on finished product on only a percentage of the order.

LEVEL I

ORDER QTY	SAMPLE SIZE	The Warehouse Standard					
		AQL 2.5		AQL 4.0		AQL 6.5	
		AC	RE	AC	RE	AC	RE
UP-150	8	0	1	1	2	1	2
151-280	13	0	1	1	2	2	3
281-500	20	1	2	2	3	3	4
501-1200	32	2	3	3	4	5	6
1201-3200	50	3	4	5	6	7	8
3201-10000	80	5	6	7	8	10	11
10001-35000	125	7	8	10	11	14	15

LEVEL II

ORDER QTY	SAMPLE SIZE	The Warehouse Standard					
		2.5		4.0		6.5	
		AC	RE	AC	RE	AC	RE
UP-150	20	1	2	2	3	3	4
151-280	32	2	3	3	4	5	6
281-500	50	3	4	5	6	7	8
501-1200	80	5	6	7	8	10	11
1201-3200	125	7	8	10	11	14	15
3201-10000	200	10	11	14	15	21	22
10001-35000	315	14	15	21	22	21	22

- AC – Accept Point
- RE – Reject Point
- Critical defects not allowed
- 4 minors equals 1 major

5e: AQL Defect List for Garments

Three types of defect **Critical Defect** - A defect that is likely to result in a hazardous or unsafe condition for an individual using the product or that contravenes mandatory regulations.

Major Defect – A defect that is likely to result in failure; reducing the usability of the product and obvious appearance defects affecting the saleability of the product.

Minor Defect – A defect that does not reduce the usability of the product but is nevertheless a workmanship defect beyond the defined quality standard.

Defect Description	Critical	Major	Minor
Material Defects - Woven Garments			
Weaving Faults - (broken yarn)		X	
Weaving Faults – (missed yarn)		X	
Weaving Faults – (coarse yarn)		X	X
Weaving Faults – (slub)			X
Weaving Faults – (neps)			X
Weaving Faults – (colour dye bars)		X	
Weaving Faults – (colour stripes)		X	
Weaving Faults – (thick place)		X	
Weaving Faults – (thin place)		X	
Weaving Faults – (thick bar)		X	
Weaving Faults – (thin bar)		X	
Holes		X	
Fabric torn		X	
Permanent crease lines in fabric		X	
Permanent fold lines in fabric		X	
Material Defects - Knit Garments			
Knitting Faults – (broken yarn)		X	
Knitting Faults – (uneven knitting yarn)		X	
Knitting Faults – (coarse yarn)		X	X
Knitting Faults – (slub)			X
Knitting Faults – (neps)			X
Knitting Faults – (colour yarn)		X	
Knitting Faults – (dye bars)		X	
Knitting Faults – (stripes)		X	
Knitting Faults – (run stitches)		X	
Knitting Faults – (needle line)		X	
Knitting Faults – (laddering)		X	
Knitting Faults – (drop stitches)		X	
Knitting Faults – (loose stitches)		X	
Holes		X	
Fabric torn		X	
Permanent crease lines in fabric		X	

Defect Description	Critical	Major	Minor
Permanent fold lines in fabric		X	
Cleanliness			
Stain		X	X
Oil spots		X	X
Oil stain		X	X
Water spots			X
Water stain		X	X
Rust stain		X	
Pen mark		X	
Pencil mark		X	X
Chalk mark		X	X
Glue stain		X	X
Glue mark		X	X
Untrimmed thread ends			X
Loose thread			X
Dust fibres attached on fabric surface			X
Loose fibres attached on fabric surface			X
Appearance			
Colour shade variation		X	X
Colour off tone		X	
Glaze		X	
Poor ironing		X	
Crease mark		X	
Wrinkle mark		X	
Fold mark		X	X
Unmatched checks		X	X
Unmatched stripes		X	X
Sewn in wrong fabric direction		X	
Sewn in wrong fabric side		X	
Washing mark		X	X
Uneven washing effect		X	
Burned		X	
Scorched		X	
Over pressed (seam impressions)		X	
Stretched shape due to pressing		X	
Distorted shape due to pressing		X	
Bubbles due to improper fusing		X	
Stitching Defects			
Broken stitches		X	
Skipped stitches		X	X
Run-off stitching		X	X
Uneven stitching		X	X
Irregular stitching		X	X
Wavy stitching		X	X
Insecure back stitching		X	
Loose stitch tension		X	X
Uneven stitch tension		X	X

Defect Description	Critical	Major	Minor
Uneven stitch density		X	X
Missed stitching		X	
Missed bar tack		X	
Unmatched join stitching		X	X
Missed sewing operation		X	
Needle chewing(cutting and holes)		X	
Seaming Defects			
Open seam		X	
Puckered seam		X	X
Pleated seam		X	
Twisted seam		X	
Puckering		X	X
Frayed edges		X	
Folded seam		X	
Seams folded opposite to specified direction		X	
Unaligned seam		X	
Unmatched seam		X	
Uneven pleats length		X	X
Uneven darts width		X	X
Misplaced bar tacks		X	
Uneven seam length		X	X
Seam cracking on stretch fabric		X	
Linking seam cannot stand for stretch		X	
Collar/Neck			
Uneven collar points		X	
Mis-shaped collar points		X	
Unbalanced collar		X	
Overlapping collar		X	
Bubble in collar fall		X	
Bubble in collar stand		X	
Uneven collar end		X	
Collar shape not as approved		X	
Little recovery or no elasticity at neck		X	
Neck opening too small for wearing		X	
Front Placket			
Uneven placket width		X	X
Incorrect placket width		X	
Uneven placket length		X	X
Visible under placket		X	X
Button & Button Hole			
Missed button		X	
Broken button		X	
Insecure button stitching		X	
Wrong button		X	
Omitted button hole		X	
Incomplete stitching		X	
Uncut button hole		X	

