WOVEN GARMENTS MERCHANDISING

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Project

On

Woven Garments Merchandising

(Course code – TE-407)

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APPROVAL

This project titled **"Study on Woven garments merchandising in apparel industry",** submitted by A.K.M. Ashraf Uddin, Md. Mahmudul Hasan Khan and S.M. Tanvir Ahmed to the Department of Textile Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Textile Engineering and approved as to its style and contents. The presentation has been held on 18/04/2012.

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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Md. Abdullah-Al-Mamun, Senior Lecturer, Department of Textile Engineering** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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Finally we must acknowledge with due respect the constant support and patients of our parents.

By this project work we achieve the knowledge about Merchandising and every single term of merchandising work. Such As, we know about LC, PI, PO, Shipment Term, Sample approval, Stitch Class, Mail corresponding with Buyer, Testing Term and Test required, ETC.

ABASTRACT

This project on "Woven Garments Merchandising" Now days merchandising is a very important term at garments sector.

By Merchandising all the term of Garments Manufacturing are controlled and follow up the total process to avoid the faults. On the other word we can say that a Merchandiser show the right way to get garments order or deliver the garments properly.

The aim of a merchandiser is to merchandise a product. After getting a product hunting order, buyer sends a master sample and a BOM (Bill of Material) Sheet to merchandiser for Merchandising. That means to make a sample just like master sample. After that merchandiser send it sampling section and also send instruction for making the sample correctly. Merchandiser also find out the Fabric, Accessories And trims that are used at the original sample and send it to sampling section to use it for sample making. After making the sample properly it monitor by him if the product is make correctly then the garment send to the Buyer for approval. After approve the product buyer want price per garments or per dozen and merchandiser merchandise the product price and send it to buyer if the price is approval by buyer then merchandiser send PI (Proforma Invoice) to buyer. Then buyer open LC (Letter of Credit) Against Factory. After open the LC the mercendiser go for bulk production and also gives accessories and trims order.

Finally finish the production, products send for shipment.

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CHAPTER 1. INTRODUCTION

1.1. INTRODUCTION:

Textiles and clothing will always be essential goods for human beings. Spinning and weaving were the main activities that drove the Industrial Revolution in the 18th century. Since then the textile industry has been a leading industry in the initial phase of industrialization in many countries in different periods of time in the world. Bangladesh is an important producer & exporter of woven RMG product. There are about 4500 garments factories running in Bangladesh. Growth of garments factories started in Bangladesh around 1980. But now nearly 79% of our foreign currency is earned from RMG export. At present Bangladesh is producing & exporting more than 60 items of garments. Garments are exported to USA, Canada, Japan, Australia, Middle East and many other countries in the world. Cheapest labor cost is the biggest advantage for Bangladeshi garments producers & exporters.

1.2. HISTORY OF DEVELOPMENT OF WOVEN WARE OF BANGLADESH:

The RMG business started in Bangladesh in the 70s but it was then merely a casual effort. The first consignment of knitwear export was made in 1973 and the first consignment of woven garment was made in 1977. In 1981-82 the contribution of Woven garments in the total export was 1.10%. Afterwards it is a story of sustained success for the Bangladesh RMG sector. The knitwear sector has grown over the years in geometric progression and become the prime driving force of Bangladesh's export earnings. Within a decade the contribution of Woven to the export basket became 42.83% (1990-91) and the knitwear sector's contribution was 7.64% (1990-91). Now Knitwear has become the largest export earning sector of Bangladesh contributing 40.01% to national export earnings at the end of FY 2009-10 (July-April).[1]

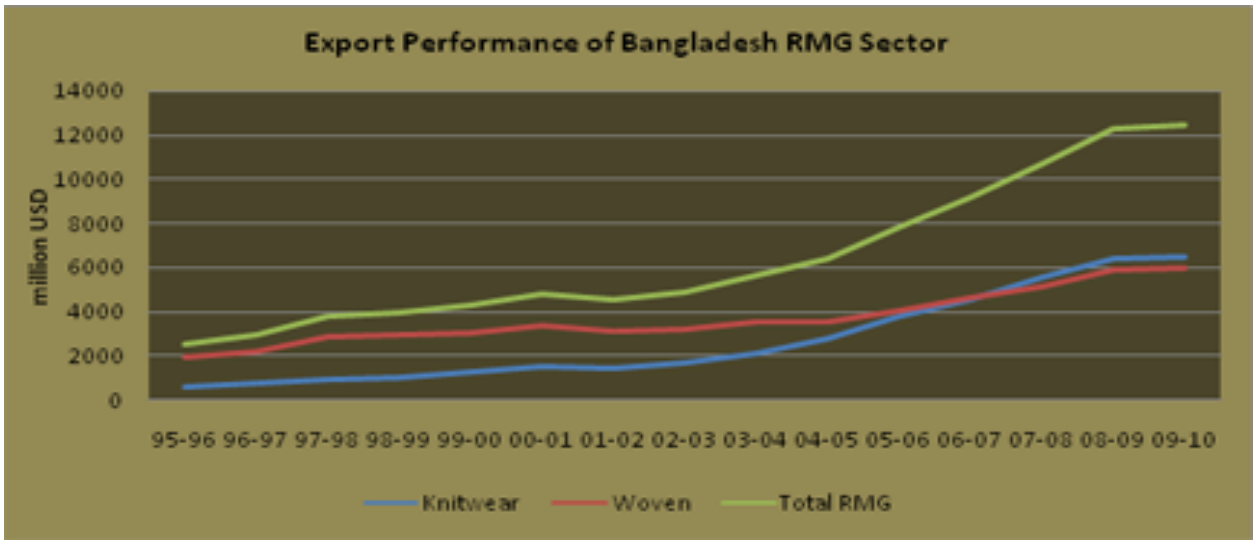

Figure 1.1 Export Performance of Bangladesh RMG Sector.

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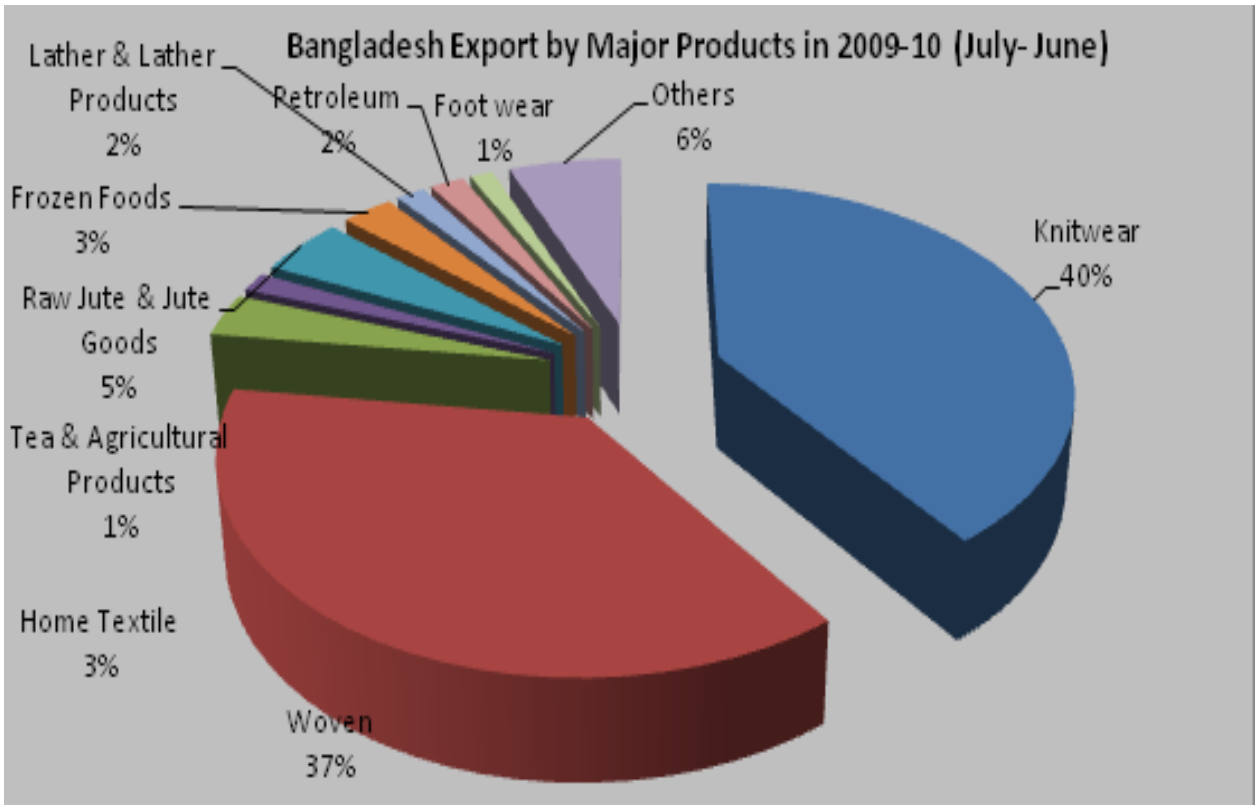


Figure 1.2 Bangladesh Export by Major Products in 2009-2010(July-June).

This is the rejuvenated beginning of the epic story of Bangladeshi knitwear sector that in true sense has been possible due to massive industrialization in a sustainable way with effect on all probable human development aspects which is the encouraging part of the story.

The growth of knitwear sector is increasing at an increasing rate. The cumulative average growth rate of the sector is 20%. And it is continuously grabbing more portions in the export pie of Bangladesh. This is mainly attributed to the facilities provided under the EC GSP and ROO. The knitwear sector is heavily driven by the favorable policies and took the opportunity to develop a strong backward linkage for the sector.

Comparative Statistics Of Knit Wear & Woven Wear (Volume In Million Us$):

Year	Knitwear			Woven Wear			Total Export	
	Volume	(%) Change	Share(%) in BD Export	Volume	(%) Change	Share(%) in BD Export	RMG	Bangladesh

89-90	14.84	0	0.77	609.32	29.34	31.67	624.16	1923.70
90-91	131.20	784.00	7.64	735.62	20.73	42.83	866.82	1717.55
91-92	118.57	-9.62	5.95	1064.00	44.64	53.36	1182.57	1993.90
92-93	204.55	72.51	8.58	1240.48	16.59	52.06	1445.03	2382.89
93-94	264.14	29.13	10.42	1291.64	4.12	50.97	1555.78	2533.90
94-95	393.26	48.88	11.32	1835.09	42.07	52.85	2228.35	3472.56
95-96	598.32	52.14	15.41	1948.81	6.20	50.20	2547.13	3882.42
96-97	763.30	27.57	17.28	2237.95	14.84	50.65	3001.25	4418.28
97-98	940.31	23.19	18.22	2843.33	27.05	55.09	3783.64	5161.20
98-99	1035.36	10.11	19.49	2984.81	4.98	56.18	4020.17	5312.86
99-00	1269.83	22.64	22.08	3082.56	3.27	53.59	4352.39	5752.20
00-01	1496.23	17.83	23.14	3364.20	9.14	52.02	4860.43	6467.30
01-02	1459.24	-2.48	24.38	3124.56	-7.12	52.20	4583.80	5986.09
02-03	1653.83	13.34	25.26	3258.27	4.28	49.76	4912.10	6548.44
03-04	2148.02	29.88	28.25	3538.07	8.59	46.54	5686.09	7602.99
04-05	2819.47	31.26	32.58	3598.20	1.70	41.58	6417.67	8654.52
05-06	3816.98	35.38	36.26	4083.82	13.50	38.78	7900.80	10526.16
06-07	4553.60	19.30	37.39	4657.63	14.05	38.25	9211.23	12177.86
07-08	5532.52	21.50	34.58	5167.28	10.94	32.30	10699.80	14110.79
08-09	6429.00	16.20	41.30	5918.51	14.54	38.02	12347.51	15565.19
09-10	6483.29	0.84	40.01	6013.43	1.60	37.11	12496.72	16204.65

Source: Export Promotion Bureau (**Table 1.1 Comparative Statistics of Knit Wear & Woven Wear)**

CHAPTER 2: MERCHENDISING

The professional program in woven merchandising is designed for people who have already earned their first degree and are interested to build a career in any of the functional areas related to the clothing industry: Merchandising, Pattern & Design, Production, Quality and Social Compliance.

In this professional program we are able to specialize in chosen areas to meet the demands of their workplace or pursue their interest in consultation with academic advisors. We are prepared for careers as Quality Assurance Manager, Product Development Manager, Supply Chain

Manager, Merchandiser, Industrial Engineer, Production Manager, Factory Manager and Compliance Manager.
We can improve our knowledge, skill, and efficiency and finally to build up the confidence of the participants in merchandising to meet the challenges in the quota frees global apparel business. The participants will aware of high standard merchandising process and motivate to practice their professional education regarding apparel business in their real life situation.

2.1 MAIN FUNCTION OF MERCHANDISING:

- Merchandisers work very closely with Buyers and determine range of goods to be sold.
- When to buy them.
- Their price.
- How they will be presented.
- Merchandiser responsible for range of merchandise, contents, price and give policy guidelines to Buyer.
- Merchandiser could be responsible for promotion, display, sales forecast and stock levels.

2.2 GARMENTS MERCHANDISING:

The merchandising which is related with garments is called garments merchandising. A garments merchandiser main term is to buy necessary raw materials such as fabric, accessories, etc. and then made garments by those products and sell those garments.

The aim of merchandiser is to sell the garments at more valuable price than the total cost of fabric, accessories, others things, the labor cost, rent of factory, etc.
The men who are involves with Garments sector all of them are mostly known about the term merchandiser. The term of Merchandising carries a huge importance for a garments factory because on a merchandiser the whole profit or losses are depending. Because a silly mistake by him can be million dollar loss.
Merchandising is an English word. From the word Merchandiser Merchandising is coming. The meaning of the word is to sell and buy the product means to buy products and after that sell the products to achieve profit. Merchandising is the total basic concept of Textile.
One definition of Merchandising is a marketing practice in which the brand or image from one product or service is used to sell another.
Merchandising, as commonly used in Marketing also means the promotion of merchandise sales, as by coordinating production and marketing and developing advertising, display, and sales strategies to increase retail sales. This includes disciplines in pricing and discounting, physical presentation of products and displays, and the decisions about which products should be presented to which customers at what time.

2.3 WOVEN GARMENTS MERCHANDISING GENEGALLY INCLUDES THE FOLLOWING ACTIVITIES:

1. Getting an order of a particular garment

2. buying raw materials & accessories
3. Producing garments
4. maintaining required quality level
5. Exporting the garments within schedule time

2.4 WHAT WAS DONE BY THE MERCHANDISER DURING WOVEN GARMENTS MERCHANDISING?

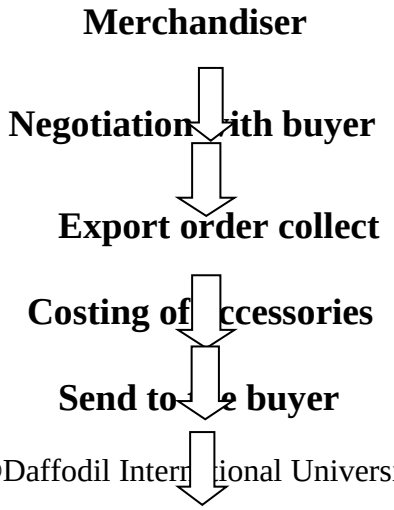
- Receive tech pack & quotation from buyer.
- Check consumption of fabric & trims.
- Prepare price quotation and send to buyer.
- Send development / LA sample as per GAP standard procedure & requirement.
- Negotiate labels, lining, fabric and metal items price after order confirmation.
- Booking of Fabric, Trims & Accessories.
- Receive Proforma Invoice / Sales Order from supplier & sign back the same to supplier for their bulk production proceeding confirmation.
- Follow up L/C opening and receiving.
- Settlement of claim issues for fabric and trims.
- Make T&A, CPS and update within 15 days.
- Update & follow up order information with planning department.
- Send sample (JSS, RE, AD, PP, GPT, SEALER/TECHNICAL TOP & TOP) to buyer for approval & follow up.
- Ensure bulk fabric & trims all are in house.
- Send trims swatch cards to buyer for approval.
- Prepare order file for buyer QA.
- Make executive summary sheet & order sheet a factory requirement.
- Make destination wise vessel summary.
- Attend PP meeting to start production.
- Develop shade band and submit to buyer for approval & follow up.

- Follow up safety issues.
- Attend day to day production affairs.
- Work in process update to buyer.
- Send Top of the Production (TOP) sample to buyer for approval & follow up.
- Make EDI & provide to factory.
- Prepare inspection schedule.
- Follow up final inspection status.
- Receive Inspection Certificate (IC) copy from buyer QA & send the same to commercial (Export) department for further proceeding.
- Vessel booking in E-sps for shipment.
- Prepare closing summary.

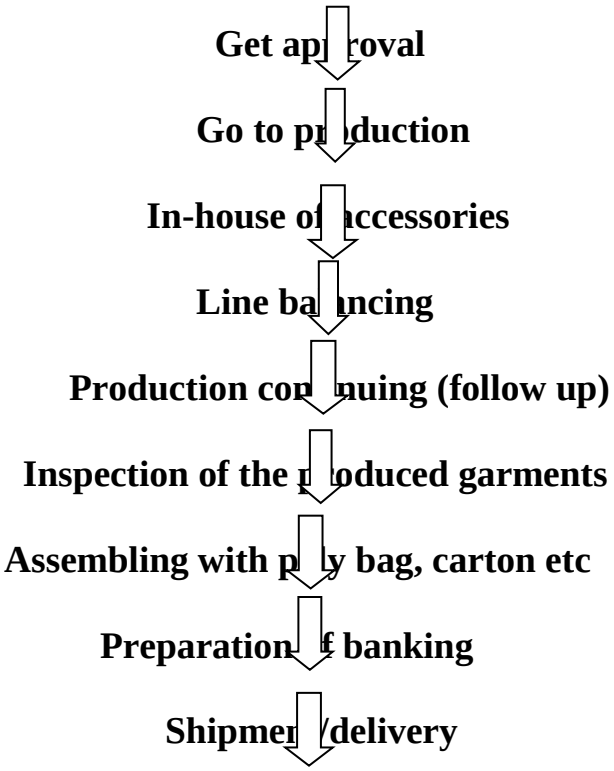
A merchandiser always should have a mentality to impress the buyers by means of:

- Right Product.
- Right Qualities.
- Right Quantities.
- Right Time.

