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CHAPTER-ONE

1. INTRODUCTION

1.1 LEATHER PRODUCTS

“Nothing like leather” is an old adage and a true one. No substance equals it for the construction of articles for personal use.

Leather has played an important role in day-to-day life of mankind from immemorial. Man from the very beginning, has been using animal skins for covering his body & legs from climatic conditions, keeping his provisions of water in goat skins, & making belts from various purpose. From ancient civilization to modern times, leather has been used by the human race one from or the other in its daily life & it is discovered everywhere & it seems that mankind can hardly do without these useful materials.

The products made out of leather land themselves to an enormous variety of both useful & essential items, which are a need & asset in modern living. An extensive range of colors & designs widen the selection range which encourage the prospective consumers to put this products to use in a multitude of ways be it fashionable or functional.

The term “Leather Goods” is applied & confined generally to the articles or goods made mainly of leather & intended for carrying personal belongings, such as the smaller items, which can be carried in hand or shoulder. The variety of leather goods we come across everyday is countless. When there are a variety of articles that differs so much in size, design & method of construction, then it is absolutely necessary to classify them into separate convenient articles of similar kind. In this project report, classification of leather goods has been defined in confined terms.

Now a day because of leather becomes a costly commodity, hence goods made of synthetic or man made fibres are also termed as leather goods, but these goods are

definitely much lower in price compared to “genuine” leather. But the methods of construction or fabrication are the same for both. In this project report, the real leather is taken for consideration.

This project report has covered in confined from the very beginning operation of “**WORKING WOMEN’S SHOULDER BAGS**” production (selection of leather) to the finishing operation packing. Also the necessary machineries for manufacturing of wrist watch belts are defined through each operational process whenever the processes are examined.

1.2 HISTORY OF LEATHER PRODUCTS

The making of leather product is today a considerable subject, conducted in most of the principal cities of the world. It is an industry which had its beginning in the early civilization. Specimens of ancient work are preserved in the museums, many having been recovered from the tombs of the early kings of Egypt. The industry has progressed through the ages down to the present day, with an indication that it will continue for centuries to come. However, here we presented century wise a brief history of different leather products.

In Egypt, leather artifacts were found in tombs built as early as 3000B.C. evidence that the pharaohs wore leather sandals.

During 750B.C. the Romans made leather footwear, clothing & ornaments. At that time, Teutonic tribes in the cold north of Europe wore whole garments of leather. And the Roman soldiers came back to Rome wearing leather trousers called braccæ.

By the thirteen century, the Romans introduced money bags. They also introduced the coin purse.

By the fifteen century, many homes contained finely detailed Spanish leather, which was used in wall hangings, upholstery, book covers, vests & jackets.

In sixteen century, a special type of leather called Morocco leather was tanned from goat skin & it was used in many purposes. We also know that Englishmen drank their beer out of mugs that were made from leather.

The 1990s:

In the early 1990s, upon the advent of the open automobile, rich men wore long motoring coats made of leather to protect them from the elements. They also wore leather trench coats fashioned after the British military officer's coat.

The 1920s:

During the 1920s, women's leather & suede sports were began to appear, both in Europe & the United States. Also during the 1920s interior designers namely Corbusier & Marcel Breuer integrated cowhides with their polished steel furniture during the Bauhaus period.

The 1930s:

In France, in 1930, the designer Paquin created a suit using goat suede & wool.

The 1940s:

During the 1940s & 1950s, shades of tan, rust & brown were predominant in suede for both & woman. One of the most popular jacket styles in 1949s was the aviator jacket. Even die-hard army commanders like general pattern wore then during the world war-I I.

The 1950s:

Bonnie Cashion was the first American designer to create off-white cabretta leather coat. In early 1960s, designers began to provide new colours in leather.

The 1960s:

In 1960, designer's created many leather & suede garments, in combination with fabric & knit, as well as leather & suede ensembles. Ornamented leather garments were fashionable in 1960 century probably the most popular coat during the late 1960 century was the embroidered goat skin jacket by Mallory.

The 1970s:

The 1970 century saw a return to the more sophisticated leather garment. By 1978, Claude Montana was quickly establishing himself as the king of women's leather apparel design.

The 1980s:

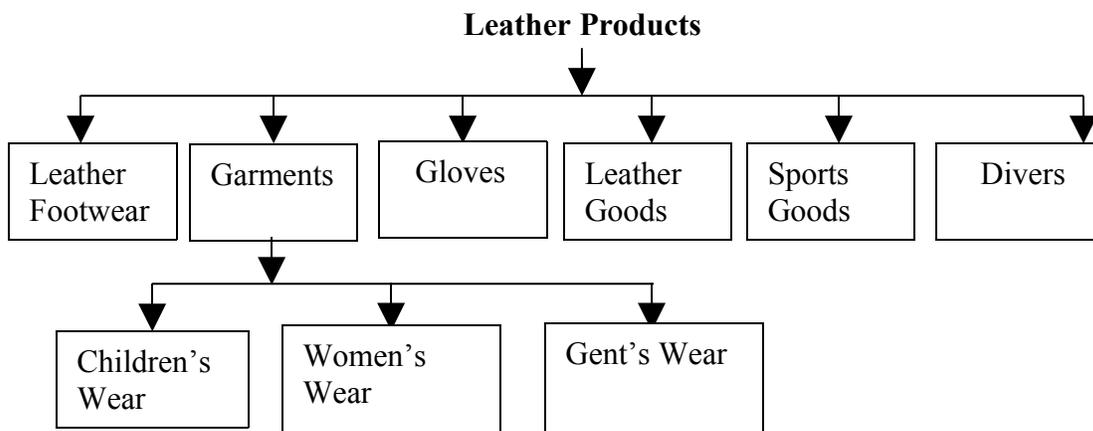
By the 1980s, leather to be a luxury item. Designer's used it to make fashionable colours leather goods; pants, suit, leather coat dress, leather pouf dress etc are the gifts of the year likely 1980.