Defect Description	Critical	Major	Minor
Unaligned button & button hole		X	X
Misplaced button & button hole		X	X
Button stitch not properly locked		X	
Sleeve & Cuff			
Uneven sleeve length		X	X
Uneven sleeve placket length		X	X
Uneven sleeve placket width		X	X
Notches exposed at sleeve slit		X	
Wrong attachment of sleeve lining		X	
Uneven cuff width		X	X
Uneven cuff height		X	X
Front/Back Yoke/Shoulder			
Excess gathering at yoke seam		X	X
Unmatched seams at armhole		X	X
Improper gathering at sleeve cap		X	X
Pocket & Pocket Flap			
Unaligned front pockets (hi-low pocket)		X	X
Slanted pocket		X	X
Excess tightness of pocket		X	X
Excess fullness of pocket		X	X
Pocket cloth not smooth when bar tacking		X	X
Twisted pocket cloth		X	
Poorly shaped pocket		X	
Poorly shaped pocket corner		X	
Misplaced pocket position		X	X
Incorrect pocket position		X	
Exposing pocket corner		X	
Incorrect position of pocket flap		X	
Hem			
Torn at rib		X	
Holes at rib		X	
Uneven hem		X	X
Twisted hem		X	
Wavy hem		X	X
Ribbing			
Torn at ribbing		X	
Holes at ribbing		X	
Little recovery or no elasticity at ribbing		X	
Lining			
Lining too short or too long		X	
Puckering at lining seam		X	X
Twisted lining		X	
Waistband & Belt Loop			
Uneven waistband (Hi-low waistband)		X	X
Poor waistband finishing		X	X
Uneven belt loop		X	X
Improper position of belt loop		X	

Defect Description	Critical	Major	Minor
Missed belt loop		X	
Waistband stitching broken when stretched		X	
Little recovery or no elasticity at waistband		X	
Fly			
Uneven fly width		X	
Curved fly edge		X	
Exposed zipper tape when fly is closed		X	
Leg			
Twisted leg		X	
Uneven leg		X	
Side seam turned wrongly		X	
Irregular hem width		X	X
Embroidery			
Missed embroidery		X	
Misplaced embroidery		X	
Broken embroidery stitches		X	
Incorrect embroidery stitch density		X	
Uneven embroidery stitching		X	X
Colour off shade or not as specified		X	
Wrong embroidery		X	
Printing Defects			
Missed printing		X	
Misplaced printing		X	
Printing faults – (printing stain)		X	X
Printing faults – (off printing)		X	
Glitter / diamantes rubbing off print		X	
Colour off shade or not as specified		X	
Wrong printing		X	
Labels & Hangtags			
Missed label		X	
Missed hangtag		X	
Wrong label		X	
Wrong hangtag		X	
Label insecurely stitched		X	X
Label folded by stitching		X	X
Part of label sewn inside seam		X	
Label sewn inverted (label up-side-down)		X	
Label sewn reversed (label up-side-down)		X	
Brand – no sew in, swing ticket or price ticket		X	
Brand – wrong sew in, swing ticket or price ticket		X	
Brand – wrong colour sew in, swing ticket or price ticket		X	
Care label – no label	X		
Care label – label inaccessible and no details elsewhere	X		
Care label – letter height under 1.5mm	X		

Defect Description	Critical	Major	Minor
Care label – only symbols used	X		
Care label – not legible	X		
Care label – does not comply with legal specification	X		
Country of Origin – no label	X		
Country of Origin – label inaccessible and no details elsewhere	X		
Country of Origin – letter height under 1.5mm	X		
Country of Origin – does not comply with legal specification	X		
Fibre Content – no label	X		
Fibre Content – label inaccessible and no details elsewhere	X		
Fibre Content – letter height under 1.5mm	X		
Fibre Content – does not comply with legal specification	X		
Fire Safety – no label	X		
Fire Safety – label obscured and no details on packet or elsewhere	X		
Fire Safety – not at centre back	X		
Fire Safety –each separate piece of garment not labelled	X		
Fire Safety – incorrect label	X		
Fire Safety – does not comply with legal specification	X		
Accessories			
Scratches		X	X
Poor plating		X	
Sharp points	X		
Sharp edges	X		
Rust		X	
Wrong accessories		X	
Colour discharged		X	
Malfunction of zipper		X	
Zipper slider not running smoothly		X	X
Missed zipper teeth		X	
Missed zipper puller		X	
Wavy zipper		X	X
Poor setting of zipper		X	
Zipper tape too close to fly seam affecting zipper function		X	
Detached snap		X	
Detached rivet		X	
Detached stud		X	
Snap too tight to close or open		X	X
Snap too loose to close or open		X	X

Defect Description	Critical	Major	Minor
Fabric torn around snaps		X	
Missed shoulder pads		X	
Misplaced shoulder pads		X	X
Missed Velcro tapes		X	
Misplaced Velcro tapes		X	X
Packing Defects			
Wrong folding size		X	
Wrong folding method		X	
Wrong hangtag		X	
Wrong tissue paper		X	
Missed hangtag		X	
Missed tissue paper		X	
Missed silica gel		X	
Missed spare button		X	
Polybag torn		X	
Body			
Excess gathering at yoke seam		X	X
Unmatched seams at armhole		X	X
Improper gatherings at sleeve cap		X	X
Deformed shape		X	
Measurement			
Outside tolerance less than a grade			X
Outside tolerance equal to or more than a grade		X	
Miscellaneous Defects			
Wrong size label		X	
Odour		X	
Mildew		X	
Wet item		X	
Damp item		X	
Visible or disturbing mending places		X	

Please note the above list is not all inclusive and is to be used as a guide only.