2.5 PROCESS FLOW CHART OF MERCHANDISING:



If ok then sample making (according to buyer requirement)



2.6 AFTER GETTING AN ORDER THE MERCHANDISER SHOULD HAVE TO DO:

- Fabric requirement calculations.
- Accessories requirement calculations (thread, button, interlining, label, poly bag, carton etc.)
- Sourcing of accessories.
- Possible date of arrival of fabrics and accessories in the garments factory.
- Costing.
- Garments production planning.
- Pre-shipment inspection schedule.
- Shipping documents.

All the main functions, mentioned above are important but the procurement of fabric and accessories are most important as because there are many technical parameters involved in specification in this area. In most collection of fabric for the garments to be made is a major problem.

CHAPTER-3: GARMENTS MERCHANDISING MANUAL

To be a merchandiser he must be known some common term and also get general knowledge the terms are given below briefly:

3.1 IMPORTENT TERMS :

- **Textile Export Control**

Allocation of quota, Textile Export Licenses & Quota Classification

- **Regulations**

Australia, New Zealand, Canada, European Union, Finland, Germany, Mexico, Netherlands, Sweden, UK, & USA.

- **Trade Terms**

Transport terms, shipping terms, Terms of trade & Terms of payment.

- **Inspection *System***

Fabric Inspection & Garment Inspection.

- **Testing Method**

Abrasion resistance, Bursting strength, Color fastness, Dimensional stability, Flammability, Seam strength/slippage, Tear strength & Tensile strength.

- **Size Measurement or Bom(Bill of Materials)**

Boxers, Pajama Bottom, Jeans, Pants, Short, Skirt, Blazer, Coat, Jacket, Vest, Dress, Pajama Top, Gown, Sleep shirt, Woven Shirt, Blouse, Woven Shirt, Blouse, Knit Top & Sweater.

- ***Care labeling systems***

American care labeling system, Australian care labeling system, International care labeling system, Japanese care labeling system & Canadian care labeling system.

- **Fabric Defects**

Woven fabric & Knitted fabrics.

- **Garment Types**

Boxers, pajamas, jeans, blazer, coat, jacket, vest, dress, gown, sleep shirt, woven shirt, blouse, knit top & sweater

- **Type of Fibers**

Natural & Man-made

- **Type of fabrics**

Woven, Knitted & Non-woven

- ***Manufacturing Terms***

Aids, Tools & Equipment, Types of attachment, Types of fastening, Types of seams & Types of stitches.

- **Garments Manufacturing Process**

Men's Tunic shirt, Men's trousers, Jeans, Women's blouse, Dress, Skirt, T-shirt & Fully Fashioned yarn-dyed sweater.

- **Garment Types**

  Dress, Jacket, Pants, Sweater, Underwear, Suits, Swimwear, Coats, Shorts, Vest/waistcoat, Pajamas, Shirt & Skirt.

- **Garment Parts**

Necklines, Collars, Knitted collars, Shirt collars, Shirt collars, Sleeves, Cuffs, Lapels, Pocket

- **Dyeing, Printing & Finishing**

Dyeing, Printing, Finishing & Environmental Issues

- ***Size Labeling system***

Japan, US, Germany & UK

- **Calculation**

Garment Costing, Freight & Conversion table.

3.2 TEXTILE EXPORT CONTROL:

According to the legal framework for the textiles export control system, all textile exports and re-exports from Any countries must be covered by valid export licenses issued by the Director-General of Trade.
There are four types of textiles export licenses which are commonly used:

1. Export License (Textiles) Form 4 (TIG 353): commonly known as "white" license used for the export of
    i. re-export goods
    ii. samples
    iii. textile products not subject to quota restraint
    iv. unaccompanied personal effects
    v. bona fide gifts

2. Export license (Textiles) Form 5 (TIG 353A): commonly known as "blue" or "quota" license used to cover export of textiles subject to specific quota restraint, other than export to the USA under quota.
3. Export License (Textiles) Form 8 (TRA 534): "quota" license to cover export to the USA.
4. Special Export Licenses 8a (TRA 534A) and 8d (TRA 534D):
5. Normally an export license is valid for 28 days from the date of issue or until the end of the restraint period, whichever is earlier. For EU, export licenses valid for 3 months may be issued on special request. Export licenses are not transferable.

3.3 COUNTRY OF ORIGIN :

A Certificate of Hong Kong Origin (CO) is to certify that the goods concerned are of Bangladesh origin. A CO is normally applied to facilitate customs clearance of consignments in the importing countries. Export license applications for restrained textiles exported to the United States (with some exclusions), the EU.
A CO is issued only when it has been established that the goods are the natural produce of Bangladesh or the product of a manufacturing process which has changed permanently and substantially the shape, nature, form or utility of the basic materials used in manufacture. There are specific origin criteria applicable to individual types of products manufactured in Bangladesh, and specific conditions to the CO rules covering exports of certain products to certain markets.

3.4 TRANSPORT TERMS:

Bill Of Lading (BIL), Combined Transport Bill of Lading, Group age Bill of Lading / House Bill of Lading, Negotiable Bill of Lading, Non –Negotiable Bill of Lading, On Board Bill of Lading, Stale Bill of Lading, Third Party Bill of Lading, Through Bill of Lading, Unclean Bill of Lading, House Airway bill, Master Airway bill.

SHIPING TERMS:

Consignee, FCL (full container load), LCL (less container load), Shipper, Shipping Marks, Garment on Hangers (GOH), Flat Packed Container (FPC)

TERMS OF TRADE:

C&F (cost and freight), CIF (cost, insurance, freight), CM, CMQ, CMT, CMTQ, Ex-Ship, EXW (ex- works) / Ex-Factory, FOB, FOB Airport (FOA), Landed Duty Paid (LDP)/ Delivered Duty Paid (DDP), Certificate of Origin, Export License, Packing List.

TERMS OF PAYMENT:

Document against Acceptance (D/A), Documents Against Payment (D/P), Open Account, Letter of Credit (L/C), Commercial Invoice.

3.5 BILL OF LADING :

It is a major document if the goods are dispatched by sea.

The document represents:

1. A formal receipt for the goods
2. The evidence of the contract of carriage of the goods between the shipper of the goods and the shipping company
3. The document of title to the goods

A bill of lading may include the following details:

- Description of the goods in general terms not inconsistent with that in the letter of credit
- Identifying marks and numbers, if any
- The name of the carrying vessel
- Evidence that the goods have been loaded on board

- The ports of shipment and discharge
- The names of shipper, consignee (if not made out "to order"), and name and address of the "notifies" party if any
- Whether freight has been paid in advance or is payable at destination
- The number of original bills of lading issued
- The date of issue
- The departure date of carrying vessel or aircraft

3.6 TYPES OF BILL OF LADING:

Combined Transport Bill of Lading

A bill of lading covering carriage by a combination of transport movements where the carrier issuing the bill undertakes responsibility for the goods from a point or place of receipt to a point or place named in the bill of lading. This document is also commonly called a "container bill of lading" as it is issued by container companies and their agents.

Negotiable Bill of Lading

The bill of lading is consigned to "the order" of the shipper, and blank endorsed on the back to the order of the bank which issues the letter of credit for the buyer.

Non -Negotiable Bill of Lading

The document is consigned to a specific party and delivery by the carrier is to the consignee only. The consignee must produce an original bill of lading in order to take delivery of the goods.

On Board Bill of Lading

The document confirms that the goods have been loaded on board for shipment, validated by the shipper confirming the name of the vessel and the date of boarding. This document is always requested by the bank unless otherwise stipulated in the letter of credit.

Stale Bill of Lading

The bill of lading is tendered to the negotiating bank at so late a date after sailing that the negotiating bank could not negotiate the documentary letter of credit before arrival of the goods at the port of destination.

Third Party Bill of Lading

This is a bill of lading that does not show the shipper as the beneficiary of the shipment but rather that the goods are consigned to a third party. Unless expressly prohibited in the terms of the letter of credit, this type of bill of lading is commonly accepted for negotiation by the banks.

Through Bill of Lading

This is an ordinary bill of lading with the exception that it indicates that the cargo will be unload at a port of discharge and then carried to a final destination by another sea carrier. The through bill of lading can also be used for transfers, transshipments, relays, or more than one mode of transport, similar to a combined transport bill of lading.

Unclean Bill of Lading

A bill of lading that bears a superimposed clause or statement expressing reservations about the condition of the goods or packing. If such remarks are shown on a bill of lading, the document will be treated as "unclean" or "caused" and considered a discrepancy by the banks.

House Airway bill

A master airway bill covers the whole shipment; a house airway bill is a receipt issued by a forwarder to each separate customer for his shipment in a single airway bill.

3.7 SHIPPING TERM:

Consignee

The person whose name appears on the bill of lading or airway bill as the party to whom the goods are to be delivered by the carrier.

FCL (full container load)

A fully loaded container which may be in weight or cubic measurement terms, contracted by one shipper, and conveyed to one consignee and to one destination.

LCL (less container load)

A consignment of cargo which does not fill a full container, grouped with other consignments for the same destination.

Shipper

This is the person whose name appears on the bill of lading or airway bill as the party who has contracted the carrier to dispatch the goods.

Shipping Marks

These are marks essential to identifying cargo and linking that cargo with specific documents. Because these marks are important as identifiers, the marks and numbers should be as simple as possible. Shipping marks include the abbreviated name of buyer, reference number, destination, package number, and container number (if applicable).

Garment on Hangers (GOH)

The garments are packed into the container on hangers.

Flat Packed

The goods are packed into cartons.

3.8 TERMS OF TRADE:

C&F (cost and freight)

The seller/supplier agrees to contract the freight and pay "cost and freight" for loading the goods, cleared for export, on board a vessel and the charges to ship the goods to destination. The buyer bears the risk of the goods from the time they pass the ship's rail at the port of shipment and pay for the insurance coverage, and for the unloading costs at the port of destination.

CIF (cost, insurance, freight)

The seller's price includes all charges, freight and insurance up to the point where the ship carrying the goods arrives at the port of destination; the goods must be cleared for export by the seller. From that point the buyer has to bear all charges and risks, including unloading costs.

CM

This refers to the manufacturing cost and this term means "cut and make". The buyer supplies all the materials to the manufacturer.

CMQ

This term means "cut, make and quota" and is similar to 'CM' except that the manufacturer has to supply the quota as well.

CMT

The term means "cut, make and trim". The buyer provides the fabric, and the supplier makes the garments.

CMTQ

The term means "cut, make, trim and quota". The buyer has to provide the fabric and the manufacturer makes the garments as well as provides the quota.

Ex-Ship

The supplier is responsible for all costs incurred until the ship reaches the port of destination where the supplier delivers the documents and the buyer can clear the goods on board the ship. The buyer bears all risks and costs from that point including unloading charges.

EXW (ex- works) / Ex-Factory

The supplier delivers the goods to the buyer at his premises, i.e., factory, warehouse, etc. He has the minimum responsibility and does not have to provide minimum documentation unless upon specific request. The buyer bears all costs and risks involved upon delivery of the goods until the desired destination.

FOB

This term means "Free On Board". The supplier is responsible for all charges (including export licenses, export taxes, etc.) and risks until the goods have passed over the ship's rail at the port of shipment; the merchandise must be cleared for export. The buyer contracts and pays for the freight and bears all risks for loss or damage to the goods as soon as the merchandise passes the ship's rail. The buyer also pays for all import duties and clears the goods through customs at the point of destination.

FOB Airport (FOA)

This is similar to the term FOB except that the mode of transportation is an air carrier. The supplier fulfills his obligations after he has delivered the goods to the air carrier. The goods must be cleared for export by the supplier.

Landed Duty Paid (LDP)/ Delivered Duty Paid (DDP)

The seller fulfills his obligation to deliver when the goods have been made available at the named place in the country of importation. The seller bears the risks and costs, including duties, taxes and other charges of delivering the goods thereto, cleared for importation. Under these terms, the seller bears the maximum responsibility, and in this case, the seller has to clear the goods both for export and import.

Certificate of Origin

A certificate of origin (CO) is issued when it has been established that the goods are the natural produce of Bangladesh or the product of a manufacturing process in another country which has changed permanently and substantially the shape, nature, form or utility of the basic materials used in manufacture. There are specific origin criteria applicable to individual types of products manufactured in Bangladesh. There are organizations in our country authorized to issue the certificate, namely the Trade Department, the General Chamber of Commerce, the of Commerce of Bangladesh.

3.9 PACKING LIST:

This is a document that indicates the contents of each individual carton/ package in the container. The packing list includes the cubic measurement of the cartons/package, the weight, the number of cartons/packages, the breakdown of the goods by size/color/quantity. This document is prepared by the seller or the ship-owner, and the buyer can specify which information should be included.

3.10 TERMS OF PAYMENT:

Document Against Acceptance (D/A)

The buyer is allowed to make payment for the goods on credit, as agreed between him and the seller. Payment for the merchandise is commonly 60 or 90 days after acceptance of documents. The buyer gains the advantage of not having to pay for the goods for a period of time after accepting the documents. The supplier bears some risk because he will not receive payment until a specified period after the documents and titles to the merchandise have been accepted.

Documents Against Payment (D/P)

The supplier agrees to release any documents referring to the transfer of title for the merchandise upon payment. Since the goods are produced and shipped before the supplier tenders the required documents for payment, there is some risk to the supplier for demurrage charges if the buyer does not accept the documents and title to the goods.

Open Account

This method of payment does not involve the services of a bank, but is based upon an agreement between the supplier and the buyer. The buyer has no legal obligation to pay the supplier and payment is normally made directly to the supplier. The supplier bears some risks as the goods and documents are usually delivered to the buyer before payment is made.

Letter of Credit (L/C)

A letter of credit (also known as documentary credit) is a document issued by a bank on behalf of an applicant (the buyer) undertaking to make payment to a beneficiary (the seller) up to a stated amount of money, within a prescribed time limit and against stipulated documents.

There are usually two banks involved in a letter of credit operation. The issuing bank is the bank of the buyer and issues the credit; the advising bank, usually located in the seller's country, is the bank through which the advising bank sends the credit to the beneficiary.

3.11 TYPES OF CREDIT:

There are three common types of credit: revocable, irrevocable, and irrevocable and confirmed

Revocable credit: this type of credit can be amended or cancelled by the applicant without any prior warning or notice to the beneficiary. More risks are involved for the seller (the beneficiary) as he will then have to deal directly with the buyer to obtain payment. However the buyer has more flexibility.

Irrevocable credit: this type of credit can be amended or cancelled only with the agreement of all parties concerned. It also represents a definite undertaking by the issuing bank to pay provided that the stipulated documents are presented and that the terms and conditions of the credit are complied with.

Irrevocable and confirmed credit: this type of credit involves the undertaking of the advising bank in addition to that of the issuing bank; it means that the issuing bank requests a second bank to add its own confirmation to the credit so that the confirming bank is responsible to make payment if the issuing bank fails to pay the beneficiary.

A letter of credit should usually stipulate a requirement for the following documents:

Bill of lading.
Copy of the certificate of origin.
Commercial invoice.
Export license.

Packing list.

Commercial Invoice

A commercial invoice is a business document which records the sale of goods or services between two parties, and by which the seller informs the buyer of the amount to be paid for the goods. Usually, the original and four copies are stipulated in the L/C.

A commercial invoice normally includes the following information:

Date and authorized signature
The correct name and address of both buyer and seller (or the name of the consignee if the goods are not consigned to buyer)
A detailed description of the merchandise purchased strictly corresponding with the description given in the letter of credit, along with quantity, unit price, and total price, all deductions and additional charges included in the price
Weight of the goods, number of packages, any identifying shipping marks, any import license number, contract number or any other details requested and stipulated in the L/C
Terms of delivery and payment (FOB, CIF, C&F)
The name of the issuing bank and the letter of credit number
The port of entry for which the merchandise is destined
The type of currency and rate of exchange

3.12 TESTING METHOD:

When an article is produced, it has to be suitable for its end-uses - it must conform to a set of specifications that have been laid down for it. Quality in textile products can thus be defined as the extent to which an article conforms to its specifications.
For example, a shirt should not only be attractive and fit, but should also possess quality criteria such as shape retention after washing, resistance to color fading, or lasting wear. A method to evaluate the textile products relative to these quality aspects is to conduct tests that simulate actual wear conditions. This is done by taking a sample of the material and testing it (for example, by extending or tearing it) using various instruments. Experiments are conducted by research organizations, government standards institutions, consumer organizations, and textile buying offices to evaluate the quality of textile articles, and establish minimum performance requirements.