The 1990s:

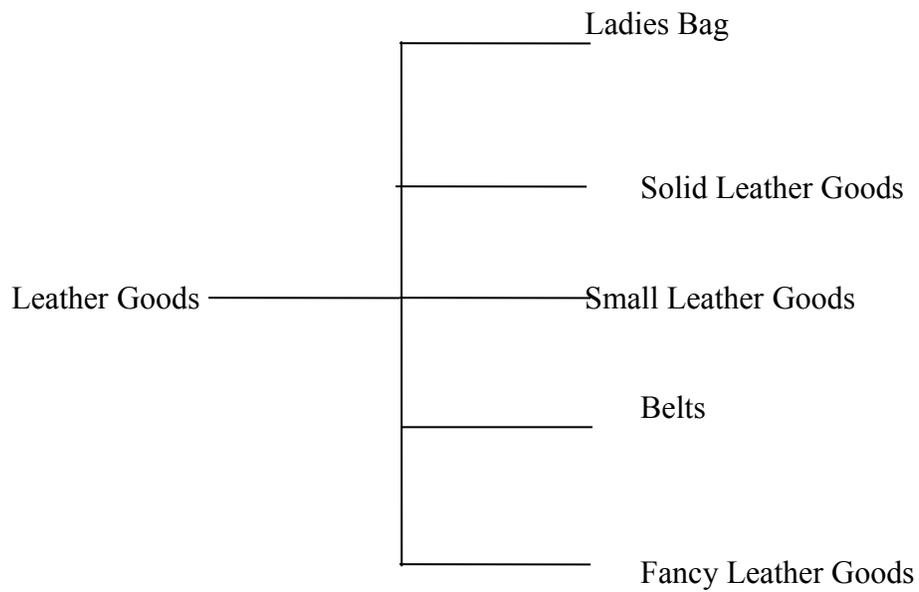
Novelty skins were becoming popular in Italy & France in the early age of 1990. Different luxurious leather products was created, from the designer to budget category. The history of leather products, actually an unbelievable length of time, from the earliest time to today's sophisticated fashion. The art of leather products manufacturing will add a new dimensions to the world by the time 2010.

1.3 CLASSIFICATION OF LEATHER PRODUCTS

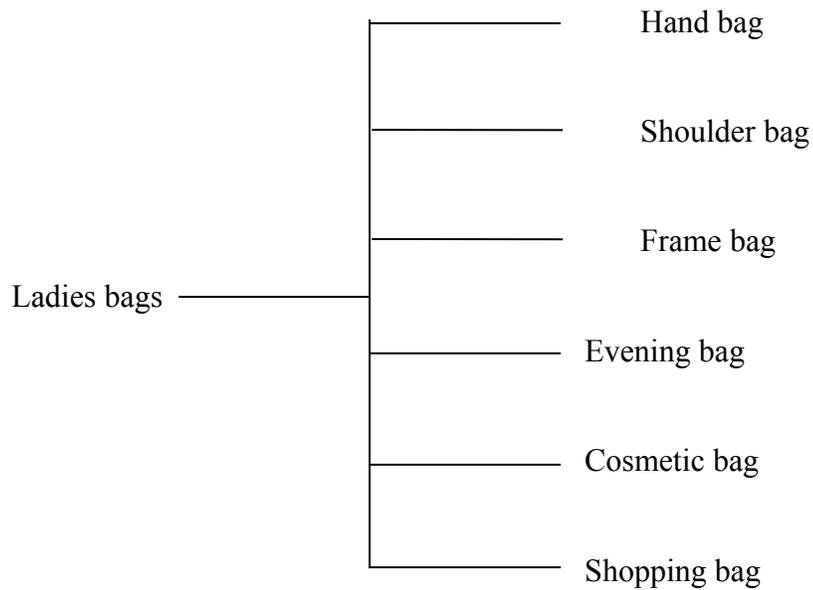
A leather product means any type of footwear, goods or leather apparel. However, the well-known classifications of leather products are given below.



CLASSIFICATION OF LEATHER GOODS:



CLASSIFICATION OF LADIES BAGS:



1.4 GENERAL CLASSIFICATION OF LEATHER GOODS

Now we will study about leather goods. Leather goods refer to articles made mainly of leather & intended for the containing of personal belongings. Some leather goods are small in value & some special forms of leather goods are purely decorative. However, leather goods are classified according to the points into consideration.

- a) According to volume.
- b) According to the degree of reinforcements.

a) According to the volume, the different classes of leather goods are as follows.

- 1) Small leather goods.
- 2) Medium leather goods.
- 3) Heavy leather goods.

1) Small leather goods:

The goods are made from leather having sometimes of (0.5-1.00) mm falls under this category. Sometimes these goods are called Fancy leather goods or personal leather goods.

2) Medium leather goods:

Medium leather goods indicates the proposal thickness of (0.8-1.2) mm. ladies bags, side bags, shoulder bags etc are called medium leather goods.

3) Heavy leather goods:

These are made generally from cow & butt hides which are strong & durable. The hide has distinct surface grain patterns & the size ranges from 20 to 30 sft. These types of goods are made from heavy leather bearing the thickness of (1-1.5) mm. Suitcase; Luggage etc are the examples of the class.

b) According to the degree of reinforcements being used, leather goods are three types. Namely:-

- 1) Limp leather goods.
- 2) Semi-Limp leather goods.
- 3) Stiffened leather goods.

1) Limp leather goods:

The leather goods are made without applying any internal stiffener or reinforcement, are simply known as the limp leather goods. Most pocket goods are made in this way.

2) Semi-Limp leather goods:

The articles for various reasons have a paper or stiff fabric material as a foundation between the leather & lining, so imparting a degree of reinforcement or firmness. These goods belong to the class of semi-limp leather goods or semi-stiffened leather goods.

3) Stiffened leather goods:

Others are built up on a foundation of stout pulp board, so making the completed article quite coming under the heading of stiffened leather goods.

Stiffened leather goods are sub-divided into the groups, such as:-

- # Moulded leather goods.
- # Box or Built up leather goods.

Moulded leather goods:

Moulded work is the class of goods of the container type, in which the foundation is made by gluing successive layers of paper around a block of the required shape & size; the “Moulding” thus formed being covered. Moulded work is within the province of both small & large goods.

Box or Built up leather goods:

The articles are made on a foundation of sheet pulp board, the pieces being cut to definite sizes & “Built-up” to form a box, then strengthened with fabric & afterwards

covered with leather & lined. These classes of goods are said to box or built-up leather goods. They are subjected to fancy leather goods.