Abrasion resistance
The abrasion of a fabric is the rubbing away of its fibers and yams. The ability of a fabric to resist abrasion can be tested in a number of ways. One way is by the 'flexing and abrasion method' which can be used for all fabrics except floor coverings. Using a flex abrasion tester, a sample of predetermined dimensions is pulled and rubbed in continuous cycles until it breaks. Its abrasion resistance is determined by the load applied by the tester, and the number of cycles taken to break the sample. Visual inspection of the abrasion is also made. The 'Martindale Tester' is also well known. In this apparatus, the sample fabric is rubbed against a standard fabric until it wears through.
[International testing standards: Martindale - BS 5690, JIS L-1096, Accelerator - JIS L-1096 (woven), JIS L-1018 (knit). AATCC 93]

Bursting strength
Some fabrics, especially knitted ones, are stressed in many directions at one time. The bursting strength of a knitted fabric is the ability of the material to resist rupture by pressure. To test the bursting strength of such fabrics, a hydraulic bursting strength tester can be used. A fabric sample is clamped over a thin flexible diaphragm, which expands as the pressure increases. The fabric eventually bursts, and the pressure gauge reading gives a measure of the bursting strength of the fabric.
[International testing standards: ASTM D3786, BS 4768, ISO 2360, JIS L-1096]

Color fastness

An important property of fabric is its color fastness or ability to keep its original color. To assess the amount of color change or staining that takes place in a fabric, 'grey scales' are used. The grey scale for assessing color change rates the results of a test from class 1 (poor, substantial change of color) to class 5 (excellent, no change in original color). Similarly, the grey scale for assessing staining rates the results from class 1 (heavy staining) to class 5 (no staining).

There are different types of color fastness which need to be tested as the color of a fabric can be affected by a variety of factors.

Dimensional stability

The dimensional stability test is designed to show how well a fabric keeps its shape after washing, Washing usually results in shrinkage, although some fabrics can expand, or gain, after washing, For this test, the washing time and temperature, drying procedure and restoration technique (such as ironing) are all specified, and options are available. The sample is measured in both the warp and weft directions (or Wales and courses for knitted fabrics).

Flammability

It is important to know both whether a fabric will bum or not, and, if it does, how quickly the flame will spread through it. The flammability testing procedure therefore determines both whether a fabric will ignite and the time that it takes to bum. Standardized conditions are applied including the size of the sample, the flame length used, and the timing of the test. The fabric sample is first placed in an oven at about 105° C for 30 minutes, then put in a flammability tester where a flame is applied and the result observed. The fabric is then classified according to whether it burned, and if so, how long the flame took to spread.

[International testing standards: General Clothing Textiles - ASTM D1230, US CPSC CFR 16 Part 1610, Canadian Hazardous Products Act, UK Flammability BS 5438]

Seam strength/slippage

The seam slippage of a woven fabric refers to the ability of a seam to withstand forces trying to pull it apart. A strip of fabric is folded and stitched across the width of the seam. A load is then applied to the strip at right angles to the seam using 'grab-test' jaws, and the extent to which the seam opens is measured. The seam strength is recorded as the seam breaks under test conditions. The measuring equipment gradually increases the axial load on the sample (the load applied depends on the testing requirements) and the width of the seam opening at its widest place is measured to determine the seam slippage.

[International testing standard: ASTM D1683, ASTM D434, JIS L-1093/ 1096, BS 3320]

Tear strength

This term means the force required expressed in units of weight to tear a fabric. A fabric sample of standard dimensions (according to the testing requirements) has a slit cut into it. The testing apparatus then measures the work done in tearing a fixed distance through the cloth. The 'Elmendorf' is a popular tearing tester.

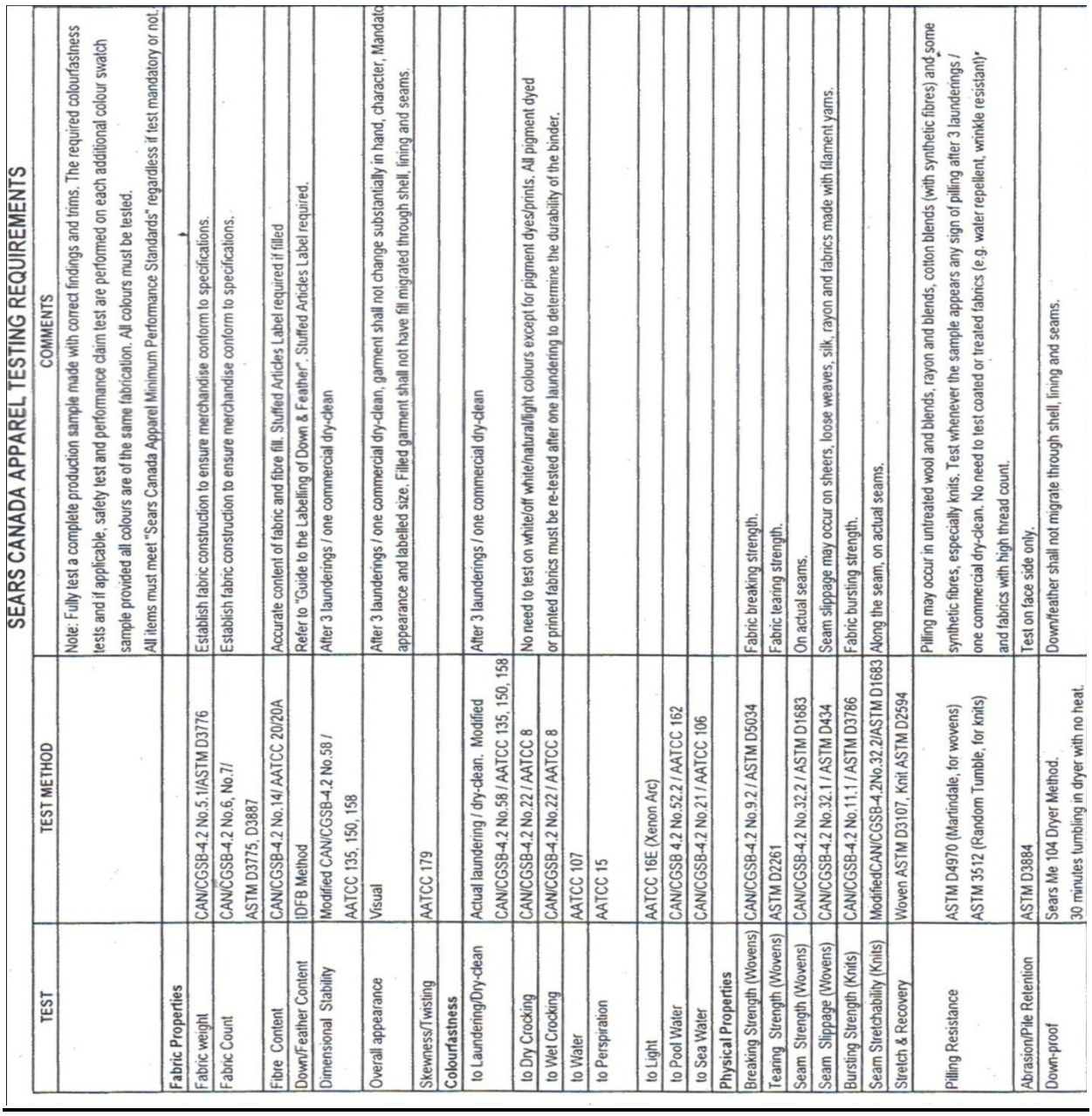
[International testing standards: Elmendorf - ASTM D1424, JIS L-1096 Tongue Tear (single/ double) - ASTM D226 1, JIS L- 1096, Wing-Rip - BS 4303]

Tensile strength

This term refers to the breaking load or force, expressed in units of weight, required to break or rupture a specimen. A number of methods can be used to test the tensile strength of a textile sample such as fiber, yarn or cloth. The sample is clamped between two sets of jaws, a force or load is applied to it until it ruptures and the average breaking load is recorded in the 'Strip Test', and the 'Grab Test'.

[International testing standards: One-inch Grab - ASTM C5034, ISO 5082, JIS L-1096, Strip Test - ASTM D1682, ISO 5081, BS 2576, JIS L- 1096]

Below a buyer sears Canada testing requirement is given:



SEARS CANADA APPAREL TESTING REQUIREMENTS

TEST	TEST METHOD	COMMENTS
		Note: Fully test a complete production sample made with correct findings and trims. The required colourfastness tests and if applicable, safety test and performance claim test are performed on each additional colour swatch sample provided all colours are of the same fabrication. All colours must be tested. All items must meet "Sears Canada Apparel Minimum Performance Standards" regardless if test mandatory or not.
Fabric Properties		
Fabric weight	CAN/CGSB-4.2 No.5.1/ASTM D3776	Establish fabric construction to ensure merchandise conform to specifications.
Fabric Count	CAN/CGSB-4.2 No.6, No.7/ ASTM D3775, D3887	Establish fabric construction to ensure merchandise conform to specifications.
Fibre Content	CAN/CGSB-4.2 No.14/ AATCC 20/20A	Accurate content of fabric and fibre fill. Stuffed Articles Label required if filled
Down/Feather Content	IDFB Method	Refer to "Guide to the Labelling of Down & Feather". Stuffed Articles Label required.
Dimensional Stability	Modified CAN/CGSB-4.2 No.58 / AATCC 135, 150, 158	After 3 launderings / one commercial dry-clean
Overall appearance	Visual	After 3 launderings / one commercial dry-clean, garment shall not change substantially in hand, character, Mandato appearance and labelled size. Filled garment shall not have fill migrated through shell, lining and seams.
Skewness/Twisting	AATCC 179	
Colourfastness		
to Laundering/Dry-clean	Actual laundering / dry-clean. Modified CAN/CGSB-4.2 No.58 / AATCC 135, 150, 158	After 3 launderings / one commercial dry-clean
to Dry Crocking	CAN/CGSB-4.2 No.22 / AATCC 8	No need to test on white/off white/natural/light colours except for pigment dyes/prints. All pigment dyed
to Wet Crocking	CAN/CGSB-4.2 No.22 / AATCC 8	or printed fabrics must be re-tested after one laundering to determine the durability of the binder.
to Water	AATCC 107	
to Perspiration	AATCC 15	
to Light	AATCC 16E (Xenon Arc)	
to Pool Water	CAN/CGSB 4.2 No.52.2 / AATCC 162	
to Sea Water	CAN/CGSB-4.2 No.21 / AATCC 106	
Physical Properties		
Breaking Strength (Wovens)	CAN/CGSB-4.2 No.9.2 / ASTM D5034	Fabric breaking strength.
Tearing Strength (Wovens)	ASTM D2261	Fabric tearing strength.
Seam Strength (Wovens)	CAN/CGSB-4.2 No.32.2 / ASTM D1683	On actual seams.
Seam Slippage (Wovens)	CAN/CGSB-4.2 No.32.1 / ASTM D434	Seam slippage may occur on sheers, loose weaves, silk, rayon and fabrics made with filament yarns.
Bursting Strength (Knits)	CAN/CGSB-4.2 No.11.1 / ASTM D3786	Fabric bursting strength.
Seam Stretchability (Knits)	ModifiedCAN/CGSB-4.2No.32.2/ASTM D1683	Along the seam, on actual seams.
Stretch & Recovery	Woven ASTM D3107, Knit ASTM D2594	
Pilling Resistance	ASTM D4970 (Martindale, for wovens) ASTM 3512 (Random Tumble, for knits)	Pilling may occur in untreated wool and blends, rayon and blends, cotton blends (with synthetic fibres) and some synthetic fibres, especially knits. Test whenever the sample appears any sign of pilling after 3 launderings / one commercial dry-clean. No need to test coated or treated fabrics (e.g. water repellent, wrinkle resistant)" and fabrics with high thread count.
Abrasion/Pile Retention	ASTM D3884	Test on face side only.
Down-proof	Sears Me 104 Dryer Method. 30 minutes tumbling in dryer with no heat.	Down/feather shall not migrate through shell, lining and seams.

Figure 3.1: Apparel Testing Requirements (sears Canada)

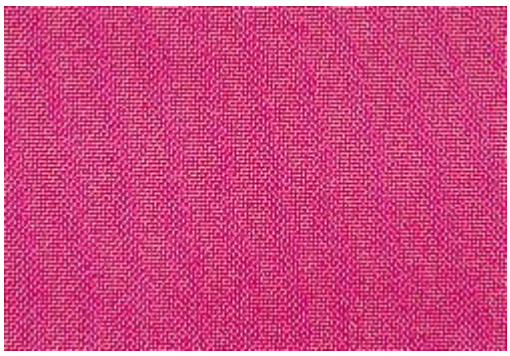
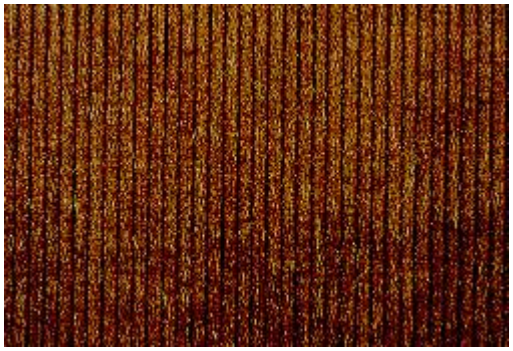
SEARS CANADA APPAREL TESTING REQUIREMENTS

TEST	TEST METHOD	COMMENTS
Performance Claims		
Water Repellency	Spray Test AATCC 22, CAN/CGSB-4.2 No.26.2	After 3 launderings / one commercial dry-clean
Water Resistance	Impact Penetration Test, AATCC 42 or Rain Test, AATCC 35	After 3 launderings / one commercial dry-clean
Waterproof	Hydrostatic Pressure Test AATCC 127	Original & After 3 launderings / one commercial dry-clean Fabric & seams (especially joint seams), remain 1 hour at 50 cm height. Min. 4.0 (3 drops or less).
Wrinkle Resistant	CAN/CGSB-4.2 No.59.1/2/3, AATCC 143	100% cotton and cotton predominated blends. After 3 launderings / one commercial dry-clean. Evaluate fabric smoothness, seams appearance and if applicable, crease retention. To claim "non-ironing", collar, placket, cuff and armholes, etc. need bonded with interlining.
Stain Resistant / Repellent Oil Repellency Water Repellency	AATCC 118 DuPont Method	After 3 launderings / one commercial dry-clean
Stain Release	AATCC 130 (Oily Stain Release)	After 3 launderings / one commercial dry-clean
Water Wicking	BV S1038	After 3 launderings / one commercial dry-clean
Safety and Others		
Flammability - Children's Sleepwear 45° Angle Vertical	ASTM D1230 SOR 87:-447; SOR :91-357	Articles regulated by "Hazardous Products Act" must comply with the Act. Styling will dictate if performing "45°" or "Vertical" test on children's sleepwear. Refer to Sears Canada "Children's Sleepwear Flammability Requirements" based on Health Canada "Children's Sleepwear: Flammability Requirement Guidelines".
Flammability - General 45° Angle	ASTM D1230	Articles regulated by "Hazardous Products Act" must comply with the Act.
Snap Attachment Strength	BV S1044	Refer to Sears Canada "Product Quality Standards Policy for Findings and Attachments",
Attachment Strength	BV S1023	Children's wear Min. 15 lbs..10 sec.
pH Value	AATCC 81	
Formaldehyde	AATCC 112	
Zipper Test	ASTM D2061	Refer to Sears Canada "Minimum Performance Requirements for Zippers".

D817L Textile Laboratory, March 18, 2009. Version 5. COPYRIGHT©Sears Canada Inc.

Figure 3.2: Apparel Testing Requirements (sears Canada)

3.13Types of Fabrics:

NAME OF FABRICS	EXAMPLES
Chiffon A very lightweight, sheer silk or manufactured filament fabric made in a plain weave with fine, hard spun yam of approximately the same size of warp and weft and the number of ends and picks per inch. **End uses:** Ladies' evening wear, dresses and scarves	 113 X 95 70D X 70D
Corduroy A kind of cut-pile fabric with plain woven base. **End uses:** Trousers, jackets, suits	 64 X 128 12 X 16
Duck A broad term for wide range of strong, firm, plain weave fabrics made of cotton, linen or blends with man-made fibers. Different types of duck include those with single warp and single weft, double warp and single weft, and double warp and double weft. Canvas and duck are sometimes used interchangeably, but canvas often refers to heavier construction. **End uses:** Trousers, belting, sail cloth, canvas	 70 X 40 10// X 10//

eorgette sheer, lightweight, plain weave silk or man-made fiber fabric with a fine crepe surface; double S- and double Z-hard twist yarns are used alternatively both in warp and weft. **End uses:** Women's wear	 192 X 93 75D X 75D
Poplin A durable, closely woven fabric having fine cross ribs produced by employing warp yarns that are finer than weft yarns, and/or with two or three times as many ends per inch as picks. Similar to broadcloth but with heavier rib and heavier weight. **End uses:** Men's shirts, trousers, nurse uniforms, dresses and curtains	 133 X 72 40 X 40
Oxford A soft, porous, lustrous, light to heavy weight fabric with two fine warp threads and one weft yam. **End uses:** Men's and women shirts, sportswear and dresses	 100 X 50 40// X 21/ 2

Denim A medium to heavy fabric made of coarse, hard twist cotton warp yams dyed in many plain colors crossed with white weft. **End uses:** Workmen's overalls, jeans, skirts	 80x46 10x7
Drill A light to medium fabric made of coarse, hard twist cotton yams with 3/1 twill (for thicker fabric) or 2/1 twill (for lighter fabric). Drill can be used undyed, dyed, warp striped or printed. **End uses :** (For thicker fabric) sportswear, uniform (For lighter fabric) jeans, trousers	 128x60 20x16
Flannel A soft, loosely woven fabric with a brushed surface, either in plain or twill construction. **End uses:** Trousers, jackets and sportswear.	

	42X44 24x13
Tweed A fairly coarse woolen fabric made with 2/2 twill construction. It may be solid colored, a mixture of colors, striped or checked. **End uses**: Warm trousers, jackets, suiting and coats	 36x32 40/2 + 5(fancy) x 15+5(fancy)
Damask A Jacquard weave fabric with a warp satin design and a filling sateen as background or the reverse. End uses: Tablecloth, draperies, upholstery and ladies' evening dresses	 108 x 56 32x32

3.14 INSPECTION:

Fabric inspection

The "10-point system" was published as a standard in 1955 by the Textile Distributors Institute and the National Federation of Textiles. The system may be used for any greige or finished fabrics, but mostly it is applied in inspection of....