KEY POINTS TO BE REMEMBERED DURING CUTTING:

1. Make sure that it is the correct pattern of the article you desired to cut,
2. Examine for defects, size and shape of hides/ skins,
3. Selective cutting must be practiced; the best part of the article demands the best part of hide/ skin.
4. visible parts should have good grain surface and section covered could contain grain defects,
5. Good cutting begins with a sharp knife. Less sharpened knife or blunt knife cuts the leather with ragged edge,
6. The angle between the edge of the knife and the cutting board depends up on the hardness of the materials being cut. A small angle for a very soft materials like fabric and a greater angle for hard material like leather and reinforcements, may be used,
7. Over cutting and under cutting must be avoided.
8. Patterns must be placed in such a way to ensure quality, economy and minimum wastage.
9. Straight – line cuttings must be done first with steel scale/ruler Curved line cuttings or irregular shapes must be cut with templates,
10. Cutting, must be done on a smooth surface of soft wood or plywood or galvanized iron plate or zinc plate for accurate cutting,
11. Pattern must be placed on the leather and initialize cutting from left to right,
12. Start cutting from left top corner of the pattern and end at the right bottom corner, Use the least number of cutting strokes,

#Hand skiving:

Hand skiving requires a greater deal of skill. It is done on a smooth surface like granite stone, as it does not absorb either dyes or moisture. Smooth stones enable smooth skiving. Skiving is done with a pairing knife in which one side of the edge is beveled, having high quality tempered high speed steel blade of about 2.5cm wide, oblique end, slightly curved and sharpened to a bevel on one face. The knife is held in such a way that it removes the required thickness at the edges. Care must be taken that the edge of the component are thinned down more than the required thickness as it may weaken the components and also make the components unfit for fabrication.

2. MACHINE WORK IN CUTTING ROOM:

In large-scale industries, different types of machines do cutting room operations.

Those machines are mentioned below:

- a) Clicking Machine
- b) Splitting Machine
- c) Skiving Machine
- d) Platting/ Embossing
- e) Strap Cutting Machine

a) Clicking Machine

The sequence of operations to fabricate an article begins with the clicking machine. Different panels or components of a leather goods product are cut in this machine. Here, a pair of knives is used which is in the shape of patterns. So a set of dies is required for each article. The leather is placed one by one on the cutting Teflon board of the machine and cutting dies with the shape of component is placed on leather and by clicking.

On an average of 300 components can be cut in an hour. This machine could be either mechanical or hydraulic operation. According to the size of patterns and dies we have to use different machines, which have different bed area and pressing power.

The cutting dies are fabricated using the patterns of different components viz. Front, Back Flap Gusset Base, and so on. The cutting knife is fabricated from steel, with thickness depends upon the components size to be cut.

The press knife (dies) should be,

- Sharp edge in order to give a clean edge cut
- Kept separately and not stacked one over the other
- Stored and handled to ensure that fine edges are not damaged.

b) Splitting machine

Splitting is the second machine operation after cutting. Leather that is available for leather goods productions are mostly found to be thicker than the requirement. Splitting enables reduction of thickness of the leather components to the required degree that helps early in assembling of components. Excepting heavy leather goods, medium and small leather goods require leather components of thickness less than 1.00mm. so, splitting is necessary for the leather that is obtained from the market having thickness of 1.2mm and more. The splitting can be done to a thickness that can be obtained in 0.5mm using a presser roller and 0.2mm using a presser bar. The top grain layer is used in the fabrication while the bottom-split layer is left off.

C) Skiving machine

The third unit operation inside cutting room is skiving. The term skiving means decreasing or reducing the substance at the edge of the components of leather mostly at the flesh side. Skiving is synonymous with the turned over edge, folded edge and budded edge construction work in leather goods technology and this type of construction is mostly practiced as it adds not only elegance at the articles but avoid fraying at the edge.

Skiving is an operation that is done either by machine or by hand. Hand skiving is a labor process and needs high skill to be perfect and to acquire uniform skive edge. In other hand it takes more time to produce bulk quantity, today in modern factories skiving

operation is done by machine very accurately and at the same time it is useful to increase productivity.

In the operation of skiving only skilled person can operate this machine as the quality of skiving depends on various adjustments and operating techniques. Depending on the production, there are different types of designs of pressure-foot. Using this pressure-foot and adjusting its angular point on the machine can obtain a variety of skiving pattern.

There are three types of skiving, which is commonly used in **SHOULDER BAGS** production.

1. Edge skiving or feather edge skiving:

This is thinning down on the double width of the required edge. By adjusting the pressure foot adjusting screw to required depth of skiving, fine edge skiving is obtained. Fine edge skiving is done in most of the articles.

2. Dart Skiving (Parallel Skiving)

Narrow thinning down some of the thickness of the edge. The substance is removed parallel with uniform thickness. The skiving is continued till the end of the component is reached. Parallel skiving is used in turn over works.

3. Bevel skiving:

Thinning down of variable thickness (thickness from edge to zero). By adjusting the presser foot and the feed roller at the suitable angle, bevel skiving is obtained. This type of skiving is most suitable for shoulder bags making.

d) Plating/embossing:

Plating is done in hydraulic press by which has a polished plate that can be heated to the desired temperature.

Plating is necessary for some components, which have, fold marks to give perfect appearance to the cut components. By changing the plate different designs can be embossed on the components.

e) Strap cutting machine

Shoulder bags production, are cut using strap cutting machine. The machine is fitted with circular disc knife with spacers in between them. The width between knives can be adjusted using suitable spacers.

6) Cementing:

Cementing is an important operation the manufacture of Shoulder bags as at this stage only, the different components of leather and reinforcements are joined together by means of application of an adhesive and on the strength of the joints depend the very existence or in other words, the retention of the shape of the article, For further strengthening, the joined parts are invariably stitched.

Cement or adhesive used in the fabrication of Shoulder bags of two type's i.e.

a) Temporary adhesive

When stitching does the final assembly, temporary adhesive is just hold the various parts – temporarily.

b) Permanent adhesive

Where stitch is not possible/ not used for decoration there should be used permanent adhesive.

Rubber in the form of rubber solution, (rubber dissolve in petrol) in the form of natural latex or in some other water based emulsion systems is used generally. It is applied on both sides and after allowing drying a little to have a dry tack, the surfaces are

struck or hammered together lightly. These adhesive are applied by means of brush. Just like edge dying, when a series of edges of a number of articles have to be cemented, they are arranged in a row so that the edge of the one component lies next to the edge of the others and so on arranged on the bench. The brush with the cement is then used to coat all the edges in one operation and the stack passed on to the next table where another side of the stacked edges will be given the coating of adhesive. Thus in one or two operations, we are able to cover edges of say two or three dozen articles at a time, thereby cutting down the time factor.

Process control:

1. The brush should be clean.
2. Ensure that the bowl is clean without any contaminants.

Procedure:

1. Choose the right brush and adhesive.
2. Apply adhesive at the marked places of both components to be attached.
3. Apply adhesive fully on the leather boards and upper area to be attached (in case of leather board).
4. Attached the components together.
5. Check for proper attaching.
6. Hammer the attached portion well.