Garments Inspection

The aim of garment inspection is to visually inspect articles at random from a delivery in order to verify their general conformity and appearance with instruction/descriptions and/or samples received.

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samples received.

FABRIC INSPECTION:

10-POINTS SYSTEM

The "10-point system" was published as a standard in 1955 by the Textile Distributors Institute and the National Federation of Textiles. The system may be used for any greige or finished fabrics, but mostly it is applied in inspection of woven finished fabrics.

This system assigns every identified defect a value depending on the gravity of the defect. The type and cause of the defect are not the most important criteria in assessing the quality of the fabric inspected; whether the fabric is of first or second grade depends on the size and the frequency of the defects.

The 10 point system classifies defects for warp and weft into four groups.

Size of Defect (Inches) **Warp**
Assigned Points
1 inch or less > 1
1 to 5 inches > 3
5 to 10 inches > 5
10 to 36 inches > 10
Size of Defect (Inches) **Weft**
Assigned Points
1 inch or less > 1
1 to 5 inches > 3
5 inches to half width > 5
Large than half width > 10

4-POINTS SYSTEM

This system is similar to the 10-point system but assigns penalty points on a different basis. There are four categories of defects with assigned values, and faults are recorded according to the size and frequency irrespective of cause and type.

SIZE OF DEFECTS (Inches)
Assigned Points
3 inches or less > 1
Over 3 inches but not over 6 inches > 2
Over 6 inches but not over 9 inches > 3
Over 9 inches > 4

GARMENT INSPECTION:

The aim of garment inspection is to visually inspect articles at random from a delivery in order to verify their general conformity and appearance with instruction/descriptions and/or samples received.

Stages of Garment Inspection

Different systems may be used by different organizations, nevertheless there are normally four stages of garment inspection:

Pre-production check: this is done before production starts, where there is a final verification of the material used, style, cut and workmanship of the garment or pre-production sample.

Initial production check: this is done at the start of production where a first batch of garments is inspected, to distinguish possible discrepancies/variation and to allow for the necessary corrections to be made before bulk production. The inspection is a preliminary stage covering mainly style and general appearance, workmanship, measurements, quality of fabrics, components, weight, colour and/or printing.

During production check: this is done during production to ensure initial discrepancies/ variations have been rectified. This inspection is in fact the follow-up of the initial production check and is generally carried out a few days after the initial inspection, especially if discrepancies have been detected at that time.

Final random inspection: this is carried out when the production of the total quantity of an order or partial delivery is completed. A sample lot will be selected from the order and a percentage of the garments will be inspected, this percentage usually being stipulated by the buyer The AQL sampling inspection may be applied or another inspection system designed by the buyer.

AQL Random Sampling Inspection

The AQL random sampling inspection was derived from the mathematical theory of probability and is based on the sampling scheme defined in Military Standard 105D (MIL-STD-105D). This method constitutes taking random samples from a lot of merchandise, inspecting them and depending on the quality of the samples inspected, determining whether the entire lot is acceptable or not.

The MIL-STD-105D (also BS6001, ISO 2859, DIN 40080) provides the sampling plans, and these determine the number of samples to be inspected in lot size, in addition to indicating and the acceptable quality level (AQL) which represents the maximum number of defects per

hundred units that, for the purpose of the sampling inspection can be considered satisfactory as a process average.

In general cases the buyer will determine which sampling plan and what AQL to adopt. The AQL 1.5 is applied when severe inspection conditions are required on high-class expensive items. The AQL 2.5 is applied when textiles of normal/good quality are involved.

There are three types of sampling plans: single, double and multiple sampling plans. Each sampling plan can be performed at three levels: normal, tightened and reduced, depending on inspection requirements and quality of the products. In the garment industry, generally single and double normal sampling plans are applied; therefore only examples of these two will be provided.

The Sample Size Code Letter (Table 1) shows various lot sizes corresponding to a series of code letters. There are seven inspection levels, four for general inspection and three for special inspection. For garment inspection, general inspection level 11 is normally applied unless stipulated otherwise.

Single Sampling Plan - Normal Inspection

Assume an AQL of 2.5% and a lot size of 600 garments. Referring first to Table 1, the number/ quantity 600 falls in line 9 in the "Lot or batch size" column, which also corresponds to the code letter "**J**" in the "General Inspection Levels 11" column. In Table 2, the code letter "J" has a sample size of 80 and under the column of 2.5 AQL, it can be found that the "AC" or acceptable number is 5 and the "RE" or rejection number is 6.

It means that after inspection of all 80 garments from the sample lot, if the number of defective garments found is 5 or less, then the whole lot of 600 garments is accepted; if the number of defective garments found is 6 or more, then the whole lot of 600 garments is rejected.

Double Sampling Plan - Normal Inspection

Assume an AQL of 4.0% and a lot size of 2000 garments.

From Table 1, the number/quantity 2000 corresponds to the letter "K" in the "General inspection Levels II" column. From Table 3, "**K**" has two sample sizes. The first sample size is equal to 80 with an acceptance number of 5 or less and a rejection number of 9 or more defective garments. If after the first inspection, the number of defective garments amounts to 6, 7, or 8, then proceed to the second inspection. The second sample size is also 80 (making a total of 160 garments), with acceptance number 12 or less and rejection number 13 or more defective garments. The "AC" and "RE" for the second inspection are cumulative, i.e., the number of defective garments found in the first sample are added to the number of defective garments found in the second

sample. Hence if the number of defective garments found in the first sample is 6 and in the second sample is 5, making a cumulative of 11, then the whole lot of 2000 pieces is accepted.

3.15 BOM(Bill of Material):

A buyer also send a measurement sheet for making a garments accurately.

Below a BOM sheet of a 5 pocket is given:

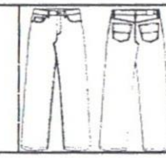
Figure 3.3: A BOM Sheet page 1

Sears

MS10-NV25-9922

Construction Details

Nevada	Fit Size R _ iired:	34	Garment Description:	Core Classic Fit - Straight Leg	
Spring 2010	Product Manager:	Margot Clarkson	Revised Date:	24 Aug 09 04:59 PM	
Mens	Technical Designer:	Nancy MacPhee	Buyer 1:	Susan Perlanski	
Woven Bottom	Department:	633 Casual Wear	Buyer 2:		
100%cotton 12.25 oz -	Vendor:		Buyer 3:		



Bottom - Woven
WAISTBAND
- 1 piece, clean finished, fused
- chainstitch all around

Bottom - Woven
BELT LOOPS
- 2/n, coverstitch, bartack top and bottom

SIZES 42 UP REQUIRE 2 EXTRA BELT LOOPS

Bottom - Woven
FRONT FLY
- 2/n, 1 4" topstitch, bartack as sketch
- edgestitch along fly opening

Bottom - Woven
FRONT AND BACK RISE
- flat felled seam
- 2/n, 1 4" topstitch topstitch to wearer's left side

Bottom - Woven
FRONT SCOOP POCKETS
- clean finish opening
- 2/n, 1 4" topstitch
- rivets at ends

Bottom - Woven
COIN POCKET
- clean finish
- 1/n, 1 4" topstitch top edge
- 2/n, 1.4" topstitch sides and bottom
- rivets at top corners

Bottom - Woven
SIDE SEAM
- safety serge
- 1/n, edgestitch towards back to 5 1/2" below waist seam

Bottom - Woven
INSEAM
- flat felled seam
- 2/n. 1 4" topstitch towards front

Bottom - Woven
BACK YOKE
- flat felled seam
- 2/n, 1/4" topstitch below seam

Bottom - Woven
BACK PATCH POCKETS
- clean finish
- 1/n, 1/4" topstitch top edge
- 2 rows of 1/n topstitch as sketch
- bartack top corners
- 2/n, 1/4" decorative topstitch through centre of pocket bag

Bottom - Woven
HEM
- clean finished
- 1/n topstitch, 5/8" margin

Printed: 24 AUG 2009 04:59 PM EDT
2_WARPConstructionDetails.g3ReportL (W: 5.0.34 PJ: 5.C.60)

Figure 3.4: A BOM Sheet page 2

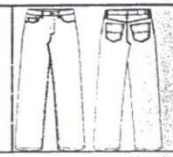
Figure 3.5 : A BOM Sheet page 3

Sears

MS10-NV25-9922

Measurement Spec Worksheet- classic fit - 9[illegible]913

Nevada	Fit Size Required:	34	Garment Description:	Core Classic Fit - Straight Leg
Spring 2010	Product Manager:	Margot Clarkson	Revised Date:	24 Aug 09 04:59 PM
Mens	Technical Designer:	Nancy MacPhee	Buyer 1:	Susan Perlanski
Woven Bottom	Department:	633 Casual Wear	Buyer 2:	
100%cotton 12.25 oz -	Vendor:		Buyer 3:	



Selected Range: 28, 29, 30, 31, 32, 33, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56

POM	Description	Tol (+)	Tol (-)	28 (XS)	29	30 (S)	31	32	33	[34] (M)	36	38 (L)	40 (XL)
00	Blank Cell = Grade Accordingly												
WA60a	Waist Circ.: at Mid Band	1/2	-1/2	28 1/2	29 1/2	30 1/2	31 1/2	32 1/2	33 1/2	34 1/2	36 1/2	38 1/2	40 1/2
ST69d	Seat Circ.: 3 1/2" Above Crotch Point	1/2	-1/2	37 1/2	38 1/2	39 1/2	40 1/2	41 1/2	42 1/2	43 1/2	45 1/2	47 1/2	49 1/2
FR52a	Front Rise: Crotch Point to Top Edge	1/4	-1/4	10 7/8	11 1/16	11 1/4	11 7/16	11 5/8	11 13/16	12	12 3/8	12 3/4	13 1/8
BR52a	Back Rise: Crotch Point to Top Edge	1/4	-1/4	14 3/4	14 15/16	15 1/8	15 5/16	15 1/2	15 11/16	15 7/8	16 1/4	16 5/8	17
FR68a	Fly Length: Seam to Bottom Stitch	1/4	-1/4	6	6	6	6	6 1/2	6 1/2	6 1/2	6 1/2	7	7
LG88b	Back Yoke Height: from Waist Seam at CB	1/8	-1/8							2 1/4			
LG87b	Back Yoke Height: from Waist Seam at Side Seam	1/8	-1/8							1			
TH51a	Thigh Circ.: 1" Below Crotch Point	1/2	-1/2	23	23 5/8	24 1/4	24 7/8	25 1/2	26 1/8	26 3/4	28	29 1/4	30 1/2
IN50a	Inseam Length: Crotch Point to Edge (refer to PO)	1/2	-1/4	33	33	33	33	33	33	33	33	33	33
KN56c	Knee Circ.: 13" Down (for 30",32" & 33" inseam)	1/2	-1/2	17 1/2	17 3/4	18	18 1/4	18 1/2	18 3/4	19	19 1/2	20	20 1/2
KN56d	Knee Circ.: 14" Down (for 34" inseam)	1/2	-1/2	17 1/2	17 3/4	18	18 1/4	18 1/2	18 3/4	19	19 1/2	20	20 1/2
LO60b	Leg Opening Circ.: Long (Straight Leg)	1/2	-1/2	16 3/8	16 9/16	16 3/4	16 15/16	17 1/8	17 5/16	17 1/2	17 7/8	18 1/4	18 5/8
WA55a	Waistband Height	1/8	-1/8	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
LP92a	Belt Loop: Height	1/8	-1/8	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
LP93a	Belt Loop: Width	0	-0	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8
	FRONT POCKETS												
PO70a	Pocket Opening Width: Along Waist Seam	1/8	-1/8							4 1/2			
PO71a	Pocket Opening Height: Along Side Seam	1/8	-1/8							3 1/4			
PB85a	Pocket Bag Length: at Deepest Point	1/4	-1/4	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2
CP54a	Coin Pocket Placement: from Waist Seam	1/8	-1/8							1			
CP52a	Coin Pocket Height: at Longest Point	1/8	-1/8							3 3/4			
CP50a	Coin Pocket Width: at Top Edge	1/8	-1/8							3 1/2			
	BACK POCKETS												
PP86b	Pocket Placement: Waist Seam to Center of Pocket	1/8	-1/8							3 1/4			
PK90a	Pocket Height: at Center	1/8	-1/8							6 1/4			
PK92a	Pocket Width: at Top	1/8	-1/8							6 3/4			
PK93a	Pocket Width: at Bottom	1/8	-1/8							5 1/4			
NOTE:	SPEC NOT FOR PRODUCTION UNTIL FIT APPROVAL												

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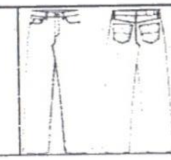
3 WARPAML.rpt/WorkSheet1 (W 5.0.34, PJ 5.0.60)

Figure 3.6: A BOM Sheet page 4

Measurement Spec Worksheet- classic fit - 91 913

levada	Fit Size Required: 34	Garment Description:	Core Classic Fit - Straight Leg
Spring 2010	Product Manager: Margot Clarkson	Revised Date:	24 Aug 09 04:59 PM
Mens	Technical Designer: Nancy MacPhee	Buyer 1:	Susan Perlanski
Woven Bottom	Department: 633 Casual Wear	Buyer 2:	
100%cotton 12.25 oz -	Vendor:	Buyer 3:	



Selected Range: 28, 29, 30, 31, 32, 33, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56

POM	Description	Tol (+)	Tol (-)	42	44 (2XL)	46	48 (3XL)	50	52 (4XL)	54	56
00	Blank Cell = Grade Accordingly										
WA60a	Waist Circ.: at Mid Band	1/2	-1/2	42 1/2	44 1/2	46 1/2	48 1/2	50 1/2	52 1/2	54 1/2	56 1/2
ST69d	Seat Circ.: 3 1/2" Above Crotch Point	1/2	-1/2	51	52 1/2	54	55 1/2	57	58 1/2	60	61 1/2
FR52a	Front Rise: Crotch Point to Top Edge	1/4	-1/4	13 3/8	13 5/8	13 7/8	14 1/8	14 3/8	14 5/8	14 7/8	15 1/8
BR52a	Back Rise: Crotch Point to Top Edge	1/4	-1/4	17 1/4	17 1/2	17 3/4	18	18 1/4	18 1/2	18 3/4	19
FR68a	Fly Length: Seam to Bottom Stitch	1/4	-1/4	7	7	7	7	7 1/2	7 1/2	7 1/2	7 1/2
LG88b	Back Yoke Height: from Waist Seam at CB	1/8	-1/8								
LG87b	Back Yoke Height: from Waist Seam at Side Seam	1/8	-1/8								
TH51a	Thigh Circ.: 1" Below Crotch Point	1/2	-1/2	31 1/2	32 1/2	33 1/2	34 1/2	35 1/2	36 1/2	37 1/2	38 1/2
IN50a	Inseam Length: Crotch Point to Edge (refer to PO)	1/2	-1/4	33	33	33	33	33	33	33	33
KN56c	Knee Circ.: 13" Down (for 30",32" & 33" inseam)	1/2	-1/2	20 7/8	21 1/4	21 5/8	22	22 3/8	22 3/4	23 1/8	23 1/2
KN56d	Knee Circ.: 14" Down (for 34" inseam)	1/2	-1/2	20 7/8	21 1/4	21 5/8	22	22 3/8	22 3/4	23 1/8	23 1/2
LO60b	Leg Opening Circ.: Long (Straight Leg)	1/2	-1/2	18 7/8	19 1/8	19 3/8	19 5/8	19 7/8	20 1/8	20 3/8	20 5/8
WA55a	Waistband Height	1/8	-1/8	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
LP92a	Belt Loop: Height	1/8	-1/8	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
LP93a	Belt Loop: Width	0	-0	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8
	FRONT POCKETS										
PO70a	Pocket Opening Width: Along Waist Seam	1/8	-1/8								
PO71a	Pocket Opening Height: Along Side Seam	1/8	-1/8								
PB85a	Pocket Bag Length: at Deepest Point	1/4	-1/4	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2
CP54a	Coin Pocket Placement: from Waist Seam	1/8	-1/8								
CP52a	Coin Pocket Height: at Longest Point	1/8	-1/8								
CP50a	Coin Pocket Width: at Top Edge	1/8	-1/8								
	BACK POCKETS										
PP86b	Pocket Placement: Waist Seam to Center of Pocket	1/8	-1/8								
PK90a	Pocket Height: at Center	1/8	-1/8								
PK92a	Pocket Width: at Top	1/8	-1/8								
PK93a	Pocket Width: at Bottom	1/8	-1/8								
NOTE:	SPEC NOT FOR PRODUCTION UNTIL FIT APPROVAL										

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Figure 3.7: A BOM Sheet page 5