Acceptance criteria:

1. Apply the adhesive evenly.
2. Component should be attached perfectly to the marking.

7) Edge Folding:

Folding is one of the operations that come across frequently in the course of fabrication of Shoulder bags. It is simply an operation or device of folding the edge of the leather uniformly along the edges to a pre-determined width either in straight line or in curves. The folding is done to improve overall appearance of the product.

Normally a skived edge is coated with cement as stated in the cementing operation and then with the help of the bone folder, the edge is folded over along the entire length of the edge of the leather. Sometimes, it is folded over foundation or leather itself. For greater volume of work, folding machines are used. The machine is a simple treadle operated press with a work table attached with guide plates and the leather edges can be folded to any desired width by adjusting the guide plate. When the treadle is pressed by means of a lever rod, the guide bar rotates through a fixed angle taking along with it the leather, thereby simultaneously folding the leather edge. When the foot lever is released, the guide bar springs back to horizontal position and the folded leather piece is removed and a new one inserted.

8) Fixing of accessories & fittings

Fixing of locks, decorations and other fittings is done manually or by machine. Fixing operation is done with two types of tools one with hollow dip at one side and the other with ting protruding nipple at the end. When fixing the decoration, care is taken to hammer the of accessories and fittings as heavy hammering may damage the lock, decoration, etc.....

3.5 ASSEMBLING

After pre-assembling (preparation) process is done, the next step is assembling various individual to get structure of articles. To assemble this component before cementing of edges that are folded at the stage of preparation, a grain part of fold edge are properly scratched to ensure bonding strength of adhesive and then is applied adhesives gently. Applying of adhesive on unnecessary part of component affects cost, time and quality of production. After a while component affects cost, time and quality of production. After a while components stack together and hammered gently and transferred to stitching operation.

1. Stitching

Stitching is the most important operation that decides the quality of the end products. So, stitching is tested on a waste piece of leather before stitching on the product.

Basically in Shoulder bags production **Flat Bed** sewing machine is used.

To stitch this type of small goods, we have to use **light duty machines**.

Flat bed sewing machines are provided with two needles to make two parallel lock stitch seams and also, flat bed machine is provided with a zigzag stitching operation for decoration.

* Needles

In production of Shoulder bags selection of proper needle for appropriate operation gives a good appearance at the end product.

Needle is an important tool of the sewing machine which pierces the material to be stitched and facilitates to stitch during stitching the selection of correct needle depends upon the needle size needle system as well as the needle point.

Needles are specified by-

- a) Needle system
- b) Needle size/Thickness
- c) Needle point

THREAD:

Almost all garments produced have one component in common: the sewing thread. Whilst sewing threads are usually a relatively small percentage of the cost of a garment, they have an extremely significant influence on the appearance and durability of the finished product. The production of sewing threads is an extensive and complex subject.

The following types have been offered for shoulder bags.

Mercerized Cotton	:	Approximately 10% stronger than normal cotton.
Nylon	:	Its main advantage is greater tensile strength permitting a finer thread and finer needle for a seam of the same strength.
Nylon / Cotton	:	Smooth running and soft.
Polyester / Cotton	:	Superior in strength to cotton. The cotton covering provides improved flow through the needle, reduced cutting of the leather by the polyester and also protects the stretches during heat treatments.
Linen thread, double twist	:	This is made from chrome tanned splits. It is mainly used for decoration.

In an extensive series of tests, the polyester / cotton threads gave the best overall performance with request to seam strengths both initially and after various ageing tests. Cotton suffered considerable losses in strength on artificial ageing and storage.

Relation between needle, thread & material

Thread Thickness TKT No.	Light Material		Medium to heavy material	
	Needle Size		Needle Size	
	NM	SIZE	NM	SIZE
80	65-70	9-10	70-80	10-12
60	80-90	12-14	90-100	14-16
40	90-100	14-16	100-110	16-18
30	110-120	18-19	120-130	19-21
35	110-120	18-19	120-130	19-21
20	120-130	19-21	130-140	21-22
25	130-140	21-22	140-160	22-23
15	130-140	22-22	140-160	22-23
10	140-160	22-23	160-180	23-24
8	160-170	23-24	180-200	24-25

CHAPTER - TWO

Manufacturing of Working Women's Shoulder Bag

SAMPLE NO- A

2.1 PERSPECTIVE DRAWING



BACK SIDE VIEW

2.2 RAW MATERIALS:

Leather materials: Aniline finished cow leather.

Substance: 1.1
Color: Black
Lining material: Fabrics
Color: Same as Leather.
Pattern Paper :(200 gm and 500 gm).

2.3 TOOLS:

1. Designing Knife.
2. Scale.
3. Measuring tape.
4. Awl.
5. Cutting knife.
6. Thickness gauge.
7. Scissor.
8. Creasing tools.

2.4 MACHINE & EQUIPMENTS:

Splitting Machine.
Skiving Machine.
Flat bed swing Machine.
Cylinder bed swing machine.
Thread
Adhesive.
Needle.
Celluloid.

2.5 MEASURING INSTRUCTIONS:

2.5.1 OUTER LEATHER:

Serial no	Component	Exact size in cm	Folding allowance	Extra cutting allowance	No of pieces
01	Outer top front & back	32.5×28	10 mm, all sides		02
02	Gusset	10.5×28	10 mm, all sides		02
03	Shoulder strap	66×2	10 mm, all sides		02
04	Zipper strap	28×2	10 mm, all sides		02
05	Bottom	28×9.5	10 mm, all		01

2.5.2 LINING MATERIALS:

Serial no	Component	Exact size in cm	Folding allowance	Extra cutting allowance	No of pieces
01	Outer top front & back	32.5×28			01
02	Gusset	10.5×28			01
03	Bottom	28×9.5			01

2.5.3 OTHER COMPONENTS :(EVA SHEET)

Serial no	Component	Exact size in cm	No of pieces
01	Outer top front	32.5×28	01
02	Outer top back	32.5×28	01

2.6 OPERATIONAL SCHEDULEL:

2.6.1 CUTTING:

- Leather cutting using cutting pattern.
- Lining cutting.
- Stiffener cutting.
- Foam cutting.

2.6.2 SPLITTING:

- Splitting Instructions:

Serial no	Component	Thickness
-----------	-----------	-----------

01	Outer top front	1.2
02	Outer top back	1.2
03	Gusset	1.2
04	Shoulder strap	1.2
05	Zipper stand	1.2

2.6.3 Skiving instruction:

Serial no	Component	Side to skived	Width	Thickness	Types of skiving
01	Outer top front &back	All sides		0.5	Parallel
02	Gusset	All sides		0.5	Parallel
03	Zipper stand	All sides		0.5	Parallel
04					

2.7 ASSEMBLING &STICHING:

2.7.1 Outer Front Preparation:

By keeping the working pattern on flesh side, trace the out line on all four sides.

Apply cement on the four sides and lining to a width of 10 mm from the edge on all four sides. Fix the lining on the reinforcement. Now apply cement on the other sides of reinforcement to a width of 5 mm on all four sides.

Apply cement inside the trace mark of the outer front to a width of 5 mm on all four sides. Fix the foam inside the trace. Now fix the lining assembly on the outer front. Stitch the top sides at 2.5 mm width from the edge.

2.7.2 OUTER BACK PREPERATION:

Keeping the working pattern on the flesh side trace the out line and cut the zipper slot.

Apply cement around the zip slot to a width of 5 mm on all four sides and fix the zipper.

Apply cement on the reinforcement and lining on four sides to a width of 10 mm. Fix the lining on the board. Apply cement to a width of 5 mm on the other side of reinforcement.

Apply cement inside the trace on the outer back; fix the foam bellow the zip assembly. Stitch around the zipper slot. Apply cement to a width of 18 mm on the topside and fold.

2.7.3 GUSSET PREPERATION:

Joint the gusset parts by stitching 10mm width from the edge. Apply cement on the joining, open the joints and hammer. Using the working pattern, trace the out line on all four sides. Apply cement to a width of 10 mm inside the trace. Apply cement to a width

of a 10 mm on the lining on all four sides and fix it to the gusset. Stitch the bottom and topsides 2.5 mm width from the edge.

2.7.4 SHOULDER STRAP PREPERATION:

Joint the shoulder strap and trace a line at mid point. Apply cement and fold the left and right sides. Stitch on two sides 2.5 mm width from the edge.

2.7.5 FINAL PREPERATION:

Apply cement to a width of 5 mm on 3 sides except top of the outer front assembly.
Apply cement to a width of 5 mm on 2 sides of the gusset assembly. Apply cement to a

width of 5 mm on the back assembly. Now fix the gusset assembly on the outer front and back. Now stitch the following the instructions.

2.8 AVERAGE TIME FOR COMPLETION:

Serial no	Operation Description	Time suggested (min)	Remarks
01	Basic Pattern making	60	

02	Working Pattern making	50	
03	Cutting pattern making	50	
04	Leather cutting	50	
05	Lining cutting	30	
06	Inspection	30	
07	Leather splitting	30	
08	Leather skiving	30	
09	Assembling & stitching	180	
10	Trimming & Creasing	10	
11	Finishing	20	
12	Packing	10	

Total time: 550 minutes or 9 hours and 10 minutes

SAMPLE NO-B

2.1 PERSPECTIVE DRAWING:



FRONT VIEW



BACK VIEW

2.2 RAW MATERIALS:

Synthetic materials:

Substance: 1.1

Color: Black

Lining material: Fabrics
 Color: Same as Leather.
 Pattern Paper ;(200 gm and 500 gm).

2.3 TOOLS:

1. Designing Knife.
2. Scale.
3. Measuring tape.
4. Awl.
5. Cutting knife.
6. Thickness gauge.
7. Scissor.
8. Creasing tools.

2.4 MACHINE & EQUIPMENTS:

Splitting Machine.
 Skiving Machine.
 Flat bed swing Machine.
 Cylinder bed swing machine.
 Thread
 Adhesive.
 Needle.
 Celluloid.

2.5 MEASURING INSTRUCTIONS:

2.5.1 Outer Synthetics

Serial no	Component	Exact size in cm	Folding allowance	Extra cutting allowance	No of pieces
01	Outer top front & back	47×27	10mm,all sides	-	01
02	Gusset	17×11	10mm,all sides	-	02
03	Shoulder strap	60×2	10mm,all sides	-	02
04	Zipper strap	27×5.5	10mm,all sides	-	02

2.5.2 LINING MATERILAS:

Serial no	Component	Exact size in cm	Folding allowance	Extra cutting allowance	No of pieces
01	Outer top front	47×27	-	-	01

	&back				
02	Gusset	17×11	-	-	02
03	Zipper strap	27×5.5	-	-	02
04			-	-	

2.5.3 OTHER COMPONENTS :(FOAM)

Serial no	Component	Exact size in cm	No of pieces	Extra cutting allowance
01	Outer top front& back	47×27	01	-
02	Gusset	17×11	02	-

OPERATIONAL SCHEDULE:

2.6 CUTTING:

Synthetic cutting using cutting pattern.
Lining cutting.
Foam cutting.

2.7 SPLITTING:

Splitting Instructions:

Serial no	Components	Thickness
01	Outer top front	1.1
02	Outer top back	1.1
03	Gusset	1.1
04	Shoulder strap	1.1
05	Zipper stand	1.1

2.8 SKIVING INSTRUCTION:

Serial no	Component	Side to skived	Width	Thickness	Types of skiving
01	Outer top front	All sides	11 mm	0.5	Parallel

	&back				
02	Gusset	All sides	11 mm	0.5	Parallel
03	Zipper stand	All sides	10 mm	0.5	Parallel

]

2.9 ASSEMBLING &STICHING

2.9.1. Outer top Front & back Preparation:

By keeping the working pattern on flesh side, trace the out line on all four sides.

Apply cement on the four sides and lining to a width of 10 mm from the edge on all four sides. Fix the lining on the reinforcement. Now apply cement on the other sides of reinforcement to a width of 5 mm on all four sides.

Apply cement inside the trace mark of the outer front to a width of 5 mm on all four sides. Fix the foam inside the trace. Now fix the lining assembly on the outer front. Stitch the topsides at 2.5 mm width from the edge.

2.9.2 GUSSET PREPERATION:

Joint the gusset parts by stitching 10mm width from the edge. Apply cement on the joining, open the joints and hammer. Using the working pattern, trace the out line on all four sides. Apply cement to a width of 10 mm inside the trace. Apply cement to a width of a 10 mm on the lining on all four sides and fix it to the gusset. Stitch the bottom and topsides 2.5 mm width from the edge.

2.9.3 SHOULDER STRAP PREPERATION:

Joint the shoulder strap and trace a line at mid point. Apply cement and fold the left and right sides. Stitch on two sides 2.5 mm width from the edge.

2.9.4 FINAL PREPERATION:

Apply cement to a width of 5 mm on 3 sides except top of the outer front assembly. Apply cement to a width of 5 mm on 2 sides of the gusset assembly. Apply cement to a width of 5 mm on the back assembly. Now fix the gusset assembly on the outer front and back. Now stitch the following the instructions.