Sears

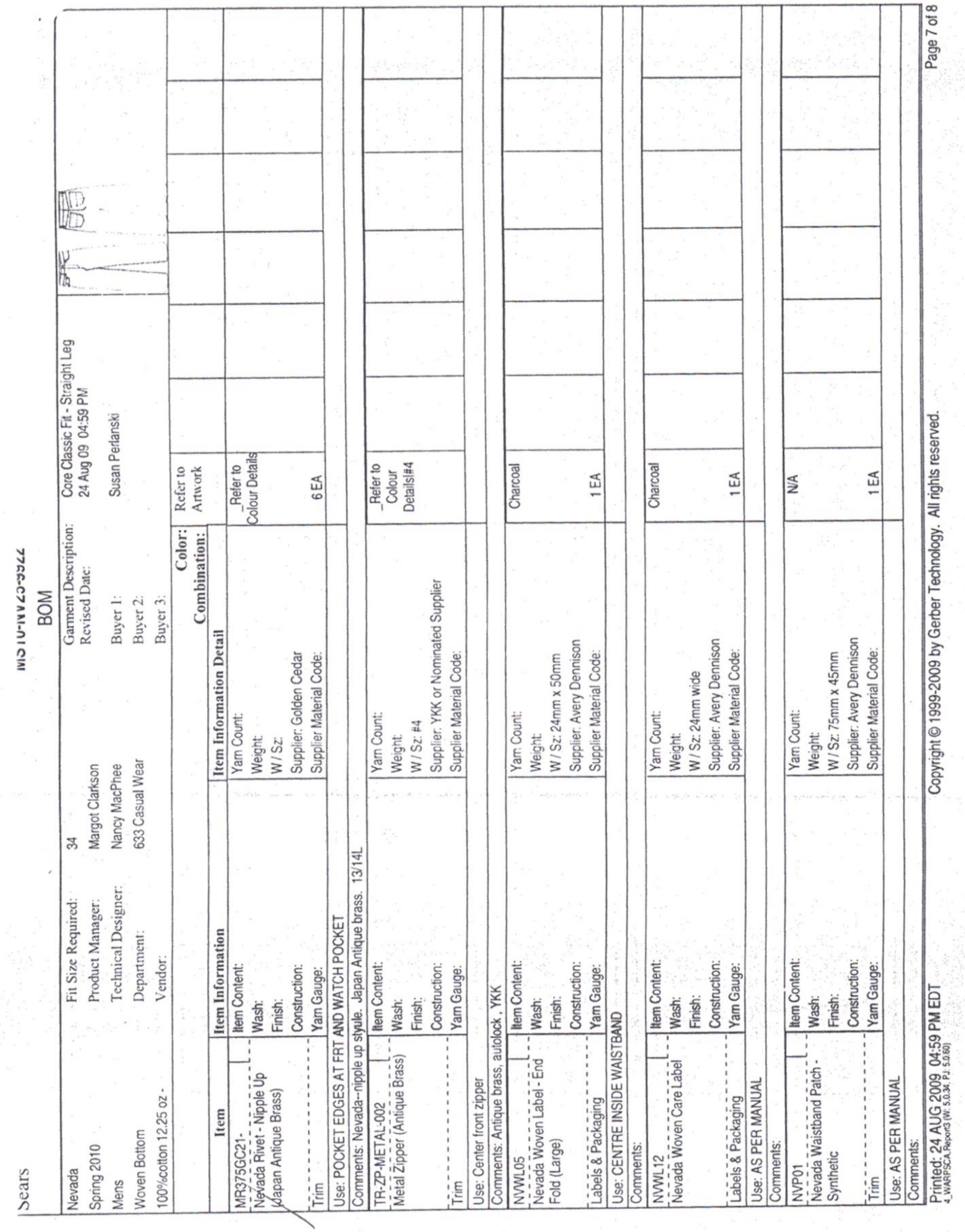
MS10-NV25-9922

BOM

Nevada	Fit Size Required:	34	Garment Description:	Core Classic Fit - Straight Leg
Spring 2010	Product Manager:	Margot Clarkson	Revised Date:	24 Aug 09 04:59 PM
Mens	Technical Designer:	Nancy MacPhee	Buyer 1:	Susan Perlanski
Woven Bottom	Department:	633 Casual Wear	Buyer 2:	
100%cotton 12.25 oz -	Vendor:		Buyer 3:	

Item	Item Information	Item Information Detail	Color: Combination:	Refer to Artwork					
FB-WV-DENIM-002	Item Content: 100 Cotton	Yarn Count:		To Be Confirmed					
Denim (100 Cotton)	Wash: AS PER EIW	Weight: 12.25 oz		12.25 oz					
	Finish:	W / Sz:							
	Construction: 68 X 50	Supplier:							
Fabric	Yarn Gauge:	Supplier Material Code:							
Use: BODY									
Comments: F3/1(R9+SBR6)									
FB-WV-DENIM-019	Item Content: See Comments	Yarn Count:		Refer to Artwork					
Bull Denim (See Comments)	Wash:	Weight: 12.25 oz		12.25 oz					
	Finish:	W / Sz:							
	Construction:	Supplier: As Per Vendor							
Fabric	Yarn Gauge:	Supplier Material Code:							
Use: BODY									
Comments: FOR BLK AND WT.									
TR-TH-THREAD-001	Item Content:	Yarn Count:		Refer to Artwork					
Polycore Thread	Wash:	Weight:							
	Finish:	W / Sz:							
	Construction:	Supplier: As Per Vendor							
Trim	Yarn Gauge:	Supplier Material Code:							
Use: CONSTRUCTION									
Comments: DTM polycore									
TR-TH-THREAD-002	Item Content:	Yarn Count:		Refer to Colour Details					
Topstitch Thread	Wash:	Weight:							
	Finish:	W / Sz:							
	Construction:	Supplier: Nominated Supplier							
Trim	Yarn Gauge:	Supplier Material Code:							
Use: TOPSTITCH- 9 SPI HEAVY TEX									
Comments: CONTRAST ON DENIM/VENDOR TO CFM REF. OFR RED/ORANGE - DTM FOR BULL DENIM									
SJ822GC27	Item Content:	Yarn Count:		Light Pewter					
Nevada Metal Shank Button	Wash:	Weight:		27 L					
-Non Pivoting (L Pewter)	Finish:	W / Sz: 27 L							
	Construction:	Supplier:							
Trim	Yarn Gauge:	Supplier Material Code:		1 EA					
Use: CENTRE FRT CLOSURE									
Comments:									

Figure 3.8: A BOM Sheet page 6



Sears

MS10-NV25-9922

BOM

Nevada	Fit Size Required:	34	Garment Description:	Core Classic Fit - Straight Leg	
Spring 2010	Product Manager:	Margot Clarkson	Revised Date:	24 Aug 09 04:59 PM	
Mens	Technical Designer:	Nancy MacPhee	Buyer 1:	Susan Perlanski	
Woven Bottom	Department:	633 Casual Wear	Buyer 2:		
100%cotton 12.25 oz -	Vendor:		Buyer 3:		

Item	Item Information	Item Information Detail	Color: Combination: Refer to Artwork
MR375GC21- Nevada Rivet - Nipple Up (Japan Antique Brass) Trim	Item Content: Wash: Finish: Construction: Yarn Gauge:	Yarn Count: Weight: W / Sz: Supplier: Golden Cedar Supplier Material Code:	_Refer to Colour Details 6 EA
Use: POCKET EDGES AT FRT AND WATCH POCKET			
Comments: Nevada--nipple up styule. Japan Antique brass. 13/14L			
TR-ZP-METAL-002 Metal Zipper (Antique Brass) Trim	Item Content: Wash: Finish: Construction: Yarn Gauge:	Yarn Count: Weight: W / Sz: #4 Supplier: YKK or Nominated Supplier Supplier Material Code:	_Refer to Colour Details#4
Use: Center front zipper			
Comments: Antique brass, autolock , YKK			
NVWL05 Nevada Woven Label - End Fold (Large) Labels & Packaging	Item Content: Wash: Finish: Construction: Yarn Gauge:	Yarn Count: Weight: W / Sz: 24mm x 50mm Supplier: Avery Dennison Supplier Material Code:	Charcoal 1 EA
Use: CENTRE INSIDE WAISTBAND			
Comments:			
NVWL12 Nevada Woven Care Label Labels & Packaging	Item Content: Wash: Finish: Construction: Yarn Gauge:	Yarn Count: Weight: W / Sz: 24mm wide Supplier: Avery Dennison Supplier Material Code:	Charcoal 1 EA
Use: AS PER MANUAL			
Comments:			
NVP01 Nevada Waistband Patch - Synthetic Trim	Item Content: Wash: Finish: Construction: Yarn Gauge:	Yarn Count: Weight: W / Sz: 75mm x 45mm Supplier: Avery Dennison Supplier Material Code:	N/A 1 EA
Use: AS PER MANUAL			
Comments:			

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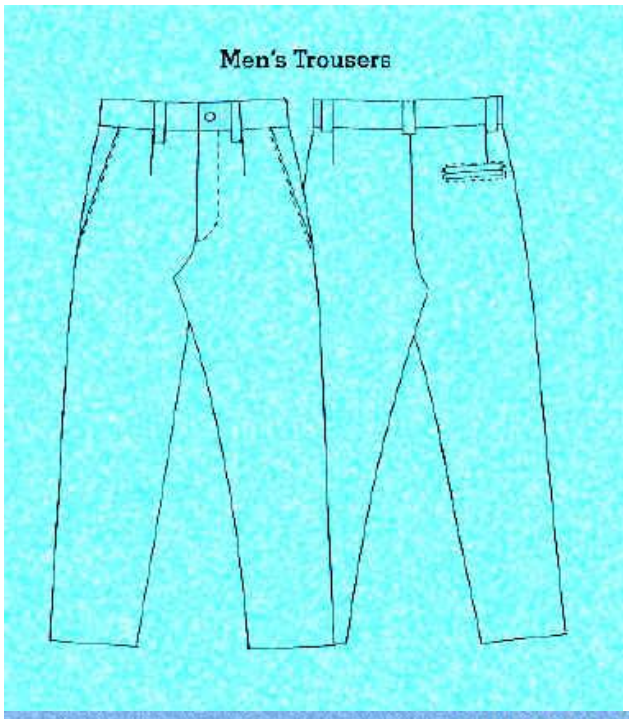
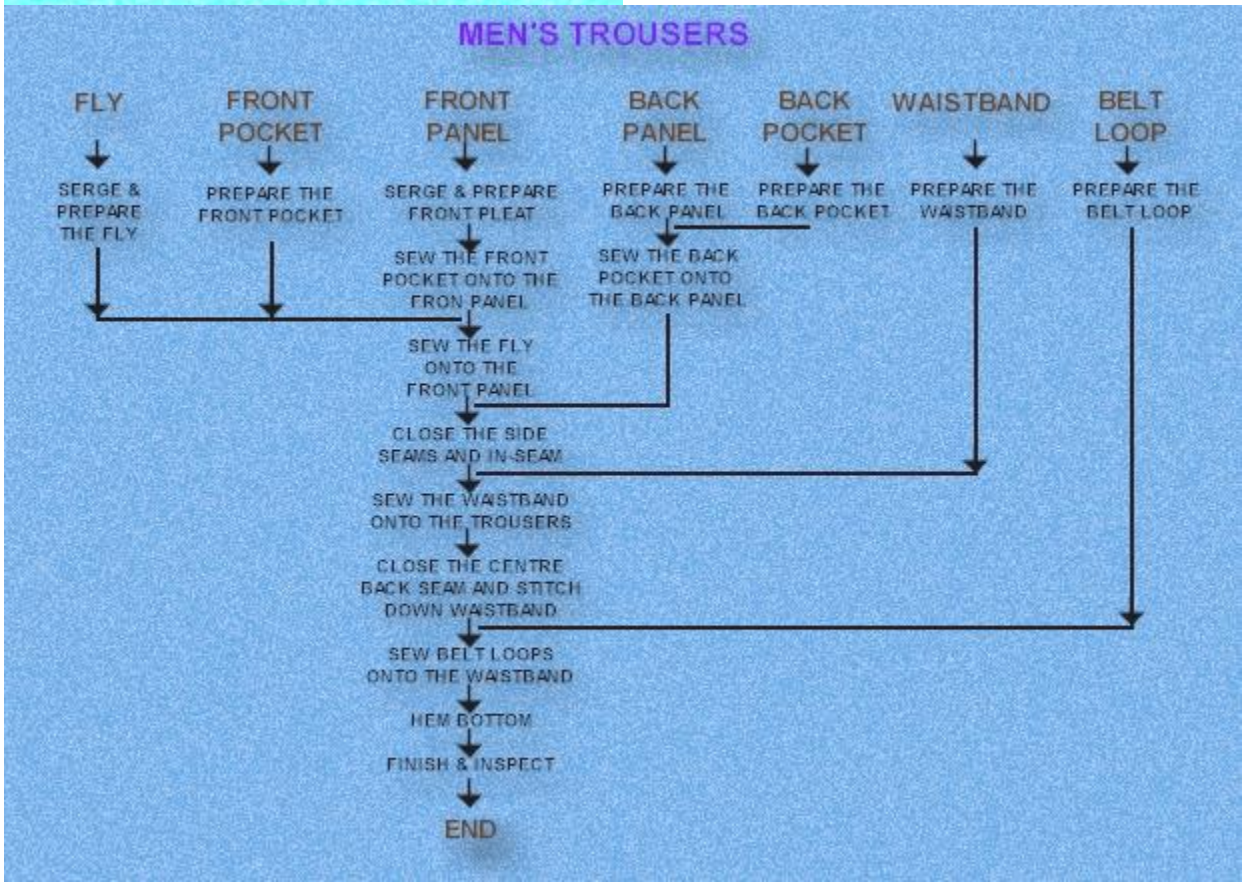
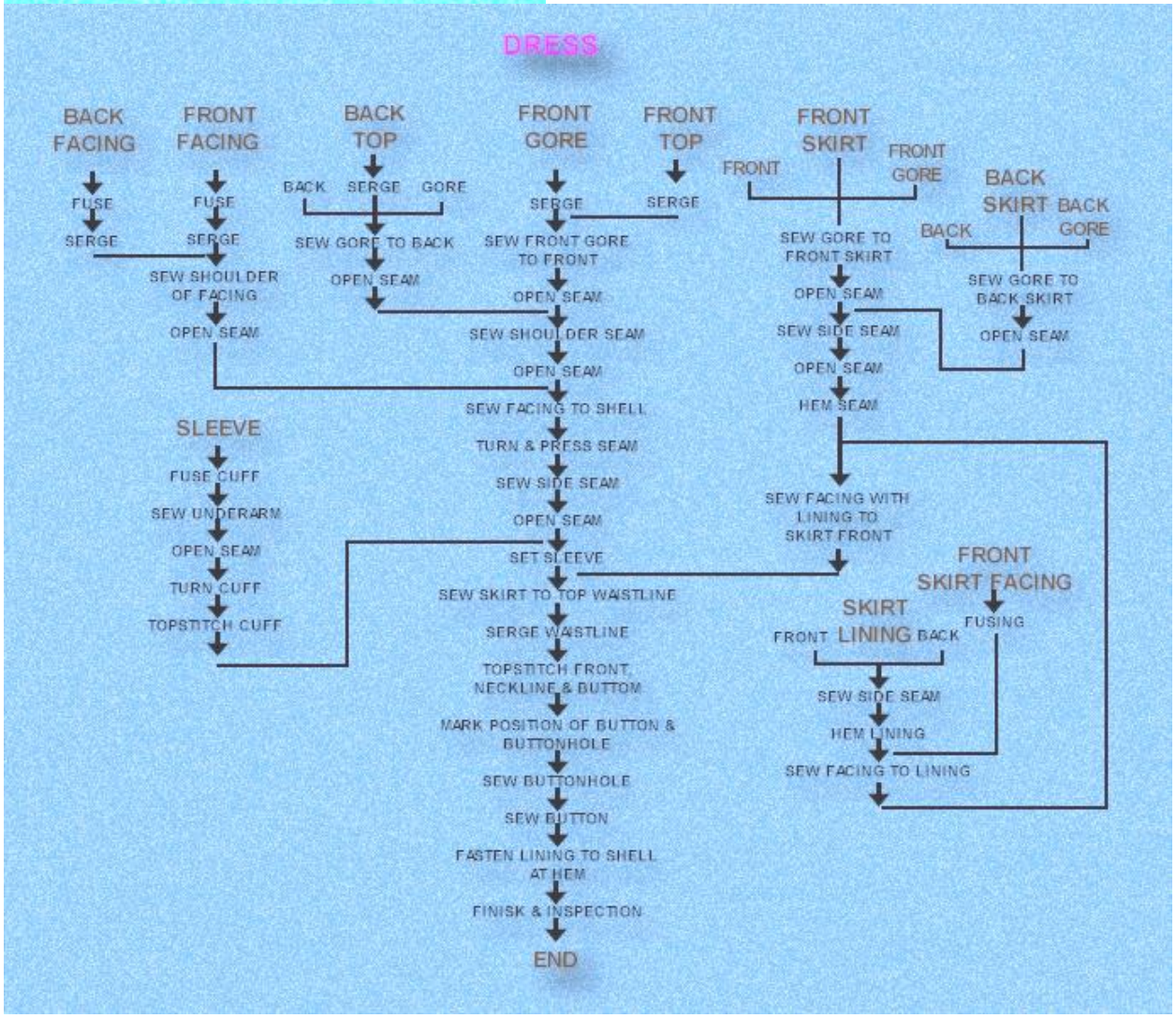
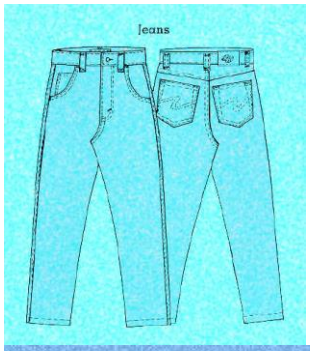
Figure 3.9: A BOM Sheet page 7