2.10 Average time for completion:

Serial no	Operation Description	Time suggested (min)	Remarks
01	Basic Pattern making	60	
02	Working Pattern making	55	
03	Cutting pattern making	60	
04	Synthetic cutting	60	
05	Lining cutting	30	
06	Inspection	30	
07	Assembling & stitching	200	
08	Trimming & Creasing	10	
09	Finishing	20	
10	Packing	10	

Total time: 535 minutes or 8 hours and 55 minutes

CHAPTER -THREE

QUALITY CONTROL

3.1 DEFINITION OF QUALITY:

The word quality has multiple meanings. Two of those meanings dominate the used of the word:

Quality consists of those product features, which meet needs of customers and thereby provide product satisfaction.

Quality consists of freedom deficiency.

To explain these dominate meanings it is first necessary to define the key words.

PRODUCT:

“Product “is the output of any process. It consists mainly of goods, software, and services. “Goods” are physical things: pencil, color television sets, office buildings. “Software” has more than one meaning. A major meaning is instruction programs for computers. Another major meaning is information generally: reports, plans, instructijon, advice, commands. “Service” is work performed for someone else. Entire industries are established to provide services in such forms as central energy, transporation, communication, entertainment, etc.

PRODUCT FEATURE:

A “Product feature” is a property, which is possessed by a product, and which is intended to meet certain customer’s needs. Product features may be technological in nature, e.g., fuel consumption of a vehicle, dimension of a mechanical component, viscosity of a chemical, uniformity of the voltage of an electric power supply. Product features may also take other forms, e.g.. Promptness of delivery, ease of maintance, courtesy of service.

CUSTOMER:

A customer is someone who is impacted by the product . Customers may be external or internal.

A. EXTERNAL CUSTOMER:

These are impacted by the product but are not members of the company which produces the product. External customers included clients who by the product, government regulatory bodies, the public, etc.

B. INTERNAL CUSTOMER:

Within any company there are numerous situation in which departments and persons supply products to each other. The recipients are often called “customers” despite the fact that they are not customers, in the dictionary sense, i.e., they are not clients.

CUSTOMER NEEDS:

All customers have needs to meet, and the product features should be responsive to those needs. This applies both external and eternal customers. In the case of external customers, the response determines product satisfaction, and in sequence, product salability. In the case of eternal customers , have the response determines the company’s competitiveness in productivity, quality , etc. as well as the morale among internal departments.

3.2 PRODUCT SATISFACTION:

Product feature, which do response to customer needs, are said to provide “Product satisfaction” a state of affaires, which is decisive as to salability of the product. The competitive markets there are multiple suppliers of the product features. The resulting variation leads to degrees of product satisfaction, and to associate differences in market share for the respective suppliers.

GRADE:

A popular name for degrees of product satisfaction is “grade”. Some times called “quality of design”. Products whose features are perceived as meeting customer needs to a superior degree are called “higher grade” products. Sometimes these grades are established formally, as in hotel services or cuts of meats.

3.3 QUALITY PLANNING:

This is the activity of developing the products and process required to meet customers’ needs. It involves a service of universal steps:

1. Determine who are the customers.
2. Determine the needs of the customers.
3. Develop product feature, which respond to customers needs.
4. Develop processes, which are able to produce those product features.
5. Transfer the resulting plans to the operation.

For an elaboration of the quality planning process.

QUALITY CONTROL:

This is to used by the operating forces as an aid to meeting the product and process goals. It is based on the feedback loop, and consists of the following steps:

1. Evaluate the actual operating performance.
2. Compare actual performance to goals.
3. Act on the difference.

3.4 QUALITY IMPROVEMENT:

The third member of the quality trilogy aims to attain levels of performance, which are unprecedent –levels which are significantly better than any past levels.

To improve the quality planning process requires several major changes:

1. A revision in priorities so that the planners are given enough and resources to do a more thorough job quality planning.
2. A more structure approach to quality planning, company wide planning for quality.
3. A broader database for quality planners, derived from “lessons learned”, i.e., feedback from problems encountered and solved during the control process and especially during the improvement process. The concept of “lessons learned”.

3.5 FITNESS FOR USE:

It would be most convenient to have some short phrase which is universally accepted as a comprehensive definition of quality, i.e., so that it includes the products features which leads to product satisfaction, and in addition includes free from deficiency. Various such phrases have been proposed by practioners none has achieved universal acceptance.

3.6 PRODUCT FEATURES AND QUALITY CHARACTERISTICS:

Human needs are extremely divers, and this has lead to a corresponding proliferation of product features and quality characteristics. This proliferation extends to multiple human displays. As the following example:

Technological: Hardness, inductance, acidity, etc.

Psychological: Taste, beauty, status, etc.

Time- oriented: Reliability, maintainability, etc.

Contractual: Guarantee provision, etc.

Ethical: Courtesy of sales personnel, honesty of service shops, etc.

3.7 PARAMETERS OF FITNEES FOR USE:

Beyond those product features which bear directly on product satisfaction there are additional aspects of the product, which also contribute to fitness for use. These additional aspects are often called “parameters’ of quality. An example is the time related “abilities”.

For products which are consumed promptly fitness for use is determine by (1) the adequacy of the product design and (2) the extend to which the product originally conforms to that design. For long-lived product, some new time oriented factors come into play: availability, reliability and maintainability. These abilities are closely interrelated and vital to fitness for use.

3.8 CUSTOMER INFLUENCE ON QUALITY:

Aspect of the problem	Original equipment manufactures	Dealers and repair shops	Consumers
Makeup of the market	A few very large customers	Some large customers plus many smaller ones	Very many very small customers
Economic strength of any one customer	Very large and cannot be ignored	Modest of low	Negligible
Technological strength of customer	Very high, has engineers and laboratories	Low or nil	Variable but cannot be very great collectively
Fitness for use is judge mainly by quality specifications	Qualification testing	Absence of consumer complains	Successful usage
Quality specification dominated by	Consumers	Manufacturers	Manufacturer
Collection and analysis of failure data	Good to fair	Poor to nil	Poor to nil

3.9 QUALITY AND PRICE:

There is general awareness that product price bears some rational relationship to product quality. However researches on the subject have often reported confused relationships, some of which appear to turn contrary to logical reasoning. To interpret researches it is useful to separate the subject as between consumer products and industrial products.

3.10 CONSUMER PRODUCTS:

Numerous researches have tried to qualify the correlation between product quality and product price. A major database for the researches has been the Journal consumer Reports, a publication of consumer Union, a nonprofit supplier of information and advice to consumers. The specific information used in the researches consisted of Consumer Reports published quality ratings of products, along with the associated prevailing market prices.