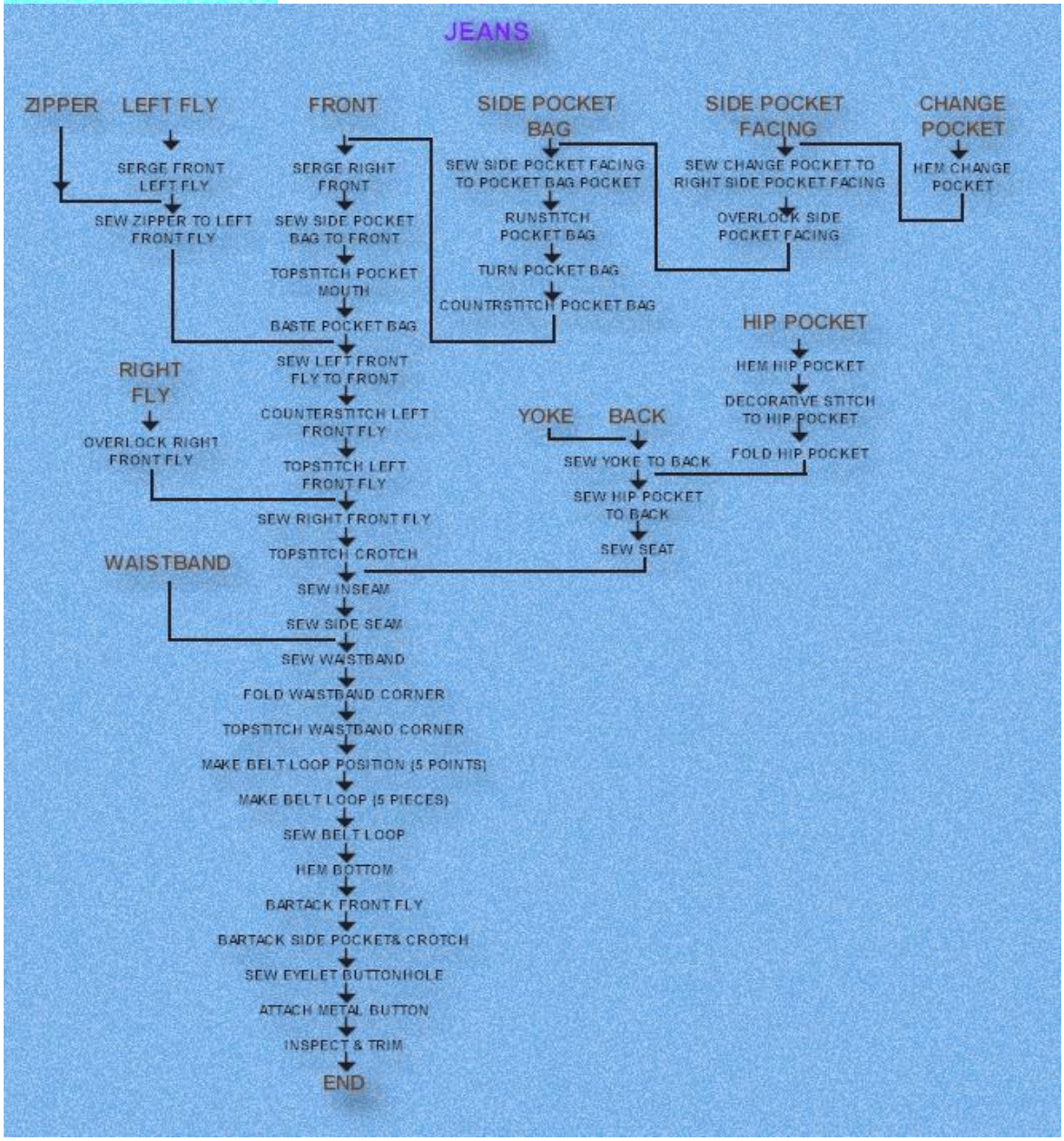
3.16 GARMENTS MANUFACTURING PROCESS:

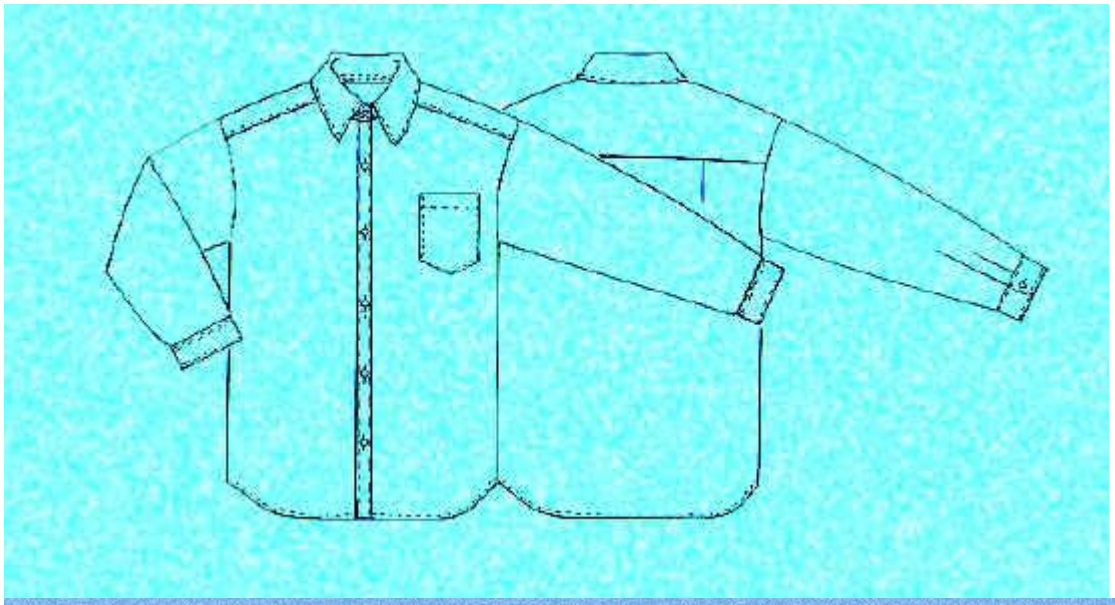


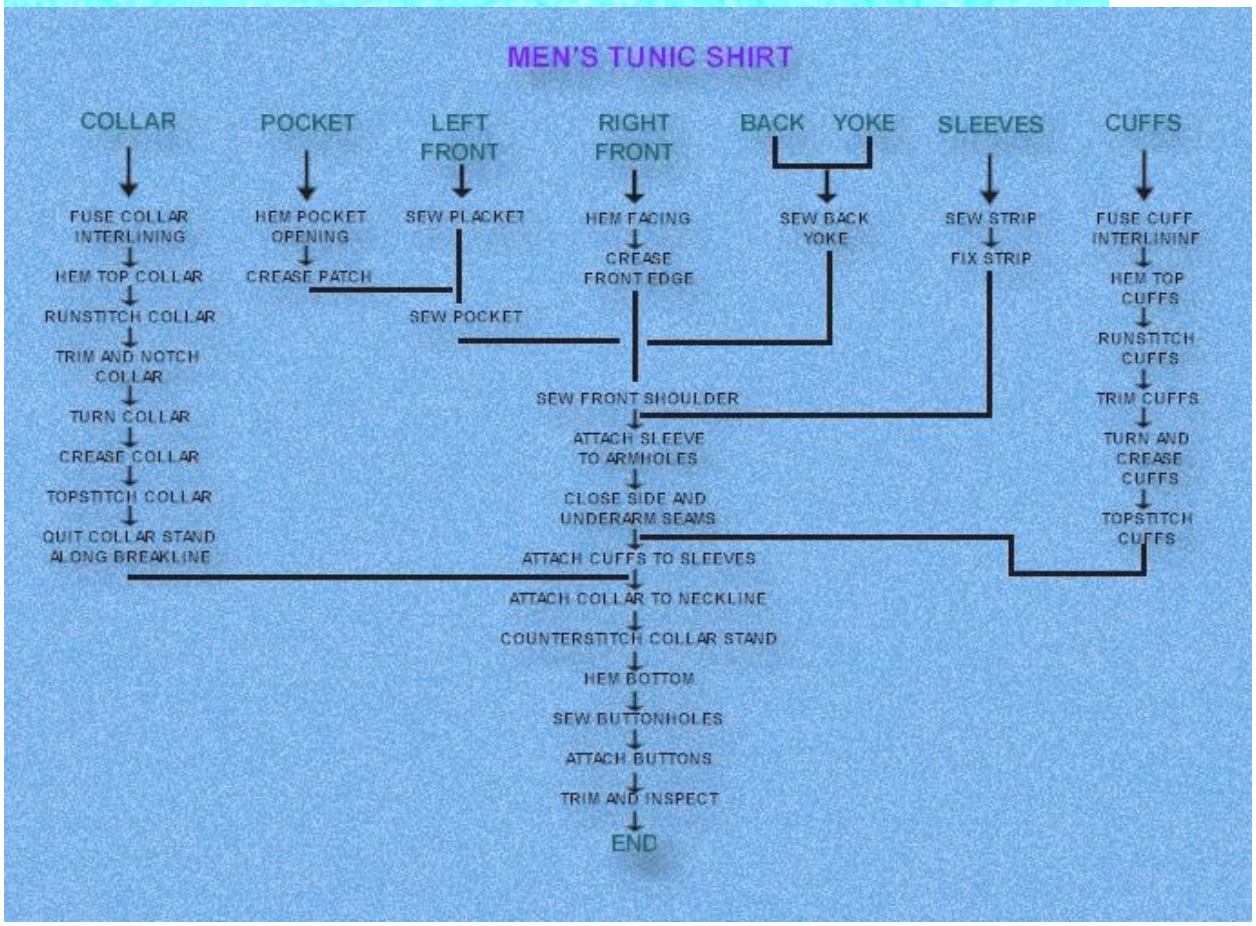


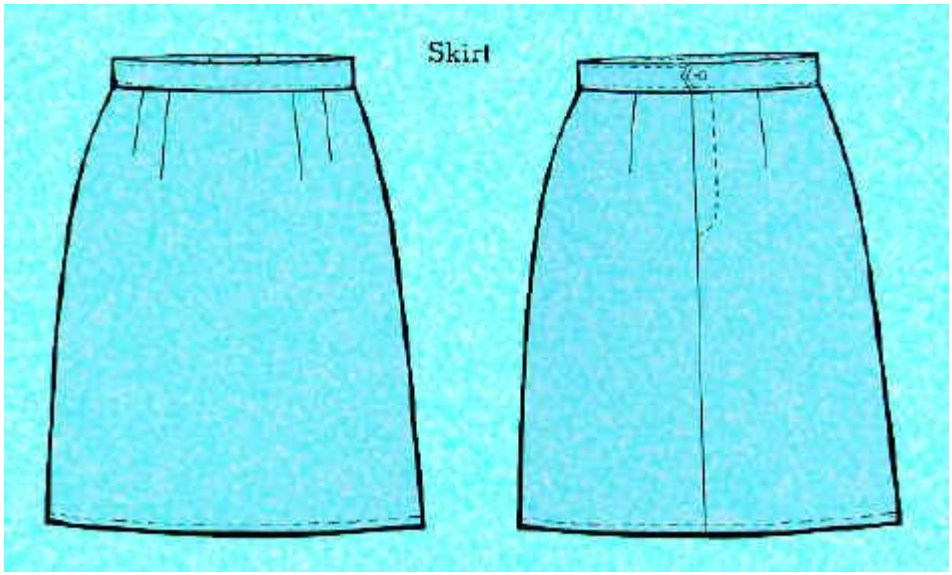


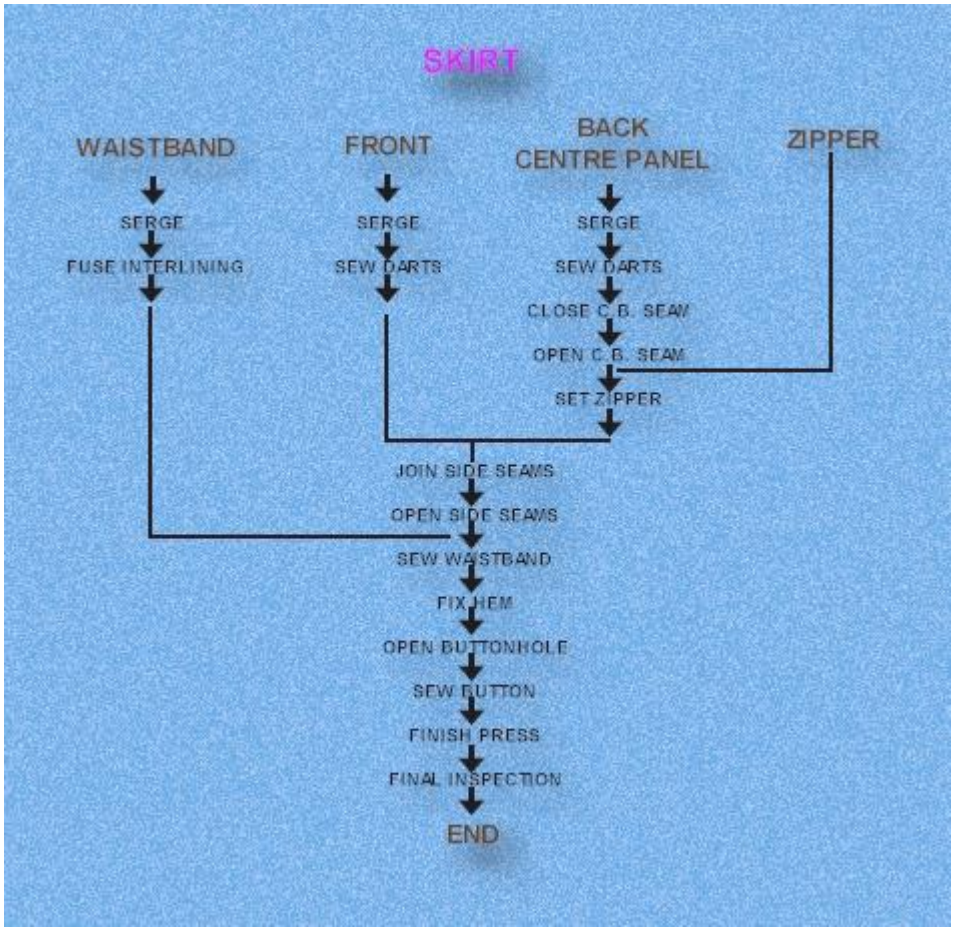


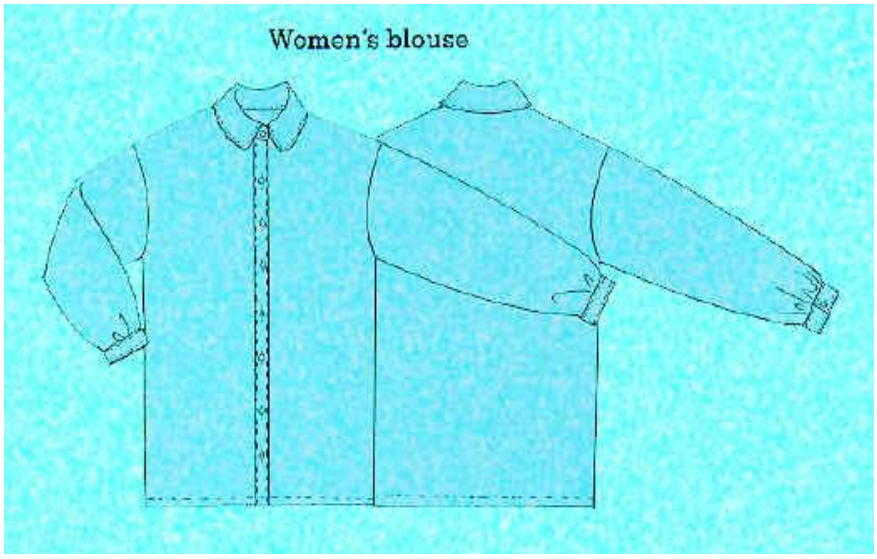


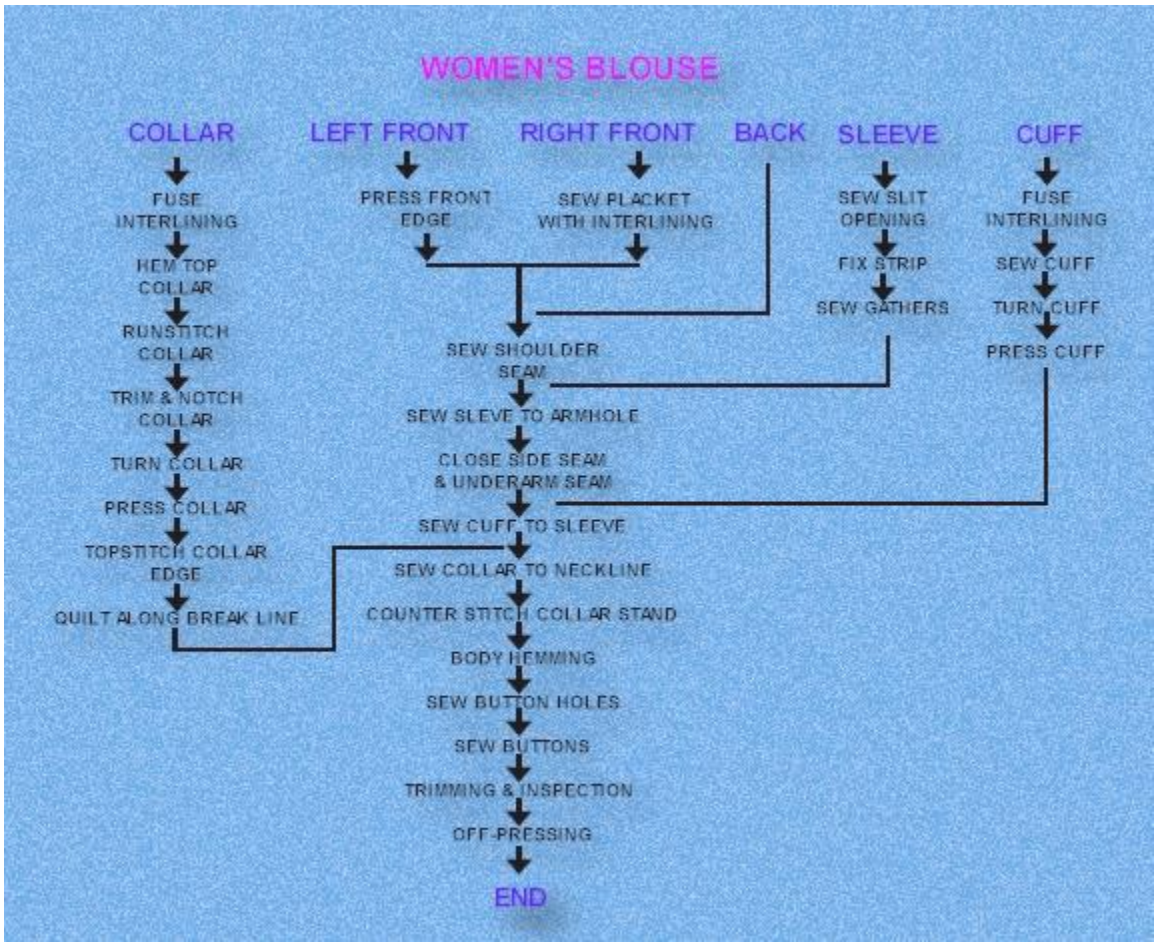










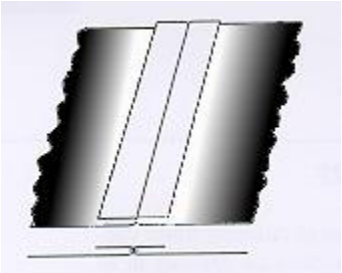


3.17 SEAMS & STICHES:

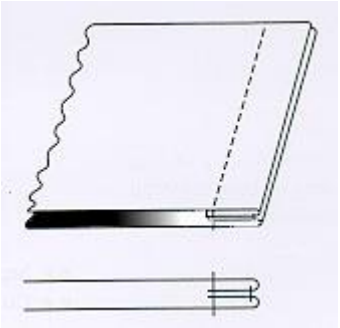
The application of a series of stitches or stitch types to one or several thickness of material for utilitarian, functional or decorative purposes (BS 3870 1991).
According to BS 3870: Part II: 1991, stitched seams can be divided into the eight classes, the commonly used seams for each class are shown as follows:

Seam Class 1:

Plain seam which is the most common type of seam, is produced by a line of stitches joining two pieces of materials (face to face) together. It can be used on any part of a garment and on various styles;

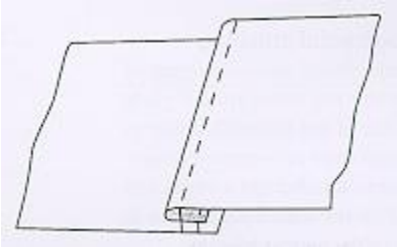


French seam is formed by joining the two pieces of fabric together, folded over and sewn again so that the folded edges are enclosed.
French seam, which is a self-neatened seam, can be used on the outer edges of collars, cuffs and pocket flaps as well as on the side seams, underarm seams of dresses, blouses etc.



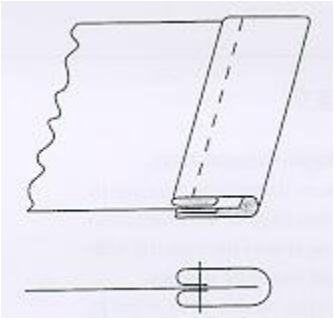
Seam Class 2:

Lapped seam
A seam which is formed by lapping two pieces of material, is common used in joining garment parts such as yoke, gusset to other garment parts.



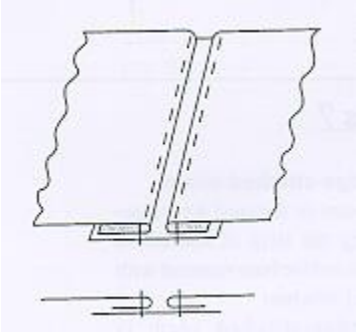
Seam Class 3:

Bound seam
A seam having its fabric edges bound with a strip of binding.
This bound seam is always used in edge neatening or for decorative purposes, mainly on high quality garments.



Seam Class 4:

Channel seam

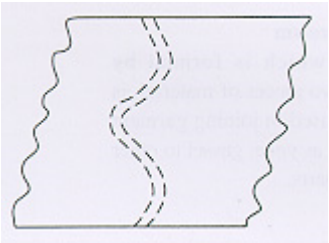


This seam is produced by folding the two pieces of base material inwardly to the wrong side to form a seam allowance and then stitching is applied at an even distance to join the separate pieces of material and the two folded edges together.

This channel seam is always used in fabric with contrasting colours or fabric properties as well as on the side seams of trousers and on all parts of fashioned garments.

Seam Class 5:

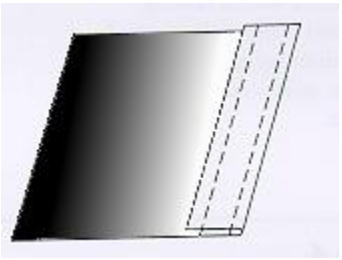
Ornamental stitching



A sequence of stitches or types of stitches are sewn in the plain surface of the material, either in straight lines or in curved lines. Ornamental stitching is very often used for decorative purposes or as part of the garment design.

Seam Class 6:

The single-turned hem

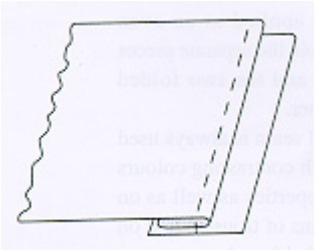


A seam is formed by turning-in the limited edge of the material to the wrong side of the material with a row (or rows) of stitches.

This single-turned hem seam is commonly used to finish the hem of blouses, coats, pyjamas and trousers.

Seam Class 7:

The edge-stitched seam



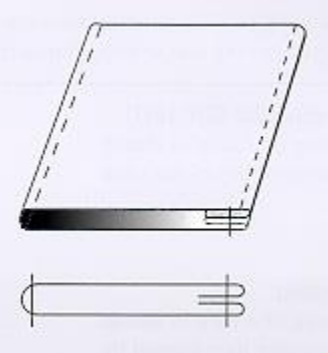
The seam is formed by edgestitching the strip of additional material and the base material with a row of stitches.

This edge-stitched seam is commonly found on hemlines and sleeve hems of ladies' pyjamas, nightgowns, blouses and dresses.

Seam Class 8:

The enclosed seam

This seam is produced by folding a strip of material, limited on both edges, inwardly to the wrong side and then half folding the strip of material lengthwise with a row of stitches on one edge or both edges. The enclosed seam is mainly used in making straps, belts, ties and the hanging loops of garments.



References:

BSI, "Classification and Terminology of Seam Types" BS 3870 Part II 1991 = ISO 4916 1991

STITCHES:

One unit of conformation resulting from one or more strands or loops of thread intralooping, interlooping or passing into or through material (BS 3870 1991).

Intralooping (BS 3870 1991) The passing of a loop of thread through another loop by the same thread.	
Interlooping The passing of a loop of thread through another loop formed by the different thread.	
Interlacing The passing of a thread over or around another thread or loop of another thread.	

Stitch types

According to BS 3870: Part 1: 1991, all stitch types can be divided into the following six classes:

Chain stitches (BS class 100)

Chain stitches are formed using one or more needle threads, and are characterized by intralooping. One or more loops of thread are passed through the material and secured by intralooping with a succeeding loop or loops after they are passed through the material.

E.g., 101,103

Applications: basting, tacking, button sewing, label setting.

Hand Stitches (BS class 200)

These types of stitches which originated as hand stitches are characterized by a single thread, which are passed through the material as a single line of thread and the stitches are secured by the single line of thread passing in and out of the material.

Lockstitches (BS class 300)

These types of stitches are formed with two or more groups of threads, and have for a general characteristic the interlacing of the two or more groups. Loops of one group are passed through the material and are secured by the thread or threads of a second group.

E.g., 301, 304

Multi-thread chain stitches (BS class 400)

These types of stitches are formed with two or more groups of threads, and are characterized by interlooping of the two groups. Loops of one group of threads are passed through the material and are secured by interlacing and interlooping with loops of another group.

E.g., 401,404,406

Applications: seaming operation on all types of garment.

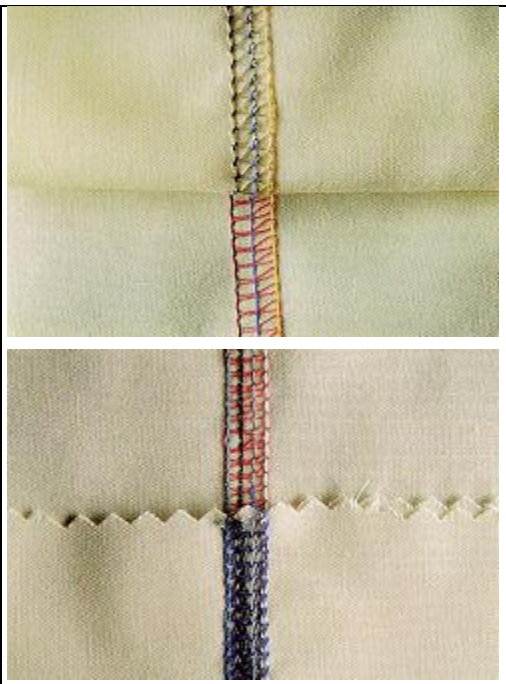
Covering chain stitches (BS 600)

This types of stitches are formed with two or more groups of threads, which are interlooped with each other. And a cover thread is used to link different groups of needle threads together

Seams sewn with class 600 stitches are flat and have high elasticity.

E.g., 602, 605, 607

Applications : used in binding operations in knitted

undergarments, athletic shirts and infants' wear.	

Notes:
Needle thread: The thread carried by the sewing needle.
Bobbin thread: The thread which comes from the bobbin of the sewing machine.
Cover thread: The thread which appears on the shell side of the material to be sewn and link different needle threads together.

Reference:
BSI, "Classification and terminology of stitch types" BS 3870:Part I 1991 = ISO 4915 1991

3.18 INTERNATIONAL CARE LEBELING :

USE OF DOTS FOR DEFINING TEMPERATURE OF WATER FOR WASHING SYMBOL

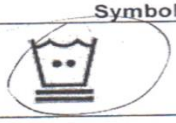
Description and definition of symbols

Symbol	Definition	Description
●●● ●●●	95°C	Near boil
●●● ●●	70°C	extremely hot
●● ●●	60°C	very hot
●●●	50°C	hot
●●	40°C	warm
●	30°C	cool

Washing Instructions

Symbol	Meaning of Symbol	Wording to be used in conjunction with symbol.	Expression correspondant au symbole
	Wash in commercial machine in water not exceeding 95°C, at normal setting	Machine wash in near boil water	Laver à la machine à l'eau presque bouillante.
	Wash in commercial machine in water not exceeding 95°C, at permanent press setting.	Machine wash in near boil water, permanent press	Laver à la machine à l'eau presque bouillante, sans repassage.
	Wash in domestic or commercial machine in water not exceeding 70°C, at normal setting.	Machine wash in extremely hot water	Laver à la machine à l'eau extrêmement chaude
	Wash in domestic or commercial machine in water not exceeding 60°C, at normal setting.	Machine wash in very hot water	Laver à la machine à l'eau très chaude
	Wash in domestic or commercial machine in water not exceeding 60°C, at permanent press setting.	Machine wash in very hot water, permanent press	Laver à la machine à l'eau très chaude, sans repassage
	Wash in domestic or commercial machine in water not exceeding 50°C, at normal setting.	Machine wash in hot water.	Laver à la machine à l'eau chaude
	Wash in domestic or commercial machine in water not exceeding 50°C, at permanent press setting.	Machine wash in hot water, permanent press	Laver à la machine à l'eau chaude, sans repassage
	Wash in domestic or commercial machine in water not exceeding 50°C, at delicate/gentle setting.	Machine wash in hot water, gentle cycle	Laver à la machine à l'eau chaude, cycle délicat
	Wash in domestic or commercial machine in water not exceeding 40°C, at normal setting.	Machine wash in warm water	Laver à la machine à l'eau tiède
	Wash in domestic or commercial machine in water not exceeding 40°C, at permanent press setting.	Machine wash in warm water, permanent press	Laver à la machine à l'eau tiède, sans repassage

Washing Instructions (Cont'd)

Symbol	Meaning of Symbol	Wording to be used in conjunction with symbol	Indications sur les vêtements, français
	Wash in domestic or commercial machine in water not exceeding 40°C, at delicate/gentle setting.	Machine wash in warm water, gentle cycle	Laver à la machine à l'eau tiède, cycle délicat
	Wash gently by hand in water not exceeding 40°C.	Hand wash in warm water	Laver à la main à l'eau tiède
	Wash in domestic or commercial machine in water not exceeding 30°C, at normal setting.	Machine wash in cool water.	Laver à la machine à l'eau fraîche
	Wash in domestic or commercial machine in water not exceeding 30°C, at permanent press setting.	Machine wash in cool water, permanent press.	Laver à la machine à l'eau fraîche , sans repassage
	Wash in domestic or commercial machine in water not exceeding 30°C, at delicate/gentle setting.	Machine wash in cool water, gentle cycle.	Laver à la machine à l'eau fraîche, cycle délicat
	Wash gently by hand in water not exceeding 30°C.	Hand wash in cool water.	Laver à la main à l'eau fraîche
	Wash in domestic or commercial machine at any temperature, at normal setting.	Machine wash	Laver à la machine
	Do not wash	Do not wash	Ne pas laver

Drying Instructions (Cont'd)

Symbol	Meaning of Symbol	Wording to be used in conjunction with symbol.	Expression correspondant au symbole
	Tumble dry no heat/air dry.	Tumble dry no heat	Sécher à la machine, sans chaleur
	Do not tumble dry.	Do not tumble dry	Ne pas sécher à la machine
	After extraction of excess water, line dry/ hang to dry.	Hang to dry	Étendre
	Hang up the soaking wet article to "drip" dry.	Drip dry	Suspendre pour sécher
	After extraction of excess water, dry the article on a suitable flat surface dry.	Lay flat	Sécher à plat
	Dry in the shade (symbol added to line dry, drip dry or dry flat).	Dry in shade	Sécher à l'ombre
	Do not dry. (To be used with Do not wash symbol).	Do not dry	Ne pas sécher à la machine

Bleaching Instructions

Symbol	Meaning of Symbol	Wording to be used in conjunction with symbol.	Expression correspondant au symbole
	Use any bleach when needed.	Use any bleach when needed.	Avec agent de blanchiment si nécessaire
	Use only non-chlorine bleach when needed.	Use only non-chlorine bleach when needed.	Avec agent de blanchiment non chloré seulement si nécessaire
	Do not bleach.	Do not bleach	Ne pas javelliser

Drying Instructions

Symbol	Meaning of Symbol	Wording to be used in conjunction with symbol.	Expression correspondant au symbole
	Tumble dry at high heat (not exceeding 75°C) at normal setting.	Tumble dry high	Sécher à la machine, température élevée
	Tumble dry at medium heat (not exceeding 65°C) at normal setting.	Tumble dry medium	Sécher à la machine, température moyenne
	Tumble dry at medium heat (not exceeding 65°C) at permanent press setting.	Tumble dry medium, permanent press	Sécher à la machine, température moyenne, sans repassage
	Tumble dry at low heat (not exceeding 55°C) at permanent press setting.	Tumble dry low, permanent press	Sécher à la machine, basse température, sans repassage
	Tumble dry at low heat (not exceeding 55°C) at delicate cycle.	Tumble dry low, delicate cycle	Sécher à la machine, basse température, cycle délicat
	Tumble dry at any heat.	Tumble dry	Sécher à la machine

Ironing Instructions

Symbol	Meaning of Symbol	Wording to be used in conjunction with symbol.	Expression correspondant au symbole
	Iron with or without steam by hand, or press on commercial equipment, at a high temperature (not exceeding 200°C). (Recommended temperature for cotton and linen textiles).	Iron on high	Repasser à fer chaud
	Iron with or without steam by hand, or press on commercial equipment at a medium temperature (not exceeding 150°C). (Recommended temperature for polyester, rayon, silk, triacetate and wool textiles.)	Iron on medium	Repasser à fer moyen
	Iron with or without steam by hand, or press on commercial equipment, at a low temperature (not exceeding 110°C). (Recommended temperature for acetate, acrylic, modacrylic, nylon, polypropylene and spandex textiles.)	Iron on low	Repasser à fer bas
	Do not steam	Do not steam	Ne pas repasser à la vapeur
	Do not iron or press.	Do not iron	Ne pas repasser

3.19 ACCESSORIES:

Fig: Plastic Clip

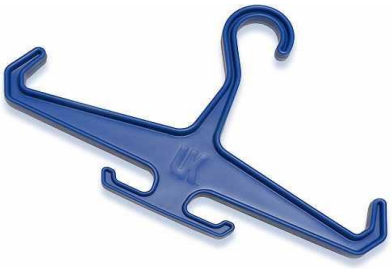


Fig: Hanger






CHAPTER:4 DYEING, PRINTING &FINISHING

Dying

To make finished garments attractive to consumers, they are usually colored, either by dyes or pigments. Based on financial and technical considerations, dyeing can be done at different stages of the manufacturing process.

Printing

With advances in technology, printing is now the simplest and cheapest method used to produce single or multi-colored patterns on fabrics. Although there are a number of printing methods, because of their importance and popularity.

Finishing

The term 'textile finishing' in its widest sense covers all textile wet processes; in this sense, finishing can be said to include preparation and coloration. A more restricted but common

interpretation is that textile finishing is the third and final stage in the treatment of textiles to prepare them for garment manufacturers.

4.1 DYEING :

To make finished garments attractive to consumers, they are usually colored, either by dyes or pigments. Based on financial and technical considerations, dyeing can be done at different stages of the manufacturing process and they can be categorized into five major types:

1. Mass pigmentation,

2. Fiber dyeing, including intermediate products,

3. Yarn dyeing,

4. Piece dyeing, and

5. Garment dyeing.

4.2 GARMENT DYEING:

Garment dyeing is an economical dyeing method, being the cheapest to use when it is practical. It also minimizes the risk of building an inventory that could be affected by changes in color fashions. This method is, however, technically the most difficult to control. The difficulties can include distortion of the garment, seam puckering, poor penetration of color (especially in the seams) and comparatively poor fastness properties. In this method, the garments are loosely packed in a plastic-net bag and are dyed in a rotating drum dyeing machine, which is similar in construction to the domestic washing machine. They may also be dyed in a paddle dyeing machine.