Researchers offer various theories to explain why so many consumers seem to be acting contrary to their own best interests:

1. The quality ratings are based solely on the evaluation of the functional features of the products –the inherent quality of design. The ratings do not evaluate various factors, which are known to influence consumer’s behavior. These factors include service in such forms as attention, courtesy, and promptness; also décor in such forms in pleasant surroundings and attractive packaging.
2. Consumers generally possess only limited technological literacy; most are unaware of the quality ratings.
3. Lacking objective quality information, consumers give weight to the image projected by manufactures and merchants through their promotion and advertising.
4. Many consumers as quality ratings perceive the price itself. There appears to be a widespread belief that a higher –price product is also a higher quality product.

3.11 QUALITY AND VALUE:

What emerges is that for many consumers, perception of the quality-price relationship is derived from unique interpretation of the terms used:

Quality is interpreted as including factors, which go beyond the inherent functional features of the products.

Price is interpreted as relating to “value” and is paid for those added factors, along with the inherent functional features.

3.12 QUALITY AND SHARE OF MARKET:

Once a product is actively on the market it attains some “share of market”, i.e. a proportion of all sales by all suppliers of that type of product. The size of the product attained market share is of great economic importance. Greater market share means higher sales volume. In turn higher sale volume results in disproportionately higher return on investment due to the nature of the breakeven chart.

3.13 EFFECT OF QUALITY SUPERIOR:

Quality superiority can usually be translated in to higher share market but it may require special effort to do so. Much depends on the degree of superiority and on the ability of the buyer to perceive the different and its significant.

3.14 QUALITY SUPERIORITY OBVIOUS TO THE BUYER:

In such cases the obvious superiority can be translated in to higher share of market. This concept is fully understood by marketers, and they have from time immemorial urged product developers to come up with product, which can then be used to secure higher share of market. Examples of such cases are legion.

CHAPTER-FOUR

4.1 SOME PHYSICAL TESTS OF LEATHER

4.1.1 TENSILE STRENGTH : BASED ON SLP- 6 (IUP/6)

Tensile strength is actually the force (kg) per unit area of cross section (sq. cm) required to cause a rupture of the test specimen.

$$\text{Thus, tensile strength Kg/ sq. cm.} = \frac{\text{Breaking Load (kg)}}{\text{Cross section (sq. cm.)}}$$

4.1.2 ELONGATION AT THE BREAK: BASED ON SLP – (IUP/6)

The extent of elongation of the leather specimen at the time of its breaking. while applying the tensile force, expressed as the percentage on the original length of the specimen in the elongation at break.

Hence,

$$\text{The \% elongation at the break} = \frac{\text{Distance increased by breaking} \times 100}{\text{Distance of the two jaws in normal}}$$

4.1.3 STITCH TEAR STRENGTH (DOUBLE HOLE) LP 8/IS: 5914-1970: E 13/ ALCA:

The double hole stitch tearing strength can be defined as the load (kg) required to tear the sample of leather between two holes of 2 mm. diameter each and whose centers are 6 mm apart, expressed on its unit thickness (cm). So, Stitch tear strength of the specimen was calculated using following formula.

$$\text{Thus, stitch tear strength kg/cm thickness} = \frac{\text{Tearing Load in Kg}}{\text{L/R Thickness in cm}}$$

4.1.4 TONGUE TEAR STRENGTH: (LP 9/IS:5914-1970;PM 30 / SATRA)

The load (kg) required to tear the leather beyond the cut made perpendicular to its surface, expressed per unit thickness (cm) of the test specimen is the tongue tear strength.

$$\text{Tongue tear strength} = \frac{\text{Tearing Load in Kg}}{\text{Thickness in cm}}$$

4.1.5 WET AND DRY RUB FASTNESS TEST BASED ON DIN 54021, SLF-5:

This method determines the fastness of color to felt with which it is rubbed. For this test, a sample of leather is rubbed with a revolving felt pad, and the number of revolutions of the pad required to produce certain effect is measure.

The german standard, DIN- 54021, and SLF-5, specifies a method by the “Krais” tester of “Veslic” in which a whit felt at a force of 1 kg. Load moves back and forth on the grain oxide of the leather through a distance of 10 cm. The felt will be dry for the dry rub fastness test and felt will be wet for the wet rub fastness test. In SATRA instrument the circular dry felt at a load of 2.5 kg, rotates on the grain sides of the leather in the case of rub fastness test and in the case of wet rub fastness test, the wet felt is kept under the load of only 0.75kg. For this investigation SLF-5, method of followed. In both the cases the stained felts are compared with the grey scale.

4.2 EXPERIMENTAL DATA:

The results obtained by different fastness properties testing on the prepared leather samples are tabled in this chapter followed by short description of the result. All this fastness tests are accomplished by using different international standard methods as described in section-

a. Tensile strength and % of Elongation:

Sample No.	Thickness (cm)	Tensile strength (kg/sq. cm)	% of Elongation
1	0.1	130	63%
2	0.1	150	67%
3	0.1	130	59%
4	0.1	220	90%

b. Stitch tear strength:

Sample No.	Thickness (c.m)	Stitch Tear (kg/cm)
1	0.1	80

2	0.1	100
3	0.1	90
4	0.1	80

c. Dry & Wet rub fastness:

Sample No.	Dry rub fastness						Wet rub fastness					
	32 rev.	64 rev.	128 rev.	256 rev.	512 rev.	1024 rev.	32 rev.	64 rev.	128 rev.	256 rev.	512 rev.	1024 rev.
1	5	5	5	5	5	4.5	4.5	4	4	3.5	3	3
2	5	5	5	5	4.5	4	4.5	4	4	3.5	3.5	3

d. Tear strength:

Sample No.	Thickness (cm)	Tongue tear (kg/cm)
1	0.1	35
2	0.1	31
3	0.1	30
4	0.1	28

e. Tongue tear strength:

Sample No	Thickness (cm)	Tongue tear strength (kg/cm)
1	0.1	25
2	0.1	31
3	0.1	25
4	0.1	35

4.3 RESULTS AND DISCUSSION:

- ❖ The tensile strength of the prepared sample lies in the range of 130 to 220 kg/cm². Which is good tensile strength of standard shrunken grain leather. The % of elongation of the prepared samples lies in the range of 59 to 90%, which indicates good results.
- ❖ The dry and wet rub fastness of the leather samples is good.
- ❖ The stitch tear strength of the leather is 80 to 100 kg/cm. which is good result for shrunken grain leather.
- ❖ The tongue tear strength of the leather is 25 to 35. which is good result.
- ❖ The tear strength of leather is 28 to 35 kg/cm, which is good result.