Garment dyeing is traditionally used for non-tailored garments such as pantyhose, gloves and sweaters which, because of their single component nature, are not easily distorted. However, current fashion trends also require some cotton jeans and jackets to be dyed in finished garment form.

In the dyeing process, dyes are used as the major ingredient. The following tables provide a general description and uses of the commonly used dyes for cellulose fibers, protein fibers and synthetic fibers.

4.3 PRINTING:

With advances in technology, printing is now the simplest and cheapest method used to produce single or multi-colored patterns on fabrics. Although there are a number of printing methods, because of their importance and popularity, only the following four methods will be discussed:

1. Roller printing
2. Flat screen printing
3. Rotary screen printing
4. Transfer printing

1. Roller printing

Roller printing is a fully automatic mechanized method in which the printing is done with the aid of engraved copper rollers.

Although roller printing can produce very fine and intricate line designs (e.g., designs with half - tone effects can be produced), the color quality of the printed fabric is rather dull when compared with fabrics produced by screen printing. Hence, roller printing is now only used to print low quality, mass-produced standard fabrics for items such as pajamas and shirts.

4.4 FINISHING :

The term 'textile finishing' in its widest sense covers all textile wet processes; in this sense, finishing can be said to include preparation and coloration. A more restricted but common interpretation is that textile finishing is the third and final stage in the treatment of textiles to prepare them for garment manufacturers or consumers.

The general aim of finishing is to improve the attractiveness and/or serviceability of a fabric.

Finishing can:

- Improve the dimensional stability of the fabric
- Modify the handle of the fabric
- Improve the appearance of the fabric
- Modify the serviceability of the fabric
- Improve the durability of the fabric

The finishing methods can be classified according to the special effects that they produce on the fabrics. These effects include:

1. stabilizing effects
2. textural effects, including garment washing
3. functional effects

STABILISING EFFECTS

It is often vital to incorporate stabilizing effects into fabrics because the shrinkage of a fabric is of primary importance to finished garments. Garments made from fabrics with uncontrolled shrinkage may become too tight to wear after laundering, and may even alter in shape.

Numerous methods may be used to control, or even eliminate relaxation shrinkage.

TEXTURAL EFFECTS

There are a number of processes that modify the texture or the appearance of a fabric so as to increase its appeal to the consumer. Some of the commonly applied processes are considered.

FUNCTIONAL EFFECTS

Specific types of garments should have specific performance characteristics, e.g., rainwear should be water-repellent. Various processes are thus needed to give such required characteristics as are not naturally contained in the fiber or fabric.

4.5 GARMENT WASHING:

In addition to finishing processes on textiles, special effects can also be imparted directly to the garments after manufacture. The garments would undergo washing processes that give them different handle or special color effects. The washing technique has developed and expanded considerably to become a finishing process of its own.

The most common equipment is the rotary drum type garment washer. In Hong Kong, the most popular item by far in garment washing is indigo denim jeans but there is an increasing trend for other casual wear items to be finished using this process.

There are a number of different washing techniques commonly used and the basic procedures where the garments are washed are described in the following sections.

i) Traditional garment wash

This elevated temperature to yield a soft hand. In case of jeans made from indigo or sulphur slasher-dyed denims, it is necessary to remove the sizes (e.g., starch) by an enzyme (amylase) desizing treatment. Color fading will be occurred and the degree will depend on the treatment conditions, such as time, temperature and liquor ratio of washing bath.

ii) Stone wash

To accelerate the washing effect, pumice or volcanic stones can be added for abrasion purposes. There are available today man-made stones of various sizes and shapes. When compared with the traditional garment wash, color fading is more pronounced but less uniform. In addition to the treatment conditions as described for traditional garment wash, the degree of color fading and change of garment hand feel depends very much on the stone ratio to fabric weight which can vary from 0.5 to 3 : 1.

iii) 'White' washes

This category of washing technique is a variation of basic stone wash procedure and is normally applied to indigo-dyed jeans but can also be applied to other vat-, sulphur- or reactive-dyed garments. It can further be divided into two major groups according to its application methods.

The first involves the use of strong oxidizing agents such as sodium hypochlorite or potassium permanganate for bleaching the garments. The use of these agents is to obtain a much lighter shade than the previous two methods. Excess oxidizing agents must be removed after washing to prevent yellowing and tendering of the washed jeans.

In the second group of methods, the pumice stones are first pre-soaked in a solution of strong oxidizing agent (either sodium hypochlorite or potassium permanganate) and are applied to the garments by dry-tumbling. This will result in a localized washing effect with clear blue/white contrast. This is also termed as 'acid wash', 'snow wash' or 'ice wash'.

iv) Enzyme washes

Cellulose enzymes are commonly used in this washing method. These enzymes differ from that of amylase, used for removal of starches, in that they are only selective to cotton of other cellulosic materials. Hydrolysis of the cellulose causes the fiber to become weaker and depending on the degree of treatment, some surface fibers will be removed when subjected to fabric-to-fabric or fabric-to-stone abrasive action. This washing

method tends to produce a more level treatment especially when no stones are added during treatment and the general appearance and hand feel are superior to those of the other methods

CHAPTER:5 COSTING, CALCULATION & CONVERTIONS

Garment costing

Calculating the total cost of the garment is important, to determine its selling price as well as to determine whether the garment is worth manufacturing.

Freight Costing

Both air transport and sea transport are commonly used in delivering goods from one country to another. However, the calculation for the charges of air freight and sea freight are different.

Conversion table

Yard to meter, Inch to Centimeter, Yard square to meter square.

5.1 GARMENT COSTING:

Costing means total cost of garments. In costing every price is included. Costing of a garment is very necessary and important task. In this factory costing is carried out by the merchandising department. Firstly merchandiser contacts with the buyer and collect the order. Then he is provided a sample section according to the buyers specification. The sample section also supplies the fabric consumption. Cost of the fabric is determined according to the consumption. Then he makes the costing of other raw materials, Accessories, trimmings, etc. He adds than all production cost, transport cost, commission(C&F agent) and profit At last total cost of a garment is known as FOB.

Costing of a garment:

Fabric cost

+

Accessories cost + Trimming cost

+

Production cost

+

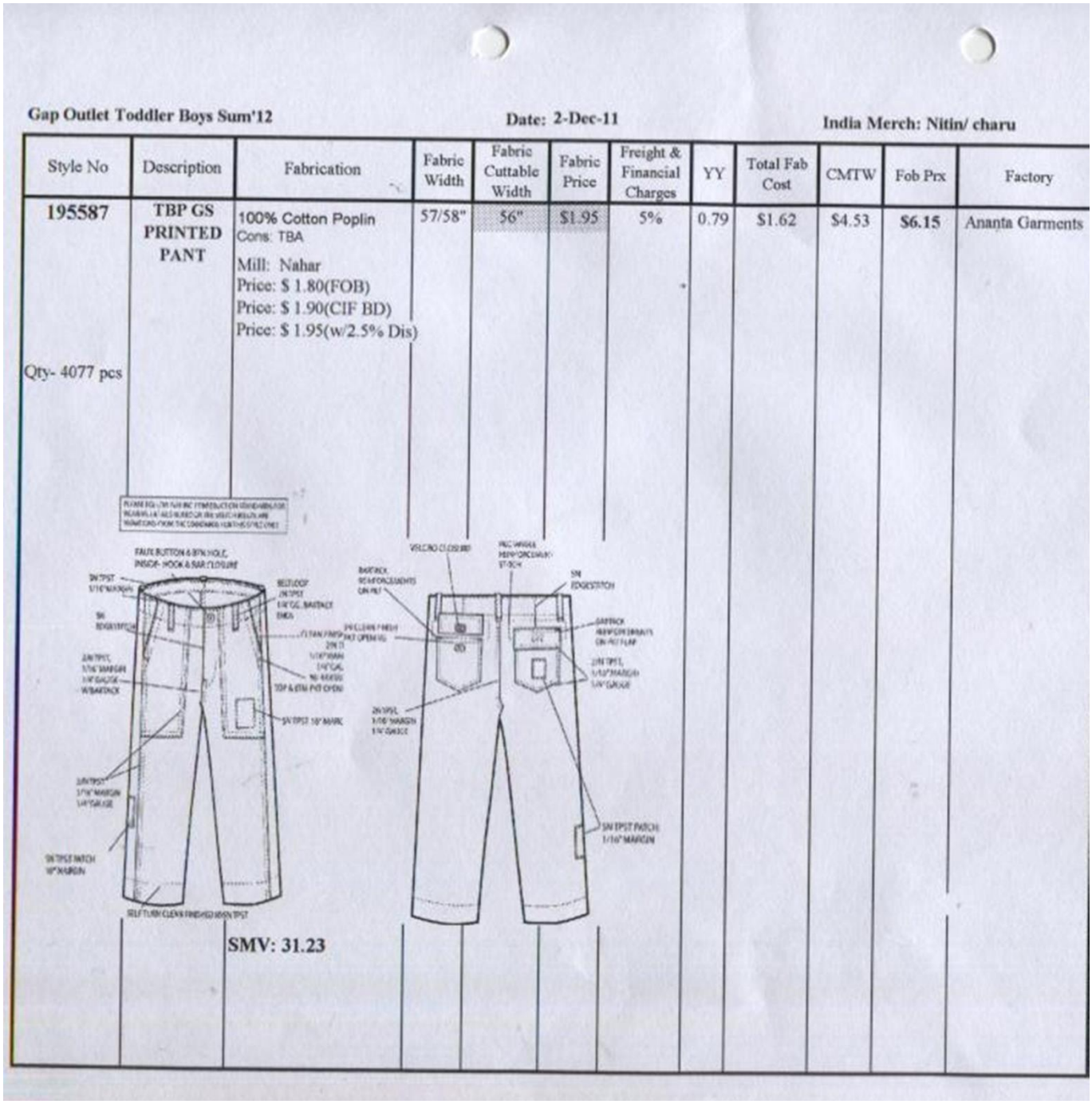
Transport cost

+

Commission

+

Profit



Gap Outlet Toddler Boys Sum'12 Date: 2-Dec-11 India Merch: Nitin/ charu

Style No	Description	Fabrication	Fabric Width	Fabric Cuttable Width	Fabric Price	Freight & Financial Charges	YY	Total Fab Cost	CMTW	Fob Prx	Factory
195587 Qty- 4077 pcs	TBP GS PRINTED PANT	100% Cotton Poplin Cons: TBA Mill: Nahar Price: $ 1.80(FOB) Price: $ 1.90(CIF BD) Price: $ 1.95(w/2.5% Dis)	57/58"	56"	$1.95	5%	0.79	$1.62	$4.53	**$6.15**	Ananta Garments

SMV: 31.23

Fig: Measurement of a Garment

ITEM	Ttl Cost Standard
Main Label	$0.03
Size label	$0.02
Care Label	$0.03
Traceability Label	$0.01
Px Tkt	$0.02
Match Book	$0.03
Size Sticker	$0.03
Packing	$0.08
Thread	$0.18
Pocketing	$0.00
24L Plastic Button(01 Pc)	$0.04
Adj.button	$0.03
Adj.elastic	$0.09
Interlining	$0.03
velcro tap (02 pc)	$0.06
Zipper# 3 - Ykk (3pc)	$0.20
Hook & Eye	$0.15
Print	$0.75
Total trim cost	**$1.78**
CM	**$2.50**
Wash	**$0.25**
CMTW	**$4.53**
Wash cost breakdown	
Sandblast	$0.00
Handsand	$0.00
Scraping	$0.00
Tint	$0.00
Enz wash	**$0.25**
Bleach	$0.00
Grinding at pocket scop	$0.00
P.P. spray	$0.00
Destruction	$0.00
Tacking	$0.00
Whiskers	$0.00
Oven cure	$0.00
Total wash cost	**$0.25**

Fig: Costing of a Garment

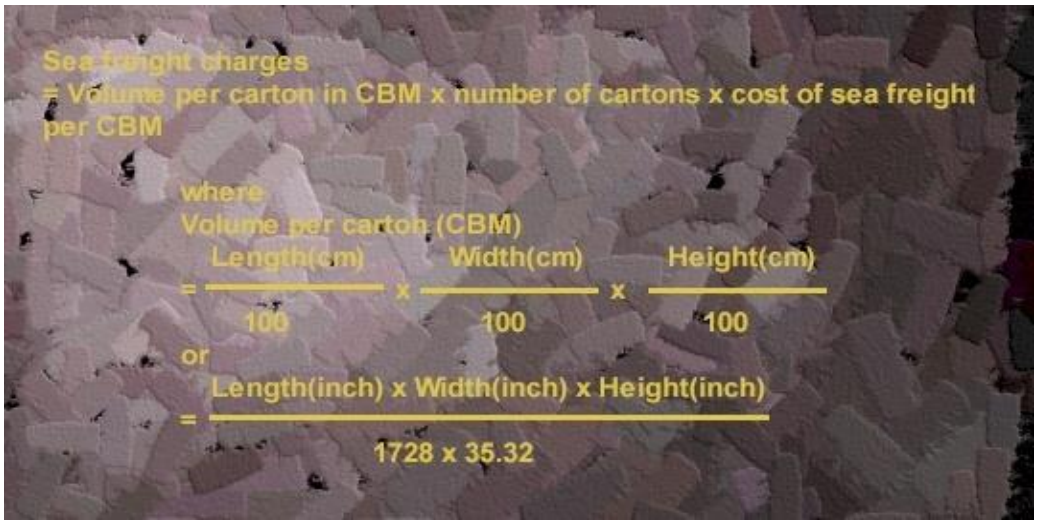
Total FOB: $4.83

5.2 FREIGHT:

Both air transport and sea transport is commonly used in delivering goods from one country to another. However, the calculation for the charges of air freight and sea freight is different, as follows:

1. Sea Freight

Sea freight is charged on a volume (cubic meter or CBM) basis. Firstly, the volume of a carton is calculated by multiplying the length by the width by the height of the carton. Secondly, the freight charges for the delivered merchandise can be calculated by multiplying the volume of a carton by the total number of needed cartons by the price charged per cubic meter (CBM).

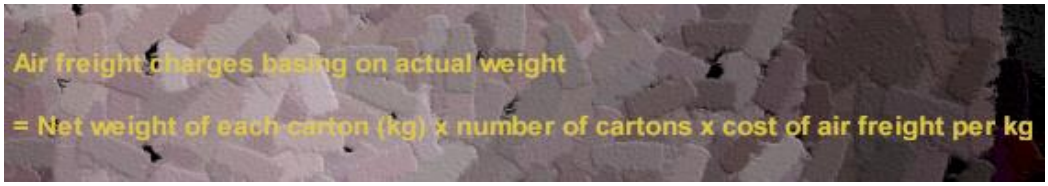


2. Air Freight

Air freight is charged on a weight basis (kg), either by volume weight or actual weight of the freight. In Hong Kong, in most cases, both volume and actual weight are evaluated and the air freight will be charged based on the weight, whichever is greater

Volume weight:

Actual weight:



5.3 CONVERSION TABLE:

QUANTITY	TO CONVERT FROM (Non-SI UNIT)	TO (SI UNIT)	MULTIPLY BY (Approximate)
Linear density	Denier English cotton count(Ne) Linen(Ne) Woolen count Worsted count Metric count (Nm)	Tex Tex Tex Tex Tex Tex	0.1111 Tex = 590.5/Ne Tex = 1654/NG Tex = 1938/woolen ct. Tex = 885.8/worsted ct. Tex = 1000/Nm
Cloth Length	Yard (yd)	Meter (m)	0.9144
Cloth width	Inch (in)	Centimeter (cm)	2.54
Area	Square yard (yd2) Square inches (in2)	Square meter (m2) Square centimeters(CM2)	0.8361 6.452
Weight/Mass	Pounds (1b) Ounces (oz)	Kilograms (kg) Grams (g)	0.4536 28.35
Threads in fabric	Threads per inch	Threads per cm	0.3937
Courses per unit cloth length	Courses per inch	Courses per cm	0.3937
Mass per unit area	Ounces per sq. yard	Grams per sq. meter	33.91

CHAPTER 6: ENVIRONMENTAL ISSUE

INTRODUCTION:

The textile industry, in particular the wet processing sector, has been facing increasing environmental regulations in the past few years. These regulations have been very specific and at fairly stringent levels covering a broad spectrum of raw materials, work-places areas and multimedia reject systems. Textile industry is considered to be one of the industries causing environmental damage. Changes in environmental policy and consumer behaviour have led to strategic changes in the textile industry in countries such as Germany, the UK and the US which, in turn, have influenced textile exports to these countries. In the near future "clean processing" could become an additional requirement for these export markets.

ENVIRONMENTAL POLLUTION IN TEXTILE INDUSTRY :

The undesirable effects of chemicals on the environment do not show up immediately. Thus, long term studies have to be made to understand and solve problems. Most of the industrialised countries have enacted regulations necessitating manufacturers to pay special attention to the minimization of environmental pollution.

Waste water is produced in every textile wet processing stage, namely pre-treatment, coloration and finishing, and is characterized by:

- Color in the effluent
- Trace amount of heavy metals
- high concentrations of dissolved solids, and
- high BOD & COD levels

CONCLUSION

The project has come to a termination finally after lots of thinking, discussion and our uninterrupted trying. We really have worked hard to complete this project well ahead. We wished to make it as a replica of merchandising so that it provides a complete knowledge about merchandising. Though there were some limitations like shortage of time that compelled us to complete the thesis as soon as possible, even then we have tried to give our best.

The study shows that a merchandiser should have some unavoidable qualities, what it demands, his entire functions and some guidelines and instructions to be a good merchandiser. It also makes aware of that a merchandiser should have enough knowledge about Inquiry Sheet, Purchase Order Sheet, Letter of Credit, Inventory Report, Bill of Lading, inspection and other test methods.

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