4.3.1 LEATHER CONSUMPTION FOR SAMPLE NO-A

S.No	Components	Size	Quantity	Area in sq. cm
01	Outer top front	34.5×30	01	1035
02	Outer top back	34.5×30	01	1035
03	Bottom	11.2×30	01	336
04	Gusset	12.5×30	02	750
05	Zipper Stand	8×30	02	480
06	Shoulder Strap	70×5	02	700
07			Total Area	4336

Wastages of 15% 650
Total Leather Consumption = 4986 sq.cm

We know that,

1 sq. dm=100 sq.cm
1 sq.ft= 9.29 sq. dm.

Total Leather Consumption =5.367 sq.ft

4.3.2 SYNTHETIC CONSUMPTION FOR SAMPLE NO-B

S. No.	Components	Size	Quantity	Area in sq. cm
01	Outer top front and back	48×28	01	1344
02	Gusset	18×11	02	396
03	Shoulder Strap	61×4	04	976
04	Zipper stand	28×6.5	02	364

Total Area = 3080 sq.cm.

Wastage of 15% = 462

Total Synthetic consumption = 3542 sq.cm.

Total Synthetic consumption = 3.81 sq.ft.

4.4.1. COSTING FOR SAMPLE NO-A

S.No.	Components	Quantity required	Rate R s. P s	Amount (Tk)
01	Leather	5.367 sq.ft	40	214.40
02	Lining	.5 gauge	30	15.00
03	EVA Sheet	1 sheet	25	25.00
04	Foam	.5 sheet	20	5.00
05	Zipper	.5 gauge	6	3.00
06	Sticker	1 piece	10	10
			Total Cost	272.40 (Tk)

Profit 25%.....68.10 (Tk)

Market Price.....330.50 (Tk)

4.4.2. COSTING FOR SAMPLE NO-B

S.No.	Components	Quantity	Rate R s.P s	Amount (Tk)
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		required		
01	Synthetic	3.81sq.ft.	120 (gauge)	50.83
02	Lining	.5 gauge	30	15.00
03	EVA Sheet	.2 sheet	30	06.00
04	Foam	.5 gauge	20	10.00
05	Zipper	.5 gauge	6	03.00
06	Sticker	1 piece	5	5.00
			Total Cost	79.83 (Tk)

Profit 25%.....19.96 (Tk)

Market Price.....99.79 (Tk)

4.5. FINISHING AND PACKING

Thread burning

After stitching, the articles are checked carefully. Excess thread is removed either by trimming with a scissor or soldering in case of nylon thread. Thread burning is done carefully in case the soldering stick damages the stitch of the articles.

#Trimming

At the stage of finishing some product, which is produced by fold, edge construction and binding edge construction may have excess material (leather) on the edge of articles. In this case edge trimming is done by using sharp knives. Highly skilled persons should do trimming in case it damages the whole product become waste.

Colouring

Trimmed edges and any part of articles that needs color are colored by hand or edge coloring machine. As mentioned in pre-assembly stage, coloring are done carefully and after coloring excess paints are cleaned immediately.

Creasing

Creasing operation is applied in shoulder bags for decoration. This operation is done by hand or in case of bulk production it has to be done by universal stamping (creasing) machine.

Final inspection

Before the articles are sent to packing, strict quality control is observed for perfection in assembling, stitching, accurate and smooth functioning of fittings. Strict quality control mechanism is observed from the beginning to the end at every stage of operation for producing high quality product.

Packing

Working women's shoulder bags are the items, which can be damaged, moided or chapped, must therefore be packed carefully and securely.

Points to consider when package

- Do not fill the boxes just with the product, but pack a number of similar items in smaller box, or use some cardboard layers.
- Carefully indicate which products and in which quality is packed in each box, so that it won't be a mystery to the importer.
- Before packing, products should be protected by plastic bags in order to avoid damage from rain or moisture.
- Each box should have a packing list, which gives a specification of all products in terms of quality, type color, etc.....

4.6. SAFETY PRECAUTIONS:

- 1 Switch of the machine when not required.
- 2 To be concentrated during cutting and stitching.
- 3 Hold cutting knife tightly during cutting.
- 4 Keep away your hands from movable band and bell knife.
- 5 Thickness should be checked carefully.
- 6 Avoid long and loose sleeves.
- 7 Know your fire drill.
- 8 Keep your body away from moving parts of the machine.
- 9 Pay proper concentration to the work.
- 10 Check proper alignment between needle and needle plate hole.
- 11 Bring down top pressure wheel gently.
- 12 During changing any tools/spare, switch off the machine.

4.7. ASSESSMENTS CRITERIA:

- Cutting regularity.
- Checking thickness of splitted leather.
- Skiving width and depth must be accurate as per instructions.
- Attaching must maintain the marking.
- Stitching must be 2 mm far from the edge.
- Extra thread must be pulled down and attach or burn properly.
- Thread tension must be accurate.
- Slip stitch is not acceptable.

4.8. CONCLUSION:

Working women's shoulder bags made out of leather lend themselves to an enormous variety of both useful and essential items, which are a need and asset in modern living. Leather bags are fashionable and highly expensive.

In conclusion I wish to inform that leather can be used for making shoes, garments and leather goods, but a vast opportunity to develop, is there in the fields of leather goods manufacturing only.

I have tried my best above manufacturing procedures, materials used, taken safety precaution and assessment criteria to maintain high quality of working women's shoulder bags.

BIBLIOGRAPHY

- Leather Goods Manufacture
G.C.-MOSELEY.
- Leather craft
BY W.A. ATTWATER.
- Possible Defects in Leather production
GERHARD JOHN.
- Quality control Hand Book
J.M. JURAN.
- Quality in Totality
PARAG DEWAN.
- The Manages Hand Book for Total Quality Management
DEBASHIS SANKER.
- The Total Quality Movement
HELGA. DRUMMOND.
- World Leather –April 2001.
- Product knowledge

- Clothing Technology
SWAYAM SIDDYA.
ROLAND KILGUS.
- Leather Apparel Design
FRANCESCA STERLACCI.
- Principle of Leather Manufacture
S.S. DUTTA.
- Monthly Commerce & Industry -
, Issue-195. April.
- Pattern Cutting and making up
M. SHOBEN, MARTIN & P. WARD
JANET.
- Fashion Source Book
KATHRYN M.C KELVEY.
- Quality assurance
World Leather, April/ May, 1990
- Fashion with Leather
Bast Ford
- An Introduction to The Principle of Physical Testing of Leather.
S.S. Dutta

